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# Breastfeeding Education for Fathers: an Intervention to Increase Breastfeeding Rates

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# VALPO

**BREASTFEEDING EDUCATION FOR FATHERS: AN INTERVENTION TO  
INCREASE BREASTFEEDING RATES**

by

**JILL MARIE FRISZ**

**EVIDENCE-BASED PRACTICE PROJECT REPORT**

Submitted to the College of Nursing and Health Professions

of Valparaiso University,

Valparaiso, Indiana

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For the degree of

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Jill Frisz 4/22/2016  
Student Date

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Advisor Date



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## DEDICATION

To Nick, my mom and dad, and my sisters, Jamie and Jackie. Your constant belief in me has allowed me to succeed. To all of my family – without you, I would not be where I am today and thank you for your unwavering support.

## ACKNOWLEDGMENTS

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## ABSTRACT

If every infant were breastfed within an hour of birth, exclusively breastfed until six months, and given breastmilk up to two years, almost 800,000 lives would be saved annually (WHO, 2014). Nationally, breastfeeding rates drop significantly from three to six months. A search of literature yielded significant evidence as factors for facilitators to increase breastfeeding rates. The purpose of this evidence based practice (EBP) project was to determine the effects of best practice measures to educate fathers about breastfeeding to increase anytime breastfeeding rates. The social support theory and ACE Star model guided the literature search and implementation of this project into practice. The literature synthesis yielded three components of best practice: (a) attitude, support, and knowledge should be addressed in education; (b) timing of educational interventions affects breastfeeding outcomes; (c) and types of materials provided are determinants of breastfeeding outcomes. Participants were assigned to control and intervention groups based on dates of attendance at childbirth classes. The intervention consisted four components including two videos, a "dad's playbook," open discussion, and a postcard on mastitis symptoms at four weeks postpartum. Both groups were contacted at six weeks postpartum to collect data. The primary outcome was anytime breastfeeding rates, secondary outcomes included exclusive breastfeeding rates, postpartum partner support, and paternal-infant attachment. Evaluation of data was done through the Mann-Whitney *U* test. No significant results were noted in either the primary or secondary outcomes. The breastfeeding data tool, the postpartum partner support scale, and postnatal paternal-infant attachment questionnaire were used to measure primary and secondary outcomes. Using Cronbach's alpha, the breastfeeding data tool had low reliability ( $r=0.032$ ); however, both the postpartum partner support scale and the postpartum paternal attachment questionnaire were highly reliable ( $r = 0.94$  and  $r = 0.86$ , respectively). Future studies should continue to apply interventions to educate fathers but should focus on higher levels of participation and should more precisely define the types of materials to provide to fathers.



## CHAPTER 1

### INTRODUCTION

#### Background

Breastfeeding is considered an essential preventative measure to prevent neonatal morbidity and mortality (World Health Organization (WHO), 2014). Currently, the United States national exclusive breastfeeding rates are 40.7 percent at three months and drop substantially to only 18.8 percent at six months (Centers for Disease Control and Prevention, 2014).

Breastfeeding is important in improving newborn health, especially in decreasing morbidity and mortality in the first year of life, and decreasing the overall risk of obesity and heart disease (Condon, Corkindale, & Boyce 2008; Jenkins, Tavengwa, Chasekwa, Chatora, Taruberekera, Mushayi, Madzima, & Myuba, 2012; WHO, 2014). Exclusive breastfeeding has been defined as “the infant only receives breast milk without any additional food or drink, not even water, with the exception of oral rehydration solution, or drops/syrups of vitamins, minerals or medicines” (WHO, 2015). Exclusive breastfeeding supplies the newborn with essential nutrients from the mother only. Any breastfeeding, or anytime breastfeeding, has been defined as breastfeeding at any time in the newborn’s life (Maycock et al., 2013).

The U.S. Department of Health and Human Services has set specific goals for mother and infant health in *Healthy People 2020*, including increasing breastfeeding rates. The *Healthy People 2020* guidelines have specific goals for anytime, and exclusive breastfeeding rates at three and six months. When compared to the goals, actual rates are still far below what they should be (Table 1.1; U.S. Department of Health & Human Services (HHS), 2015).

Table 1.1

*Healthy People 2020 Goals v. Actual Rates*

<u>Outcome</u>	<u>Goal</u>	<u>Actual Rate</u>
Anytime Breastfeeding	89.1 percent	79 percent
Breastfed at six months	60.6 percent	43.5 percent
Breastfed at one year	34.1 percent	22.7 percent
Exclusive breastfeeding at 3 months	46.2 percent	33.6 percent
Exclusive breastfeeding at 6 months	25.5 percent	14.1 percent

Given the disparity between targeted rates and actual breastfeeding rates within the nation, there is a need for practitioners to focus attention on the matter. Evidence-based Practice (EBP) combines the systematic and critical appraisal of evidence, clinical expertise of the researcher, and patient preferences and values to create best practice measures in the clinical practice setting (Melnyk & Fineout-Overholt, 2011). The purpose of this EBP project is to determine the best practice measures to educate fathers about breastfeeding to increase anytime breastfeeding rates in newborns. This process began initially by identifying a clinical problem in breastfeeding rates. The ACE Star model and the Social support theory served as models to guide the project from the first literature search to the implementation and evaluation of the project. Prior to implementing these models into the project, it was important to determine the nature of the problem, background information from both the clinical agency and the literature, and the purpose of the project. These areas are discussed in this section.

**Statement of the Problem**

The WHO (2014) reports that if every infant were breastfed “within an hour of birth, given only breast milk for their first six months of life, and continued breastfeeding up to the age of two

years, about 800,000 child lives would be saved every year.” Efforts by healthcare groups have increased in the United States to shy away from formula feeding and to promote of breastfeeding. The creation of the Baby-friendly Hospital Initiative (BFHI) as well as the utilization of social media outlets to promote breastfeeding to mothers still does not appear to be enough. The mother-infant dyad, as it is, does not appear to be sufficient in increasing breastfeeding rates. One possible way to combat this use is through the incorporation of the father and making the mother-father-infant triad.

### **Data from the Literature**

Breastmilk is an essential supplement for the newborn. When the infant drinks his or her mother’s milk, antibodies from the mother are passed to the newborn. This passive immunity bolsters the infant’s immune system to protect him or her against serious illnesses. It provides natural antibodies that help to combat serious infections, including pneumonia and diarrhea (WHO, 2014). In addition to the acute illnesses that may affect newborns, breastfeeding can also help to combat disease and illnesses later in life. Studies have also shown breastfeeding helps to reduce the risk of obesity and chronic, progressive diseases such as diabetes and heart disease (Condon et al., 2008; Jenkins et al., 2012; WHO, 2014).

Breastfeeding can also be beneficial to mother: risk reduction against ovarian and breast cancer, prevention of obesity, and birth control (WHO, 2014). Women who breastfeed burn more calories which in turns can be beneficial for losing any weight gained during pregnancy. A return to pre-pregnancy weight is helpful in preventing obesity. Additionally, breastfeeding acts as birth control through hormones that help to prevent ovulation. Women should be cautioned that breastfeeding is only about 98 percent effective as birth control when breastfeeding is regular (WHO, 2014; Youngkin, Davis, Schadewald, & Juve, 2012).

Breastfeeding education programs and information targeted to fathers has gained recent popularity in the healthcare community and in social media. Women, Infant, and Children (WIC) has two programs targeting African American fathers and Hispanic fathers. Additionally, several

social media efforts have sought to improve knowledge provided to fathers. The American Academy of Pediatrics (AAP), Baby Center.com, and La Leche League International (LLL) are just a few of the many internet sites to provide information and resources for fathers.

### **Clinical Agency Data**

This project was implemented at facility in Indiana. It is a not-for-profit organization offering a variety of services to patients. In the obstetric department, the hospital offers 24-hour obstetrician on site, a personal lactation consultant, private rooms, childbirth education classes, and care from nurses and technicians. The mission statement of the facility is to serve patients with compassionate health care of the highest quality which reflects the hospital's focus on providing the best care to the newborn and family. At the time of implementation, the hospital was on the road to becoming a "baby-friendly hospital." This was an initiative the hospital was taking to promote high quality breastfeeding care to mothers, fathers, and newborns. Prior to project initiation, breastfeeding initiation rates at the hospital were approximately 81 percent and breastfeeding exclusivity, when data was collected, was approximately 40 percent (Lactation Consultant, personal communication, July 24, 2015).

Two lactation consultants were on site at the project facility. They assisted and guided the project manager with implementation of the EBP project at the hospital. The project manager combined the use of the ACE Star model, the social support theory, and the mission statement of the hospital to implement the EBP project to participants in the project. This meant providing high quality educational materials to fathers of newborns. Breastfeeding and prepared childbirth classes were open to both mothers and fathers; however, no class specifically targeted the role of dad in breastfeeding.

### **Purpose of the EBP Project**

Because new information and research is constantly being conducted on breastfeeding and increasing breastfeeding rates, it is essential that local facilities remain up to date on recommended guidelines. While information is available to support the use of fathers as

promoters of breastfeeding, little has been done by local facilities to specifically reach and educate fathers. The purpose of this EBP project is to establish best practice guidelines for educating fathers about breastfeeding to increase breastfeeding rates in newborns. To better guide the EBP project, a compelling clinical question in population, intervention comparison, outcome, and time (PICOT) format has been developed.

**Identifying the compelling clinical question.** The clinical question is the question raised to determine the intervention to be implemented, with whom to implement the intervention with, and the outcome and timing of intervention. The clinical question for this project is “What is the effect of breastfeeding education intervention aimed at first time fathers versus current practice on anytime breastfeeding rates at 6 weeks postpartum?”

**PICOT format.** The PICOT format is an acronym that helps to identify the population (P) of interest, the intervention (I) to be implemented, the comparison (C) upon which the intervention is weighed against, the outcome (O) to be measured, and the time (T) given to measure the project (Melnik & Fineout-Overholt, 2011). This user friendly formula provides a way for the project manager to address all major aspects of the EBP project:

P - The population of interest was fathers. Fathers were the target group of the breastfeeding education. The normal practice of the facility was to open the breastfeeding and prepared classes to both mothers and fathers with an emphasis on mothers. The father is a potential source of support for the mother to increase overall breastfeeding rates. Fathers had to be 18 years of age or older to participate in the study. Additional data was collected from female partners. They also had to be 18 years of age or older to be included in the project.

I – The intervention was breastfeeding education aimed at first time fathers. The class was added to the prepared childbirth classes already offered at project site. The intervention was an extension onto the Saturday-only prepared childbirth class, lasting approximately 30 minutes. Participants were recruited prior to the start of these classes



from October to December. The information was aimed at fathers directly and included a video, a “Dad’s Playbook” developed by the project manager, and open discussion. Additionally, participants received a congratulatory card and a second card at four weeks with information on mastitis.

C – The comparison of interest was the “usual” care provided, including the prepared childbirth classes, the care provided at the facility, and access to the breastfeeding educator. The control group was recruited prior to the start of the five-session childbirth classes. These classes were held once a week for five weeks for each session and participants were recruited from October to December in conjunction with the intervention group recruitment timeframe.

O – The outcome of interest was any breastfeeding rates. Exclusive breastfeeding rates were also collected. The secondary outcome measures were support and paternal-infant attachment. Breastfeeding rates were measured using a questionnaire created by the project manager based on scales found within the literature (Maycock et al., 2013; Mitchell-Box & Braun, 2013; Susin & Giugliani, 2008; Tohotoa et al., 2010). Support was measured via the postpartum partner support scale which was filled out by the female partner, and paternal-infant attachment was measured using the Postnatal Paternal-Infant Attachment Questionnaire (PPAQ).

T- The timeline for the intervention was from October to December. Intervention prepared childbirth classes were held on October 17<sup>th</sup>, November 24<sup>th</sup>, and December 19<sup>th</sup>. Data was collected weekly at the project site in January and February. Participants were recruited to participate in classes and were enrolled in the project upon signing consent. Participants were mailed the data collection form at the six-week postpartum period. These forms were returned up to March 30<sup>th</sup> and any forms received after this time were not included due to project completion deadlines.

### **Significance of the Project**

The EBP project aimed to increase breastfeeding rates by educating fathers. Current methods to increase breastfeeding rates are proving to be insufficient. Fathers provide support to mothers in daily interactions and are an additional target for breastfeeding education (Abbass-Dick et al., 2014; Bich et al., 2013; Gözükara & Taşkin, 2014; Maycock et al., 2013; Mitchell-Box & Braun, 2013; Ozlüses & Çelebioglu, 2014; Raeisi et al., 2013; Susin & Giugliani, 2008; Tohotoa et al., 2010). The initial outcome of the project is to increase breastfeeding rates in the short-term follow-up period at six weeks; however, the overall goal is to have a longstanding portion of breastfeeding education for fathers implemented at the project facility. If successful, the project has the potential to become the standard of care and education at the implementation site. Additional outcomes of the project include increased support provided to females who breastfeed and increased attachment between the father and newborn. By being available to offer advice and assistance, fathers' support toward mothers may be increased. Fathers may feel increased attachment to the newborn by having knowledge to help facilitate the breastfeeding process and by actively participating in breastfeeding.

## CHAPTER 2

### Theoretical Framework and Review of Literature

Utilization of a theoretical framework and an evidence-based practice framework were essential for the development and implementation of EBP. The social support theory and ACE Star model were chosen to guide this EBP project. In addition to these, a review of the literature was conducted to provide support for the EBP project. This chapter provides details on the social support theory, the ACE Star model, and the review of literature.

#### Theoretical Framework: Social Support Theory

An individual armed with a strong social support system has the capability of promoting healthy behaviors, increasing self-competence, increasing coping skills, and decreasing negative feelings of anxiety and depression (Schaffer, 2013). The social support theory is a middle range theory that focuses on the relationships of individuals. The social support theory was used as a guide in the implementation of this EBP project. The remaining portion of this section details the social support theory and its implementation into practice.

**Description of the social support theory.** The term “social support” was first coined by Cassel in 1974. Social support studies the interpersonal relationships and interactions between individuals (Schaffer, 2013). The basis of Cassel’s theory of social support and later theorists was that social support can act as a “buffer” to lessen the effects of stress on an individual. Social support is a middle range theory which can be described as narrower in scope [than a grand theory], focusing on more specific phenomena, more appropriate for empirical testing, and more applicable to practice (Peterson, 2013). Social support was a difficult concept to provide with a concrete definition and the theory was complex in its development. Social support can be given or received by an individual. The main tenant social support is that it can be provided to an individual in a high stress situation to act as a defense and lessen the effects of stressors.

The key constructs of the social support theory are emotional support, informational support, instrumental support, and appraisal support. Emotional support is characterized by a sense of admiration, respect, liked-ness, or love received by someone; informational support occurs when one provides information during a stressful time; instrumental support is when one provides actual items or services; appraisal support is providing one with a confirmation of his or her actions or words (Schaffer, 2013). Social support exists within close networks, larger social networks, and within professional networks. Support can be given or received between individuals within these networks and can be seen as positive support [helpful] or negative support [hindering] (Schaffer, 2013). The way one perceives social support is key to their coping and adaptation to stress.

A number of factors have been found to influence social support: perception of needed support, timing of support [including life stage], support available, motivation to provide support, and direction of support (Schaffer, 2013). No one factor has been cited as being more important than another. Each factor is incorporated into a relationship to form the support system provided from one individual to another.

**Perception of support.** The perception of needed support, the provider and receiver of support must be in agreement (Schaffer, 2013). If the individual providing support and the individual receiving support do not agree on the type or amount of support provided, then the support given may not be helpful. This can be support such as tasks that need completed or providing comfort and encouragement. If too much, not enough, or the item desired is unfulfilled, the receiver of support may not find it helpful.

**Timing of support.** Timing of support is another factor that can affect an individual's perceived support. Timing depends on the individual's current stage of life, as some stages can be considered more stressful, and requires increased support provided or received (Schaffer, 2013). For example, support provided to a mother when her child leaves for college is much

different than support provided to a person who loses a loved one. The situational context is important in determining how much support will be needed.

**Available support.** Not only does the perception of and timing of support matter, support available is also important. Available support can be from within close personal relationships [husband and wife], larger social networks [groups of mothers and fathers], and professional networks [healthcare organization]. According to Schaffer (2013), the perception of available support supersedes actually having support available. Taking this into consideration, if an individual feels no support networks exist, he or she may experience higher stress levels than others in similar circumstances with perceived networks available, even if the same amount of support is available in both instances.

**Motivation to support.** Motivation to provide support for an individual can have multiple intentions and can affect the quality of support provided (Schaffer, 2013). An individual who provides support for highly ranked reasons may provide the support with more passion and enthusiasm than the individual who finds little reason to provide support. Provision of high quality support may provide better outcomes for the individual who receives the support. On the other hand, an individual who knows too little or does not feel a need to provide support may not act as a strong system of support for the individual in need.

**Direction of support.** The final factor affecting social support is the direction of support. As mentioned previously, support can be given or received and in some instances, both. Support is considered unidirectional if it is provided by one person and received by another. Alternatively, support is considered bidirectional if it is provided and received by both parties.

Because of the association between social support and stress, the social support theory has been chosen to analyze the effect of a breastfeeding education intervention provided to fathers. There are many stressful situations that occur with having a newborn, but the current stressful situation of interest is breastfeeding. The father of a newborn typically has a close relationship with the mother and can act as a source of social support. It has been reported that

mothers perceive breastfeeding as a stressful situation because they are concerned about having a lack of adequate milk supply and about the pain caused from breastfeeding (WHO, 2014). By equipping a father with knowledge and materials about breastfeeding, he can provide support to a mother during breastfeeding. In the instance of breastfeeding support, the mother is to receive unidirectional support from the father.

**Application of the social support theory.** The social support theory was instrumental in the design and application of this EBP project. The four constructs were incorporated into the project a) emotional support, b) informational support, c) instrumental support, and d) appraisal support. Because support could be provided on many different levels, it was necessary to break down the aspect of social support that was essential to this project. Professional support was provided from the educator to the participant fathers. The male participants could have then provided support on a personal level to the breastfeeding mother.

Emotional support focused on respect, admiration, and love. The support was measured utilizing the postpartum partner support scale (Chapter 3). Raising awareness of breastfeeding practice difficulties and increasing perseverance in breastfeeding has been shown to increase respect and appreciation for the breastfeeding mother (Mitchel-Box & Braun, 2012). Application of education provided to fathers via a “Dad’s Playbook” addressed emotional support by educating fathers on the need to encourage the breastfeeding mother. Mothers may have needed someone to “cheer” them through the difficulties associated with breastfeeding. The father was a perfect companion to encourage the mother to keep going despite challenges. Additionally, fathers received emotional support by providing videos directed at fathers. The videos addressed the fathers’ perceptions that he could not help with breastfeeding and provided encouragement to fathers in assisting with breastfeeding.

Informational support was also addressed in the “Dad’s Playbook.” This was done by increasing awareness of complications that could have come about, cues to breastfeeding, and the basics of breastfeeding. Breastfeeding had the potential to be a highly stressful experience

for both the mother and father. Often fathers had expressed concerns about feeling left out or helpless (Mitchell-Box & Braun, 2012; Susin & Giugliani, 2008; Tohotoa et al., 2010). By equipping fathers with knowledge about complications, cues to breastfeeding, and breastfeeding basics, the project manager helped the father have tools to assist the mother, addressed concerns about being left out, and helped to ensure the father was not helpless.

The EBP project addressed instrumental support by providing a magnet and a postcard. The magnet gave information on breast milk storage guidelines. It was given to intervention participants at the time of the class. Additionally, participants in the intervention group received a card at four weeks postpartum containing information on mastitis. This provided participants with instrumental handouts on mastitis in the instance the condition does occur. By having materials at hand to utilize, the male participants helped to provide support to their partners.

Finally, appraisal support was addressed within the educational classes. Validation was necessary to provide appraisal support. Fathers were taught how to provide the wife with validation in her breastfeeding efforts. This was included in the open discussion section of the class. Fathers also had time to ask questions about their concerns with breastfeeding. The educator validated any concerns the fathers expressed.

**Strengths and limitations of the social support theory.** One strength of the social support theory was the broad applicability of the topic. This topic was applied to scenarios utilizing a support system to decrease the effects of stress. The health of an individual can result in mild to severe stress depending on the situation at hand. In this EBP project, all four constructs of the social support theory were addressed via the educational intervention provided to fathers. By providing fathers with education about breastfeeding, they were potentially empowered to provide emotional, information, instrumental, and appraisal support to breastfeeding mothers. Another strength of the social support theory was its testability in practice. Scales have been developed by various authors to measure social support, including the postpartum partner support scale which was utilized in this project. Having the capability to

measure social support within the intervention was an important consideration as it can test the effect of the theory within the EBP project.

A major limitation of the social support theory has been the lack of consensus by theorists on a single definition of social support (Schaffer, 2013). Without a single definition of support, research involving the social support theory may not be consistent. The findings of social support in relation to a specific topic differed depending on the definition applied. Another limitation to this theory was the complex factors affecting social support. For example, individual characteristics and perception of support have the potential to vary from one person to the next and even within the same person at different times.

### **Evidence-Based Framework: The ACE Star Model**

First created by the Academic Center for Evidence-based Practice (ACE), the ACE Star model was an interdisciplinary effort to transfer nursing knowledge into practice. Because of its status as a well-known and reliable framework, the ACE Star model was selected to guide this EBP project. The ACE Star model has five stages to guide the project manager from initial knowledge discovery to evaluation of the EBP project. The next portion of Chapter 2 will discuss the ACE Star model and its applicability to practice.

**Description of the ACE Star model.** Serving as a framework for transforming knowledge into the practice setting, the ACE Star model has five steps that guide the researcher: knowledge discovery, evidence summary, translation into practice recommendations, implementation into practice, and evaluation (Melnyk, & Fineout-Overholt, 2011; Stevens, 2012; Schaffer, Bandau, & Diedrick, 2012). The ACE Star model is versatile and can be used in both the educational and clinical setting to implement practice change. An advantage of the ACE Star model is its similarity to the nursing model (Schaffer et al., 2012). Given the similarity to the nursing process along with the broadness of each step, the ACE Star model allows for the novice practitioner to easily utilize the model. This model can be utilized by both individuals and organizations to achieve a straightforward application of evidence into



practice. It allows for an evaluation to determine the effectiveness of implementation. For these reasons, the ACE Star model was selected as the framework of choice for this EBP project.

**The Five stages of the ACE Star model.** Following the ACE Star model, the EBP project must go through each stage or phase of the framework. Knowledge discovery is the process in which new knowledge comes about from single research studies (Stevens, 2012; Melnyk & Fineout-Overholt, 2011). These single research studies range from initial research processes such as qualitative studies to single randomized controlled trials. The discovery process takes the topic of interest from the early stages of development to evaluation of the project in practice. This phase builds upon increasing knowledge about a gap in practice and the discovery of ways to improve outcomes.

The second phase, evidence summary, is the synthesis of a single, rational statement on the scientific view of the topic of interest. By combining the results of multiple research studies, the evidence summary has several important functions: elimination of bias, elimination of chance results, increasing reproducibility of findings, and increasing reliability of results (Stevens, 2012). These summaries are found in the form of systematic reviews or meta-analyses. Summarizing results to a single piece of literature allows for the practitioner to review the results faster and in a more manageable way. Once the evidence has been summarized, it is then ready for translation into practice recommendations.

The third stage of the ACE Star model combines translation of the evidence with recommendations to form clinical practice guidelines (CPGs; Stevens, 2012). A CPG is developed by taking the evidence summary and combining it with clinical expertise. The importance of CPGs lies in the consensus of experts. Experts evaluate the evidence provided in the second stage and validate its meaning for practice. CPGs provide a direct association between the recommendations made and the strength of evidence. The CPG can be applied at a local facility and adapted to fit the needs of clients. This allows for individualization of CPGs to suit the unique situation of a facility.

The fourth stage of the ACE Star model is implementation into practice or integrating the evidence into practice. This is the most familiar phase of the model as the standards of the healthcare field require practice be based on research (Stevens, 2012; Melnyk & Fineout-Overholt, 2011). It is during this phase of the EBP project that an intervention will be applied into practice with the hope of initiating a practice change. Some important considerations when implementing the project are population, facility, timing, and cost.

Before the EBP project will be accepted by the facility to create a new standard of care, it must be evaluated. Evaluation is the fifth and final stage of the ACE Star model and is an important indicator in the feasibility of the project. It is necessary to “verify the success of EBP” (Melnyk & Fineout-Overholt, 2011). The success is measured utilizing specific tools that detect patient, provider, and/or organizational impact.

**Application of the ACE Star model.** Following the ACE Star Model stages, the project manager hoped to develop a practice change by integrating research. This research supported the use of breastfeeding education provided to fathers to increase anytime breastfeeding rates. This began with knowledge discovery and continued through to the evaluation of the project. The breakdown of each stage of the ACE Star model is described below.

**Knowledge discovery.** The knowledge discovery process began with an interest in breastfeeding and the gap in infants receiving breastfeeding at any time in the first six months of life. According to HHS (2015), the target rate of anytime breastfed infants is 81.9 percent; the actual rate of breastfed infants reported from 2007-2009 was only 74 percent. This disparity led to a search of databases and CPGs that provided interventions to improve breastfeeding rates. One of the identified interventions was to increase support provided to mothers from sources such as fathers and family (American College of Obstetrics and Gynecology, 2013; AAP, n.d.; United States Preventative Services Task Force, 2008). The initial investigation of breastfeeding education for fathers revealed positive effects on breastfeeding rates. These results have led

the project manager to further investigate local breastfeeding rates and the breastfeeding education provided to fathers.

**Evidence summary.** Following the guidelines of the ACE Star model, the evidence was synthesized into a single, meaningful statement (Stevens, 2012; Melnyk & Fineout-Overholt, 2011). The use of multiple databases and thorough review of articles selected allowed the project manager to develop this summary. Breastfeeding education aimed at fathers in the prenatal and postpartum period can increase breastfeeding rates. This summary aided in the initial process of developing an intervention for implementation.

**Translation into practice recommendations.** From the evidence summary and clinical expertise, the project manager developed an evidence-based protocol, which included breastfeeding education for fathers. This protocol was developed based on evidence collected from the literature. The evidence in the literature had specific themes that emerged to guide the development of a breastfeeding education program for fathers. The themes will be discussed thoroughly in the Literature Search section of Chapter 2.

**Implementation into practice.** Following the development of the educational intervention, the intervention was implemented into a hospital setting. This intervention was presented to soon-to-be fathers. It followed the themes that emerged from the literature in both the timing of the intervention as well as the materials presented. The education occurred before the arrival of the newborn with follow-up interventions in the postpartum period as well.

**Evaluation.** Evaluation is the final stage of the ACE Star model and is essential to measure the success of the EBP project. The evaluation of the EBP project was done through outcome measurement. The main outcome measurement for the project was breastfeeding at any time throughout the postpartum follow up. Secondary measures included social support and paternal-infant attachment. Breastfeeding practices and exclusivity were measured from a tool created by the project manager based on tools within the literature (Maycock et al., 2013; Mitchell-Box & Braun, 2013; Susin & Giuliani, 2008; Tohotoa et al., 2010). Social support

measurement was done via the postpartum partner support scale and paternal-infant attachment was measured utilizing the PPAQ.

**Strengths and limitations of ACE Star model.** The ACE Star model has both strengths and limitations, which influenced the use of the model. In this project, the parsimoniousness of the ACE Star Model allows for a seamless flow from one stage to the next. Essentially, these phases build naturally upon one another. This allowed for easy assimilation of findings to implementation and then evaluation. The strength of this process is also that it is very similar to the nursing process which builds from assessment, diagnosis, outcome identification, implementation, and evaluation (American Nurse Association, n.d.). The ACE Star model has five steps, similar to the nursing process; it has an initial “assessment” phase with knowledge discovery and allows for implementation then evaluation. For the advanced practice nurse (APN), the ACE Star model can be seen as a familiar framework and may be considered “user friendly.”

One limitation of the ACE Star model is the absence of a stage to pose a PICOT question. Without this stage, it is unknown how the process of knowledge discovery was initiated. Additionally, the project itself poses some limitations to the ACE Star model. The evaluation period of six weeks allowed for collection of breastfeeding rates over an extended period of time; however, evaluation of breastfeeding rates (both anytime and exclusive) cannot be collected at six months and one year. The longer measurements of six months would provide better outcome likelihood of breastfeeding to the one-year mark. The one-year breastfeeding mark is measured by WHO and HHS and is considered to “appropriate” length of time to breastfeed an infant (WHO, 2014; HHS, 2015).

### **Literature Search**

The first stage of the ACE Star model is knowledge discovery. This can only occur through an appropriate literature investigation. The process to knowledge discovery occurred in

a step-like approach beginning with identifying the correct search engines, inputting the best key words, developing inclusion and exclusion criteria, and a thorough appraisal of the evidence.

**Search engines and keywords.** The Valparaiso University library provides students with resources and databases that bring in the most up to date and complete search options. Databases utilized for this project included the Cumulative Index to Nursing and Allied Health Literature (CINAHL), ProQuest Allied Health Source, PsychINFO, Healthsource: Nursing and Academic Edition, Medline, Joanna Briggs Institute (JBI), and the Cochrane Database. In addition to utilizing these databases, references of pertinent studies were reviewed for additional articles. Consultation was provided by the Valparaiso University Librarian and by the project advisor.

Prior to searching all databases, it was necessary to develop the search terms that would provide the most relevant and inclusive list of evidence available. The development of the search required incorporating the “PICO” portion of the PICOT question into the terms. As mentioned previously, the PICOT question was “What is the effect of breastfeeding education intervention aimed at first time fathers versus current practice on anytime breastfeeding rates at 6 weeks postpartum?” The population of interest was fathers and the intervention was breastfeeding education. After refining the search terms appropriately, the following was inputted into each of the databases. Keywords in the search were breastfeed\*, breast-feed\*, “breast feed\*” all three separated by the Boolean operator OR; and educat\* OR intervene\*, promot\*, counsel\*, again all three separated by the Boolean operator OR; and father\*, “male partner”, “significant other,” all separated by the Boolean operator OR. The search was inputted into CINAHL initially and inclusion and exclusion criteria were applied. The purpose of putting the search into one database first was to determine the validity of the results and to determine their appropriateness to the topic of interest. This search was found suitable and was then applied to all other databases. The initial search results were as follows CINAHL 172 results,

Medline 426 results, Proquest 4994 results, PsycINFO 90 results, Healthsource 70 results, JBI zero results, and Cochrane database 21 results (Appendix B).

**Inclusion and exclusion criteria.** The inclusion and exclusion criteria helped to eliminate search results that were irrelevant to the topic and to narrow down results to the most recent evidence. After inputting the appropriate search terms, the following inclusion criteria were applied: a) 2010-2015, b) scholarly (peer-reviewed) journals, c) English language. Once the inclusion criteria were applied, the results list was greatly shortened and each result was reviewed for applicability to the project. To assess the results even further, exclusion criteria were used to eliminate results from the project. The exclusion criteria were a) no intervention involving fathers, b) education applied to topics other than breastfeeding, and c) focus on high-risk populations (such as neonatal intensive care unit stay).

CINAHL had 52 results following application of inclusion criteria. Reviewing article titles and abstracts, a total of 14 articles were chosen for further review via critical appraisal. Applying the inclusion criteria to Healthsource produced 34 results and further application of exclusion criteria left one article for critical appraisal. Similarly, PsycINFO had 35 results that met inclusion criteria and utilizing exclusion criteria left no results for appraisal. Medline produced a much larger result list with 136 articles meeting inclusion criteria. Four of the 136 articles were selected for review after evaluating the results with the set exclusion criteria. Proquest yielded 37 possible results for the project and a final review of abstracts for relevancy left one result to be critically appraised. Finally, the Cochrane Database and JBI were also evaluated for relevant results. Only 16 of the 21 results from the Cochrane database met inclusion criteria and none of these results were selected for further review. After reviewing abstracts of these articles, they did not fit the subject matter appropriately. The majority of them had a breastfeeding education component but it was not aimed at fathers and the others were duplicate articles. JBI also had no results that fit the inclusion and exclusion criteria of the project. It is important to note that while only a small number of articles were selected for review, there were several results that

were duplicates throughout the review of literature that had been selected for critical appraisal. In total, 20 articles were selected for critical appraisal. The selected research was appraised using the John Hopkins Nursing Evidence-Based Practice appraisal tools. There are two separate tools: one for non-research articles such as systematic reviews and a research evidence-based appraisal tool. After reviewing each of the 20 articles for appraisal, only nine were selected to be applied to the EBP project and eleven were not included. Of those articles not included, four of the articles made no changes in father education, one article did not have enough information and had major flaws, two of the articles were expert opinion only, and four were qualitative studies. The qualitative studies were not included due to the fact that many only evaluated fathers' perceptions about breastfeeding and not educational interventions. While this can contribute to the need for education, it did not help with the implementation of the intervention. The final articles selected consisted of one integrative review, three randomized controlled trials (RCT), and five quasi-experimental studies.

**Levels of evidence.** Levels of evidence were determined utilizing the Melynck and Fineout-Overholt's (2011) rating system. Using this hierarchy, there are seven levels of evidence. Each level represents the quality of the evidence, with Level I being the highest and Level VII being the lowest level of evidence. Level I is reserved for evidence from systematic reviews or meta-analyses of RCTs and Level II is evidence from single-study RCTs. Level III is evidence obtained from interventional studies without any randomization. Level IV is the evidence made available from case-control and cohort studies. Levels V, VI, and VII move onto those studies involving no experimentation. Level V is the evidence from systematic reviews of descriptive and qualitative studies. Finally, Levels VI and VII are the evidence obtained from single descriptive or qualitative studies and from expert opinions, respectively. Utilizing this hierarchy, the literature selected for appraisal was assigned an appropriate level of evidence (Table 2.1).

Table 2.1

*Hierarchy of Evidence*

<u>Level of Evidence</u>	<u>Inclusion in EBP Project</u>
Level I: Systematic review or meta-analysis of RCTs	1
Level II: RCTs	3
Level III: Controlled trials without randomization	5
Level IV: Case-control or Cohort Studies	0
Level V: Systematic review or meta-analysis of descriptive and qualitative studies	0
Level VI: Descriptive or qualitative studies	0
Level VII: Expert opinion	0

**Evidence appraisal.** Following the assignment of a Level of Evidence to each of the selected articles, an appraisal of each article was undertaken. This appraisal was done utilizing the John Hopkin’s Nursing Evidence-Based Practice (JHNEBP) Research Evidence Appraisal tool. The nine articles selected for inclusion and a thorough discussion of the findings is included within this section.

**Level I evidence.** Michtell-Box and Braun (2013) conducted an integrative review of the literature to evaluate the impact of “male-partner-focused breastfeeding interventions on breastfeeding initiation, exclusivity, and continuation” (p. 473). After reviewing the article, the project manager gave the study a JHNEBP grade of “B.” The authors conducted a thorough review of the literature and searched PubMed, PsychINFO, CINAHL, and the Cochrane



Database for relevant literature. The initial search yielded 535 articles and after the application of inclusion and exclusion criteria, 46 articles were read completely and a final total of four articles were included in the review. Two of the studies were randomized controlled trials and two were quasi-experimental in design. The studies reviewed had a total of 913 participants receiving various types of educational interventions including open discussion, tangible aid, incentives, and follow-up support. Types of aid provided included videos, role-play, discussion, and leaflets. The outcomes of the interventions included breastfeeding initiation, breastfeeding exclusivity, and breastfeeding continuation.

Of the three studies that measured breastfeeding initiation, two of the three found that breastfeeding initiation was higher in the intervention versus control groups ( $p = 0.03$ ,  $p = 0.01$ ; Mitchell-box & Braun, 2013). Similarly, three studies in the review also examined the exclusive rate of breastfeeding. Exclusive breastfeeding meant breastfeeding was the only form of nutrition provided to the infant. All three studies found a significant increase in exclusive breastfeeding rates for the intervention versus control groups (Appendix A). The final outcome measurement of breastfeeding continuation was measured in three of the four studies; however, only one of the studies found a significant increase in breastfeeding continuation following the intervention ( $p = 0.006$ ; Mitchell-box & Braun, 2013). Findings from this integrative review encouraged the utilization of breastfeeding education programs aimed at fathers to increase breastfeeding. However, this review also unveiled persisting issues with breastfeeding longevity. Given the findings of this integrative review, its inclusion in the foundation of the EBP project is essential. In addition to this one integrative review, three Level II articles were applicable to the project.

**Level II evidence.** Three articles were classified as Level II evidence, or single study RCTs. The first of these RCTs was conducted in 2014 by Abbass-Dick, Stern, Nelson, Watson, and Dennis. The purpose of the RCT was to evaluate the effect of a co-parenting breastfeeding intervention on breastfeeding exclusivity in the primiparous population (Abbass-Dick et al.,

2014). Following the appraisal of the study, it was given a JHNEBP grade of "A." This study was conducted in Canada and the inclusion and exclusion criteria included primiparous mothers with a single birth, 18 years or older, full term gestation, English speaking, and living with a male partner. Women were excluded from participation if they shared a room with another participant, if they had a medical problem that prohibited breastfeeding, an infant who would not be able to be discharged with the parents, whose partner could not participate in the study, would not have internet or phone access, and who were not planning to breastfeed for 12 weeks or more. According to Abbass-Dick et al. (2014), 214 couples were needed to ensure 80% power. A total of 214 couples were randomized to control and intervention groups. Most of these participants were married, between the ages of 27 and 38, had some education, and planned on breastfeeding for at least six months.

Couples were randomly assigned to the control or intervention group after signing informed consent. The intervention was implemented in the hospital following delivery. The control group received the usual level of care, which included breastfeeding support while in the hospital and the support available to the community. The intervention group received an in-hospital discussion, a co-parenting and breastfeeding booklet, a video, access to a website, follow-up emails, and a follow-up telephone call in addition to the usual care.

Exclusive breastfeeding was measured at six and 12 weeks postpartum with breastfeeding duration, perception of the co-parenting relationship, perception of support, paternal perception of breastfeeding self-efficacy, and paternal infant feeding attitude measured along these intervals. The authors also measured breastfeeding in general, without exclusivity to determine any significance. An alpha of 0.05 was utilized and a 15% increase in exclusive breastfeeding rates from the overall baseline was considered significant. The authors found more mothers were breastfeeding at six weeks in the intervention group than in the control and more were exclusively breastfeeding at six and 12 weeks, but these results were not significant ( $p = 0.06$ ,  $p = 0.09$ ,  $p = 0.27$  respectively; Abbass-Dick et al., 2014). Women in the intervention

group were breastfeeding significantly more in the intervention than in the control group at 12 weeks ( $p = 0.02$ ). These results indicate in favor of the co-parenting intervention. While the intervention may not increase exclusivity with significance, it does increase rates overall at 12 weeks postpartum which is significant. The other secondary measure of significance was the paternal breastfeeding self-efficacy score, maternal support, and maternal satisfaction with the intervention group having higher self-efficacy, support, and satisfaction than the control ( $p = 0.03$ ,  $p = 0.02$ , and  $p = 0.04$  respectively; Abbass-Dick, 2014). This study showed strong favor for the implementation of a breastfeeding education intervention for fathers. Results indicated breastfeeding efficacy for fathers, support and satisfaction for mothers, as well as breastfeeding rates have the potential to increase following the intervention.

The second RCT included in the literature appraisal was conducted by Maycock, Binns, Dhaliwal, Tohotoa, Hauck, Burns, and Howat (2013) in Perth, Western Australia. This study was given a JHNEBP grade of "A" by the project manager. The purpose of the study was to determine the effect of antenatal education and postpartum support provided to fathers, called the Fathers Infant Feeding Initiative (FIFI), on the anytime breastfeeding rate (Maycock et al., 2013). The study was conducted across eight hospitals with a total of 699 couples participating.

Inclusion criteria were mothers enrolled in the antenatal education sessions, those older than 18 years of age, and fathers were invited to participate. The only requirement for father participation was they had to be available via phone or email for follow-up purposes. Two hundred ninety-four participants were needed to determine an 80% power and a 5% level of significance (Maycock et al., 2013). The demographic questionnaire results showed most participants were born in Australia, and more than 90% employment amongst both women and men (Maycock et al., 2013).

Couples were randomized to control and intervention groups. The control groups received the usual level of care, which was an antenatal education class offered every week for four weeks, care in the hospital, and postnatal care. The intervention group received the usual

care provided along with a two-hour antenatal education session led by a male facilitator and a six-week social support package in the postnatal period. Each postnatal week, the fathers received a supportive material, which is discussed in the review of Tohotoa, Maycock, Hauck, Howat, Burns, and Binns (2010; Table 2.2).

Measures in the study included the Iowa Infant Feeding Attitude Scale (IIFAS) at baseline and six months. The IIFAS had no significant results between mothers and fathers at baseline and six months. The intervention group was 46 percent more likely than the control group to breastfeed at six weeks both before adjusted analyses (81.6% v. 75.2%) and remained significant following adjustment for age, employment of fathers, socioeconomic status (SES), and hospital used (Maycock et al., 2013). The rate of full formula feeding was significantly higher in the control group versus the intervention group ( $p < 0.05$ ; Maycock et al., 2013). There was no significant difference in the exclusive breastfeeding rates at six weeks, nor was there a significant difference in any breastfeeding rate at six months. The major factors affecting breastfeeding were SES and age (higher SES and older age associated with more likelihood to breastfeed). The findings from this study suggest that an antenatal educational session and postpartum support intervention can increase anytime breastfeeding rates. Once again, little evidence is found in favor of longevity for breastfeeding education efforts.

The third and final Level II study was conducted by Raeisi, Shariat, Nayeri, Raji, and Dalili (2013) and was given a “B” by the project manager based on the JHNEBP appraisal tool. The experimental RCT was conducted in Vali-E-Asr Hospital, Tehran, Iran with the purpose of determining the influence of fathers’ participation in constant breastfeeding efforts (Raeisi et al., 2013). A total of 77 fathers, 47 in the intervention group and 30 in the control group, participated in the study.

Inclusion criteria of male participants was a healthy mother without any diseases, no pregnancy complications, and being in the second trimester of pregnancy. One hundred fathers participated in the study. Fathers were randomized to control and intervention groups. The

control group received no training; fathers in the intervention group received training in a course three times from the 30<sup>th</sup> week of pregnancy to birth. The training was provided via a brochure.

To measure outcomes, three questionnaires were provided and a confidence interval of 95% was set (Raeisi et al., 2013). These questionnaires measured demographic data of father and spouse, parents' awareness, and post-partum characteristics of the newborn and breastfeeding methods. Both the second and third questionnaires were completed at one, three, and six months. There were no major differences demographically between the control and intervention groups. Following the participants training, more fathers and mothers in the intervention versus control group had a higher level of awareness ( $p < 0.01$  and  $p < 0.0001$ , respectively; Raeisi et al., 2013). Breastfeeding was six times more likely to occur in the intervention group than the control group and mothers were 11 times more likely to report participation and support from the spouse in the intervention group (Raeisi et al., 2013). The researchers' findings again support the use of an educational intervention for fathers to increase breastfeeding rates. The intervention was also found to increase support provided from fathers to mothers.

**Level III evidence.** The remaining articles appraised for the purpose of evidence are quasi-experimental in design. Bich, Hoa, and Målqvist (2013) conducted a quasi-experimental study in which they evaluated the effect of an antenatal and postpartum educational intervention aimed at fathers on their involvement in exclusive breastfeeding. The project manager gave the study an "A" based on the JHNEBP appraisal tool. The study was located in the Hai Duong province of northern Viet Nam. Groups were allocated to control or intervention groups based on their geographic location: the Chi Linh district was the intervention group and the Thanh Ha district served as the control group. Inclusion criteria of participants were men living with their wives or who had regular communication with wives, and pregnancies must have been between seven and 30 weeks gestation during recruitment. Participants were excluded from the study if the women were not pregnant or suffered a loss of the pregnancy, had serious health problems,

or if the couples were divorced or left the area. The final number of participants was 239 to intervention and 230 to control. Participants in the study were similar in education, family type, SES, employment, and education; however, mothers in the intervention group were more likely to be farmers and were more likely to live in urban areas ( $p < 0.001$ ; Bich et al., 2013).

The control group received the usual level of care provided in the district. The intervention provided to residents in the Chi Linh district consisted of mass media communication, group and individual counseling, and a social public event. The mass media messages targeted fathers and publicized how fathers can offer support to mothers. Educational materials were provided via pamphlets and participants were given mugs and T-shirts. The group counseling sessions lasted 45 minutes and the individual sessions took place with four home visits. Finally, the fathers took part in a public event called the “Fathers’ Contest” where fathers participated to show knowledge of breastfeeding.

Breastfeeding rates were measured at four and six months. At four months, no significant difference was noted in exclusive breastfeeding rates between intervention and control groups. A significant result was found in the last week recall of exclusive breastfeeding in the intervention versus control group ( $p = 0.048$ ) and in exclusive breastfeeding since birth ( $p = 0.006$ ; Bich et al., 2013). At six months, the control group had significantly more exclusive breastfeeding rates than the intervention group in the 24-hour, 1 week, and since-birth recall ( $p < 0.001$ ; Bich et al., 2013). These significant results were then tested for adjustment of age, gender, occupation, birth weight, birth order, and type of delivery. Mothers in the intervention group were 2.36 times more likely than those in the control group to exclusively breastfeed their infants at four months. At six months, mothers were 4.5 times more likely to practice exclusive breastfeeding compared to the control group (Bich et al., 2013). These significant results strengthen the evidence for breastfeeding education for fathers to increase breastfeeding and exclusive breastfeeding rates.

The second quasi-experimental study selected for review was conducted in 2014 by Gözükara and Taşkin to evaluate the impact of training and consultant services provided to parents on breastfeeding. After appraising the article, the project manager gave the study a “B” grade from the JHNEBP tool. The participants consisted of 31 couples assigned to control and intervention groups each with 80% participation needed to ensure adequate power analysis with 95% confidence interval assigned (Gözükara & Taşkin, 2014). The participants ranged in age from 20-34, almost half had attended a university, and 45.2% had a vaginal delivery (Gözükara & Taşkin, 2014). The intervention group received education in the antenatal period, consultancy in the first 48 hours after delivery along with four home visits throughout a six-month period, and telephone consultancy four times throughout the second to fifth months. Parents in the control group were only met in the postnatal period for collection of data.

There was a statistically significant increase in the number of mothers who breastfed exclusively in the first six months of life in the control group versus the intervention group ( $p < 0.001$  for all six months). The control group was significantly more likely to use a nipple and a bottle compared to the intervention group ( $p < 0.05$ ), and the intervention group was significantly more likely to have appropriate breastfeeding frequency and duration ( $p < 0.05$ ; Gözükara & Taşkin, 2014). The findings from this study support the use of an antenatal intervention with postpartum follow-up to increase breastfeeding rates. Again, the authors had a follow-up period of six months to determine longevity of the breastfeeding interventions.

Ozlüses and Çelebioglu (2014) also conducted a quasi-experimental study in Nicosia to determine the effect that a breastfeeding education intervention provided to fathers had on the exclusive breastfeeding rate and the overall paternal-infant attachment. The study was graded “A” based on the JHNEBP appraisal tool. There were three separate groups: 39 participants in a control group with no intervention, 39 in the first intervention group with only mothers receiving education, and 39 participants in the second intervention group of both mothers and fathers receiving breastfeeding education. The intervention groups received 20 minutes of education for

each day they were in the hospital following the delivery of their child in addition to a breastfeeding packet for mothers and fathers.

Outcome measures were gathered at the first, second, fourth, and six-month checkups. Results were considered statistically significant with a 95% confidence interval. In the first, second, fourth, and sixth months the mother-father intervention group showed statistically significant increased rates of exclusive breastfeeding compared to the control and mother-only intervention groups ( $p < 0.001$ ,  $p < 0.001$ ,  $p = 0.001$ ,  $p < 0.001$ , respectively; Ozlüses & Çelebioglu, 2014). Paternal infant attachment was also measured through the paternal infant attachment scale (PIAS). The mother-father group showed significantly higher scores on the PIAS when compared to the other groups ( $p < 0.001$ ; Ozlüses & Çelebioglu, 2014). This study found significantly increased exclusive breastfeeding rates in the intervention group where education was provided to both the mothers and fathers, even compared to another intervention group, which provided the same education to mothers only. The addition of fathers' education appeared to impact the exclusive breastfeeding rates.

Susin and Giugliani (2008) conducted a quasi-experimental study in Brazil and the project manager gave the study an "A" grade after appraisal with the JHNEBP tool. The purpose of the study was to evaluate the effect of paternal inclusion on breastfeeding. Similar to the previous study, there was one control group and two intervention groups. The control group consisted of 201 mothers and fathers. The first intervention group had 192 mothers only and the mother-father intervention group had 193 mothers and fathers. Inclusion and exclusion criteria for the study were set: healthy infant, couples had to live together, birth weight equal to or more than 2500 grams, and in whom breastfeeding had been initiated. The participants in the study were on average older than 20 years of age, mostly white, had less than eight years of school, and were single. The researchers established that 133 couples were needed per group to have sufficient sample size with 80% and 95% confidence interval (Susin & Giugliani, 2008).



The control group received the standard of care. The intervention provided to both intervention groups was a breastfeeding education session held by a pediatrician. This session involved a video, a handout, and a discussion period. All groups also received at home visits for the first, second, fourth, and sixth months or until breastfeeding was stopped. At four months, the mother-father intervention group was exclusively breastfeeding significantly more than the mothers only and control group ( $p = 0.003$ ) and the mother-father intervention group was significantly less likely to stop exclusive breastfeeding at six months compared to the other groups ( $p = 0.02$ ; Susin & Giugliani, 2008). However, the results of the study found that the first intervention group of mothers only significantly decreased the chance of anytime breastfeeding being stopped prior to six months ( $p = 0.006$ ) and was not significant when fathers were provided education (Susin & Giugliani, 2008). The researchers also found that schooling of fathers had an effect on breastfeeding duration, with more education increasing the exclusive breastfeeding. The authors of this study discovered significant results for increasing exclusive breastfeeding rates when involving fathers in the education. However, there is some concern that anytime breastfeeding was decreased when fathers were included in the intervention compared to when mothers only were provided education. The authors credit this to a possible issue with the video and its information.

The final article appraised for the EBP project was an article by Tohotoa et al. (2010). This quasi-experimental study was the initial study to develop the educational intervention that was later retested as an RCT by Maycock et al. (2013; Appendix A). The study was given a “B” grade by the project manager with the JHNEBP appraisal tool. Conducted in Perth, Western Australia at eight local hospitals, the purpose of this study was to increase breastfeeding prevalence up to the first six months of life. This paper described the development of the antenatal education and postpartum support interventions. The authors utilized the Health Belief Model, the Social Cognitive Theory, and the Gender Theory to guide the development of the

project. The authors first began development of the interventions with qualitative interviews with fathers of breastfed babies, mothers, and educators from the hospitals included in the study.

Fathers were then recruited for participation in the study. Inclusion criteria required that fathers understand written English, be over 18 years of age or have consent of parent, and intent to enroll in the program. The total number of participants was 295 males, mostly married with a trade degree and average age of 29 years old.

The program was created and educators trained to deliver the antenatal education session. This session was provided on the third or fourth week of the antenatal education provided by the hospital and was delivered via PowerPoint presentation, a “father’s guide,” and a brochure. Additionally, participants were given time to discuss the information provided. All mothers were given a “mother’s information” booklet. Finally, the intervention group received postpartum follow-up information weekly for six weeks (Table 2.2)

Table 2.2

*Postpartum Interventions*

<u>Week</u>	<u>Intervention</u>
Birth	Telephone call and congratulatory card
Week 1	Nipple cream and information on developmental milestones
Week 2	Breastfeeding and exercise/dietary guidelines
Week 3	Relaxation exercises and tea bags
Week 4	Beer can holder with project logo
Week 5	Brochure and postcard with information on postpartum depression
Week 6	Survey

The researchers found that 99% of participants felt the presentation was important and 90% felt the education topics were appropriate (Tohotoa et al., 2010). The results from the intervention group found that 63% found the PowerPoint helpful, 69% found the new father's guide helpful, 51% found the relaxation brochure and tea bags helpful and 66% found the postpartum depression information helpful (Tohotoa et al., 2010). The results from this study are useful in determining the perceptions of the intervention groups about the education provided. The majority found the information helpful, and it served as a foundation for future studies. Additionally, the study provided the impetus for an RCT, which was conducted in 2013 by these researchers.

**Construct Evidence-Based Practice.** Constructing EBP involved moving from stage one of the ACE Star model to stage two, Evidence Summary. The summary of evidence first required a thorough appraisal. The project manager utilized the JHNEBP Research evidence appraisal tool to appraise each article selected for inclusion in the review of literature. The appraisal tool allowed the project manager to rate evidence as high, good, or poor (Appendix A). Through critical appraisal and evidence summary, the best practice methods have been synthesized, as described below.

**Synthesis of appraised literature.** The synthesis of the appraised literature revealed three components of best practice interventions: attitude, support, and knowledge should be addressed in educational interventions aimed at fathers; the timing of educational interventions can affect breastfeeding outcomes; the types of educational materials provided to fathers are important determinants of breastfeeding outcomes (Abbass-Dick et al., 2014; Bich et al., 2013; Gözükara & Taşkin, 2014; Maycock et al., 2013; Mitchell-Box & Braun, 2013; Ozlüses & Çelebioglu, 2014; Raeisi et al., 2013; Susin & Giugliani, 2008; Tohotoa et al., 2010). The attitude, support, and knowledge of fathers can have a direct effect on breastfeeding rates. The implementation of educational interventions must be appropriate and timely to this group or it can have a negative impact on breastfeeding outcomes (Susin & Giugliani, 2008). If male

partners do not find the information helpful or useful, it could decrease perceptions of their own knowledge and lessen support for breastfeeding, which in turn could result in the mother of a breastfed infant terminating breastfeeding before desired. The areas of importance discovered in the literature appraisal include the timing of the intervention and type of educational materials provided.

**Attitude, support, and knowledge.** Materials addressing attitudes, support, and knowledge about breastfeeding provided to fathers were shown to increase overall breastfeeding rates (Abbass-Dick et al., 2014; Bich et al., 2013; Gözükara & Taşkin, 2014; Maycock et al., 2013; Mitchell-Box & Braun, 2013; Ozluses & Çelebioglu, 2014; Raeisi et al., 2013; Susin & Giugliani, 2008; Tohotoa et al., 2010). The materials provided by Maycock et al. (2013) and Tohotoa et al. (2010) directly addressed support by educating fathers on being a “Breastfeeding Champion.” By creating a positive attitude surrounding breastfeeding, the father had the potential to make breastfeeding a positive experience. Knowledge and support about breastfeeding were provided in all interventions. The support came in various forms but included emotional support for mom by “cheering” her on as well as support by completing various household tasks (Abbass-Dick et al., 2014; Bich et al., 2013; Gözükara, & Taskin, 2014; Maycock et al., 2013; Mitchell-box & Braun, 2013; Ozluses & Çelebioglu, 2014; Raeisi et al., 2013; Susin & Giugliani, 2008; Tohotoa et al., 2010). The support fathers provided to mothers was directed to help ease the burden of outside chores to spend more time with baby. Support was in the form of bringing the baby to mom for her to breastfeed or providing skin to skin contact with the baby. The literature showed that all of these interventions, when aimed at the soon to be father, helped to increase overall breastfeeding rates.

**Timing of intervention.** The educational interventions were implemented at three different times: in the antenatal period, postpartum period before discharge, and postpartum period at home. Several studies combined the antenatal education and postpartum follow-up interventions and had successful outcomes (Bich et al., 2013; Gözükara & Taşkin, 2014;

Maycock et al., 2013; Mitchell-Box & Braun, 2013; Tohotoa et al., 2010). Four of the five studies had significant results indicating the antenatal and postpartum intervention combination worked well (Appendix A; Bich et al., 2013; Gözükara, & Taskin, 2014; Maycock et al., 2013; Tohotoa et al., 2010.) The study that focused on postpartum education prior to hospital discharge with postpartum follow-up also had success in increasing breastfeeding rates but these results were not significant (Abbass-Dick et al., 2014). In fact, recommendations were made in that study to implement the interventions in the antenatal period (Abbass-Dick et al., 2014). Raeisi et al. (2013) conducted their intervention in the antenatal period only and had significant results in knowledge increase ( $p < 0.0001$ ) and in six-month breastfeeding rates ( $p < 0.01$ ). The final two studies focused on interventions in the postpartum period only. Both of these studies had significantly increased rates of breastfeeding exclusivity; however, recommendations were made for future studies to include antenatal education (Ozlüses & Çelebioglu, 2014; Susin & Giugliani, 2008).

Best practice recommendations for the timing of the intervention as synthesized by the literature were for an antenatal education session with postpartum follow-up. This recommendation was made based on the success of the combined intervention studies as well as from the studies' call for antenatal education in future studies. The timing of the educational interventions was very important, but one area that was paramount to this was the method of delivery.

**Type of educational materials.** Throughout the literature appraisal, it was discovered there was no practice standard on the type of materials with which to educate fathers. All nine of the studies appraised held an educational session via face-to-face format (Abbass-Dick et al., 2014; Bich, Hoa, & Målqvist, 2013; Gözükara, & Taskin, 2014; Maycock et al., 2013; Mitchell-Box & Braun, 2013; Ozlüses & Çelebioglu, 2014; Raeisi et al., 2013; Susin & Giugliani, 2008; Tohotoa et al., 2010). In addition to these sessions, aids were provided to the participants. Some of the most common materials provided included education via video, packets, brochures,

workbooks, pamphlets, and open discussion (Abbass-Dick et al., 2014; Maycock et al., 2013; Mitchell-Box & Braun, 2013; Ozlüses & Çelebioglu, 2014; Raeisi et al., 2013; Susin & Giugliani, 2008; Tohotoa et al., 2010). The wide array of materials provided to participants allowed them to view, hear, touch, read, and discuss breastfeeding information. The video provided short-term education and the option of a take home item such as a pamphlet allowed the information to be referenced later. Other studies had information accessible via telephone calls, mass media, and websites (Abbass-Dick et al., 2014; Gözükarar & Taşkin, 2014). These options were valid and touched on the more recent movement to social media for education.

The topics discussed within the educational interventions also varied. While some of the research articles did not mention specific topics covered, others educated on WHO recommendations, benefits to the mother and baby, postpartum depression, engorgement, mastitis, the importance and impact of fathers, ways fathers can help promote breastfeeding, the use of breast pumps, and oils (Maycock et al., 2013; Ozlüses & Çelebioglu, 2014; Susin & Giugliani, 2008; Tohotoa et al., 2010). These topics covered the basics of breastfeeding and highlighted the importance of the father in the journey.

Based on the information collected from the evidence, best practice recommendations for the delivery of educational materials and topics to be covered were made. The type of material provided included a face-to-face education session, video, take-home aid titled “Dad’s Playbook”, and open discussion. Additionally, participants received the instrumental support of a breast milk storage guideline magnet. This could be placed on the refrigerator to give a reference point for storage guidelines of any pumped breastmilk.

**Best practice recommendations.** A complete synthesis of the literature led the project manager to develop an educational program implemented in the practice setting. The best practice recommendations sought to answer the PICOT question “What is the effect of breastfeeding education intervention aimed at first time fathers versus current practice on anytime breastfeeding rates at 6 weeks postpartum?” This program included an antenatal

educational session with postpartum follow-up. The educational materials to be provided included a video on the father's role in breastfeeding and skin-to-skin contact with the father and newborn, a "Dad's Playbook" developed by the project manager, and open discussion. The postpartum follow-up materials included a card at four weeks postpartum with information on mastitis and the final survey at six weeks postpartum. Six weeks was chosen as the follow-up period based on the time allotted to collect data for the EBP project in addition to several studies within the literature utilizing a six-week follow up period (Abbass-Dick et al., 2014; Maycock et al., 2013; Tohotoa et al., 2010). Finally, topics covered in the face-to-face education included benefits of breastfeeding, WHO, AAP, United Nations Children's Fund (UNICEF) recommendations, breastfeeding positions, the role of the father, preventing complications, recognizing when to feed the baby, and storage guidelines for breastmilk.

## CHAPTER 3

### IMPLEMENTATION OF PRACTICE CHANGE

Following the stages of the ACE Star model, the researcher implemented the EBP project into practice. Stage 4 of the ACE Star Model is important for testing the validity of research in the practice setting. Chapter 3 discusses the planning phase of the EBP project and included the participant and setting selection, outcomes measured, the intervention, and protection of human subjects.

#### Method

The intervention was implemented as quasi-experimental with a two group post-test only design. One group was utilized to determine the effect of the intervention and the control group consisted of those individuals who received the usual level of care. Baseline data and demographic information were collected prior to the intervention. Post-intervention data was collected at the six-week post-partum period. The remainder of this section details the implementation for practice change.

**Participants and setting.** The setting utilized for project implementation was located in west central Indiana. Indiana was an appropriate setting for project implementation as the breastfeeding rates for the state are 74.1 percent of infants ever breastfed, 38.6 percent breastfed at 6 months, 21.5 percent breastfed at 12 months, 35.7 percent exclusively breastfed at 6 months, and 18.1 percent exclusively breastfed at 12 months (Centers for Disease Control and Prevention, 2014). Again, the goals of *Healthy People 2020* are included in Table 1.1. The setting of the intervention was a facility in Indiana. Breastfeeding classes were offered to both mothers and fathers but emphasis was provided to mothers compared to information for fathers about their role in supporting the mother. Additionally, the facility was on the journey to become a “Baby-Friendly” facility. The BFHI was created by WHO and UNICEF to designate those hospitals which provide optimal care for mothers and infants to ensure appropriate bonding and



feeding for the newborn (Baby-friendly USA, 2012). The timing of this intervention aligned well with the goal of the hospital to promote appropriate feeding for newborns that received care at this facility.

Inclusion and exclusion criteria were established to ensure any extraneous factors affecting the breastfeeding outcomes would be limited. Inclusion criteria included male partners who were going to become fathers, able to speak and read English, and were 18 years of age or older. Pregnant female participants also had to be 18 years of age or older and able to speak and read English. Participants were excluded from the project if their newborn was born before 36 weeks gestation, the newborn was hospitalized in the neonatal intensive care unit (NICU), or the mother faced serious complications of pregnancy, including eclampsia, postpartum hemorrhage, and any condition in which she became intubated following delivery.

Recruitment of participants took place at the childbirth preparation classes. The childbirth classes were offered in two different formats: one longer class taking place on one Saturday a month from nine in the morning to five in the evening; the second format consisted of five smaller sessions from six thirty until nine at night one night per week. The intervention group was designated as the Saturday group and the control group is the five-session class group. The project manager attended the five session classes and the Saturday classes to recruit participants for the project. The project manager recruited participants for the control group prior to one of the prepared childbirth classes. The project manager left the classes without providing any intervention. The project manager recruited participants for the intervention group again before the prepared childbirth class began on Saturdays and provided the intervention.

**Outcomes.** The primary outcome measured during the project was anytime breastfeeding. Parents were also asked if they had practiced exclusive breastfeeding which was a secondary measure. Other secondary measures included support and paternal-infant attachment. Demographic information was collected to determine characteristics of the sample and included gender, age, highest level of education, annual household income, race, and marital status.

Additionally, informed consent was obtained prior to the collection of any information from male participants and their female partner so the researcher could access medical records to obtain data at six weeks postpartum. The secondary outcome of support was measured utilizing the postpartum partner support scale. The scale has been well established as a strong measurement tool for postpartum support (Abbass-Dick et al., 2013). Paternal infant attachment was measured utilizing the PPAQ created by Condon et al. (2008). Both of these scales assisted the project manager in determining support from partners and attachment, or bond, between the father and the newborn in the postpartum period.

Primary and secondary measures of the project have been stated above. The final goal of this project was to have the educational program implemented into the project site's prepared childbirth program. The implementation of this EBP project into the facility's education depended largely on the results of this project.

**Intervention.** Following Stage 4 of the ACE Star model, the project was implemented into practice to determine if a practice change was warranted. The EBP project intervention was an educational session provided to soon-to-be fathers. The session took place at the facility's education center. While the specific inclusion and exclusion criteria of the project had to be met for final inclusion, no fathers who attended the session were turned away. Baseline data was collected on all individuals; however, analysis of data was only run on those who met inclusion requirements of the project.

As discussed previously, the review of literature and synthesis of evidence led the project manager to make the practice recommendation of providing an educational packet, a video, and open discussion in the antenatal period to fathers. After working closely with the project site facilitator, it was determined the breastfeeding education provided to fathers would be in conjunction with the already existing prepared childbirth classes. The intervention group included those individuals who attended the Saturday sessions from nine until five in the evening on the dates of October 17<sup>th</sup>, November 24<sup>th</sup>, and December 19<sup>th</sup>. The addition of the

educational materials created by the project manager extended the class by approximately 30 minutes. In the postpartum period, each of the participants received a congratulatory card, a card with information on mastitis at four weeks postpartum, and the final survey at six weeks postpartum. To incorporate the social support theory into practice, all of the educational materials had the aim of providing fathers with tools to provide support. The educational packet was called the “Dad’s Playbook.” It contained information on breastfeeding facts, the role of the father, breastfeeding positions, cues to breastfeed, and ways to prevent breastfeeding complications (Appendix F). A video introducing the father’s role in breastfeeding and skin-to-skin contact was provided to participants. Fathers were given the “Dad’s Playbook,” which they took home for both the father and mother to have as a reference. The instructor went over the material and allowed time for open discussion and questions.

Members of the control group were those individuals who received the usual level of care at the five-session prepared childbirth classes. These individuals also had access to usual care at the hospital and the lactation consultant services. They were recruited prior to the start of the initial weekly childbirth session by the project manager. Those who agreed to participate signed the informed consent form and materials were mailed to them at six-weeks postpartum at the same time as individuals in the intervention group. The project manager visited the facility once per week to determine if any of the patient’s in the intervention or control group had delivered and assessed those who had delivered for exclusion criteria. This also provided the project manager with information that was necessary for postpartum follow up.

In the postpartum period, all participants in the control and intervention groups were contacted. The control group was contacted at six weeks postpartum to answer the breastfeeding rates questionnaire, postpartum partner support questionnaire, and the PPAQ. Following the Tohotoa et al. (2010) intervention, the intervention group received a congratulatory card, a postcard at four weeks postpartum with information on mastitis, and received the same six weeks postpartum follow up data questionnaires as the control group.

**Planning.** Again, the ACE Star model was utilized as the guide for practice change. An initial interest by the project manager led to a general search surrounding breastfeeding. The identified gap in breastfeeding rates from the goal set by Health People 2020 (HHS, 2015) and the actual breastfeeding statistics were concerning for the morbidity and mortality of young children in the United States. Substantial research was found encouraging the use of fathers as a support system for mothers in the breastfeeding experience. This information led to the development of the PICOT question: “What is the effect of breastfeeding education intervention aimed at first time fathers versus current practice on anytime breastfeeding rates at 6 weeks postpartum?”

The literature search (Stage 1) was critical in identifying the best available evidence surrounding the topic of breastfeeding education and fathers. This was achieved by creating specific inclusion and exclusion criteria to narrow the search down to the most appropriate evidence. After a thorough database search and collection of the best articles available, the evidence was critically appraised and summarized (Stage 2). This appraisal was done utilizing the JHNEBP critical appraisal tool. All articles were reviewed and given a grade of A, B, or C (The John Hopkins Hospital/The John Hopkins University, 2015).

The evidence summary along with clinical expertise led to the development of a practice recommendation (Stage 3; Melnyk & Fineout-Overholt, 2011; Stevens, 2012). The project manager formed the recommendation of providing breastfeeding education to fathers in the antenatal and postpartum period to increase breastfeeding rates. It was following the translation of evidence into a guideline that the project manager searched for and identified a local population of interest. This population was identified as the soon-to-be fathers within west central Indiana.

Stage 4 of the ACE Star model requires the implementation of the intervention into practice (Melnyk & Fineout-Overholt, 2011; Stevens, 2012). With the target population identified, the project manager developed the details of the intervention. This involved a thorough

investigation of current recommendations from the WHO, AAP, and UNICEF along with knowledge from textbooks to develop the educational materials that were provided to participants (AAP, n.d.; WHO, 2014; Youngkin et al., 2012).

**Data collection.** Before taking part in the intervention, informed consent was obtained from all potential male and female participants attending the prepared childbirth classes for both the control and intervention groups. Demographic information was also collected during the class after informed consent was obtained. After the educational intervention, participants were contacted via mail shortly after delivery, at four weeks, and at six weeks postpartum. It was during this follow-up period that primary and secondary outcome measures were collected. The primary outcome of breastfeeding rates was measured utilizing a questionnaire based on questionnaires from the literature search and the secondary outcomes were measured utilizing the postpartum partner support scale and the PPAQ.

**Reliability and validity of measures.** Cronbach's alpha was conducted on the primary and secondary data collection questionnaires. The primary data tool had a Cronbach's alpha score of  $r = 0.032$ . The secondary outcomes of support and paternal-infant attachment were measured at six weeks postpartum. The postpartum partner support scale was utilized to measure perceived support by mothers of newborns. It is a 25-item instrument measuring perceptions of support: appraisal/emotional, informational, and instrumental (Dennis & Ross, 2006). Each item is given a score from one to four with scores ranging from 25-100 (Abbass-Dick et al., 2013). A higher score indicates higher levels of perceived support. This short questionnaire was utilized to determine if the intervention affected support. The project manager spoke with the creator of the scale on August 24<sup>th</sup> via telephone. After a thorough conversation, the project manager obtained verbal consent to utilize the scale for data collection on support. After analysis, the Cronbach's alpha score for this questionnaire showed very reliability ( $r = .94$ )

The PPAQ was developed in 2007 and is a 19-scale item that measures post-natal attachment, or bonding, between the father and newborn. A higher score indicates a higher

level of attachment. Three major factors emerged in the formation of this instrument: patience and tolerance, pleasure in interaction, and affection and pride (Condon et al., 2008). While evaluating the tool, Condon et al. (2008) found that these three factors shift as the infant ages: pleasure in interaction was the more dominant factor at 12 months versus six; whereas, patience and tolerance was the more dominant factor at six months versus 12. Each of these factors had significant correlations with one another. The authors do highlight that data has the potential to be skewed due to an unwillingness of fathers to admit true emotions of “un-attachment” or they may have a very high sense of “pride” for their child (Condon et al., 2008).

The project manager received permission to alter and utilize the PPAQ by Dr. Condon. Permission was given to change question 15 from “3 months” to “3 weeks” to allow for the question to fit within the timeframe of the project. Reliability for the PPAQ was measured using Cronbach’s alpha. The Postnatal Paternal Attachment Questionnaire had high levels of reliability for this project ( $r = 0.86$ ) These high values helped to demonstrate internal consistency of the instrument and the reliability of the measure.

**Collection.** The demographic data was collected prior to the intervention. Female and male partners who attended the prepared childbirth classes held in October, November, and December were recruited for participation in the intervention group. Those who agreed signed informed consent at the classes and filled out the demographic collection form. The control group was recruited at the five-session childbirth classes. The project manager explained the purpose of the EBP project and those male and female partners who agreed to participate signed informed consent and filled out the demographic collection form. Consent was obtained from the women delivering in both control and intervention groups in order to access hospital records. These records allowed the project manager to know when the child was delivered and if the newborn was hospitalized or if the mother faced any major complications, which would exclude them from inclusion in final participation. Again, these complications included

eclampsia, postpartum hemorrhage, and any instance where the mother was intubated following delivery.

The final data collection occurred at six weeks postpartum. Questionnaires were mailed to both the control and intervention groups. The data collection tools included the breastfeeding rates questionnaire, the postpartum partner support scale, and the PPAQ. The mailed material also had a pre-addressed and pre-stamped envelope to return the materials to the project manager.

**Management and analysis.** Demographic data allowed for descriptive information on participants. The questionnaire created by the project manager about breastfeeding was assessed at six weeks postpartum. This scale measured breastfeeding rates, exclusive breastfeeding, the time breastfeeding was stopped, and two statements regarding males and breastfeeding. It was created from scales already available within the literature.

The data analysis was completed following the six-week postpartum period for all participants. Descriptive statistics were used to assess information obtained from the demographic form. Mann-Whitney *U* test was utilized to data. Mann-Whitney *U* test was chosen due to having only two groups of comparison and a very small participation group. SPSS software version 22.0 was used to measure the primary and secondary outcomes of breastfeeding rates, social support, and paternal-infant attachment.

**Protection of human subjects.** The first initial step to protect human subjects was taken in *Nursing 770: Evidence Based Practice*. This was the certification from the National Institute of Health. This was done to ensure the project manager had a thorough understanding of protection of human subjects when performing research. Approval was obtained from the Institutional Review Board at Valparaiso University via expedited review. Once this was obtained, the information was sent to the project site so that implementation of the project could begin.

Additional precautions that were taken to maintain the safety of participants included confidentiality, anonymity, and data storage safeguards. The informed consent form promised participant confidentiality and anonymity. These were upheld by first ensuring all forms were placed in a sealed and slotted box during collection. This box was placed at every prepared childbirth class. Participants were instructed to place informed consents in these boxes as well as demographic data forms. This was so that no one else had access to the consent or questionnaires. The box was immediately returned to the project manager's residence. All materials were placed in a fireproof safe that was locked. The project manager was the only person with access to the key to the safe.

Anonymity was maintained for participants by first only requiring information on the informed consent and requiring an address to mail the postpartum data tools at six weeks. This information, once collected, was stored on the password-protected computer of the project manager. No other individuals had access to this information. Additionally, any envelopes mailed to participants in the control or intervention group were pre-addressed so that no return address of participants is required. No identifying information was placed on these forms. This ensured that the data remained anonymous.

The transfer of data from the paper to a password-protected computer was completed by the project manager only. In addition, only the project manager knew the password to the computer used for data analysis. Additionally, the computer utilized had a spyware program that was updated regularly to prevent any break in the security of the computer.



## CHAPTER 4

### FINDINGS

The purpose of this EBP project is to establish best practice guidelines for educating fathers about breastfeeding to increase breastfeeding rates in newborns. This was achieved by answering the PICOT question “What is the effect of breastfeeding education intervention aimed at first time fathers versus current practice on anytime breastfeeding rates at 6 weeks postpartum?” Following the implementation of the project into practice, participants in both the control and intervention groups were mailed data collection questionnaires at six weeks postpartum. The primary outcome was anytime breastfeeding rates in the six-week postpartum period. Secondary outcomes included support and paternal-infant attachment. Breastfeeding rates were measured using a scale developed by the project manager from the literature. Support was measured using the postpartum partner support scale and paternal-infant attachment was measured using the PPAQ. Demographic information was collected prior to implementation of the project in the intervention group and once during the five-week weekly breastfeeding class.

Of the 32 participants, there was a 50% ( $n = 16$ ) response rate. The intervention timeframe was from implementation of the project on October 17<sup>th</sup> and was completed by March 15<sup>th</sup>. Of the sixteen couples that participated, three couples were lost to follow up. One couple delivered at a different hospital in the area and was unable to be contacted. Two couples, one in the control group and one in the intervention group, were not mailed data due to the time constraints for data analysis. This meant that of those that received questionnaires, 8 of 13 couples completed follow up. Five of these couples were from the control group and three were from the intervention group. Data was run to better understand the participant characteristics and to understand any confounding factors that may affect results (Table 4.1).

**Table 4.1***Participant Characteristics*

	n (%)	M (SD)	Range
Age	32 (100)	27.8(5.66)	22 years
Highest Grade Completed		4.1(1.4)	
High School Diploma	6(18.8)		
Some College	7(21.9)		
Associates	4 (12.5)		
Undergraduate	9 (28.1)		
Graduate	6 (18.8)		
Gender	16 (50%)	1.5	
Male	16 (50%)		
Female			
Ethnicity		1.1(0.4)	
White	31(96.9)		
Hispanic	1(3.1)		
Income		5.1(1.5)	
25,000-39,999	4(12.5)		
40,000-59,999	8(25.0)		
60,000-79,999	9(28.1)		
80,000-99,999	6(18.8)		
115,000-149,999	4(12.5)		
Marital Status		1.9(0.3)	
Single, never married	4(12.5)		
Married	28(87.5)		

**Outcomes**

Outcomes measured included the primary measure of anytime breastfeeding rates (Figure 4.1). Secondary measures included exclusive breastfeeding, postpartum partner support, and paternal-infant attachment. Frequency of exclusive breastfeeding rates is displayed in Figure 4.2. As can be seen, all respondents reported some breastfeeding, which indicates a 100 percent anytime breastfeeding rate in both the control and intervention group. Support of fathers toward the mothers was measured using the postpartum partner support scale, which measured the female partner's perception of her male partner's support. The PPAQ was filled out by the father and measured the father's perception of attachment. As

mentioned previously, higher scores on both the postpartum partner support scale and the PPAQ indicate higher levels of perceived support and attachment, respectively.

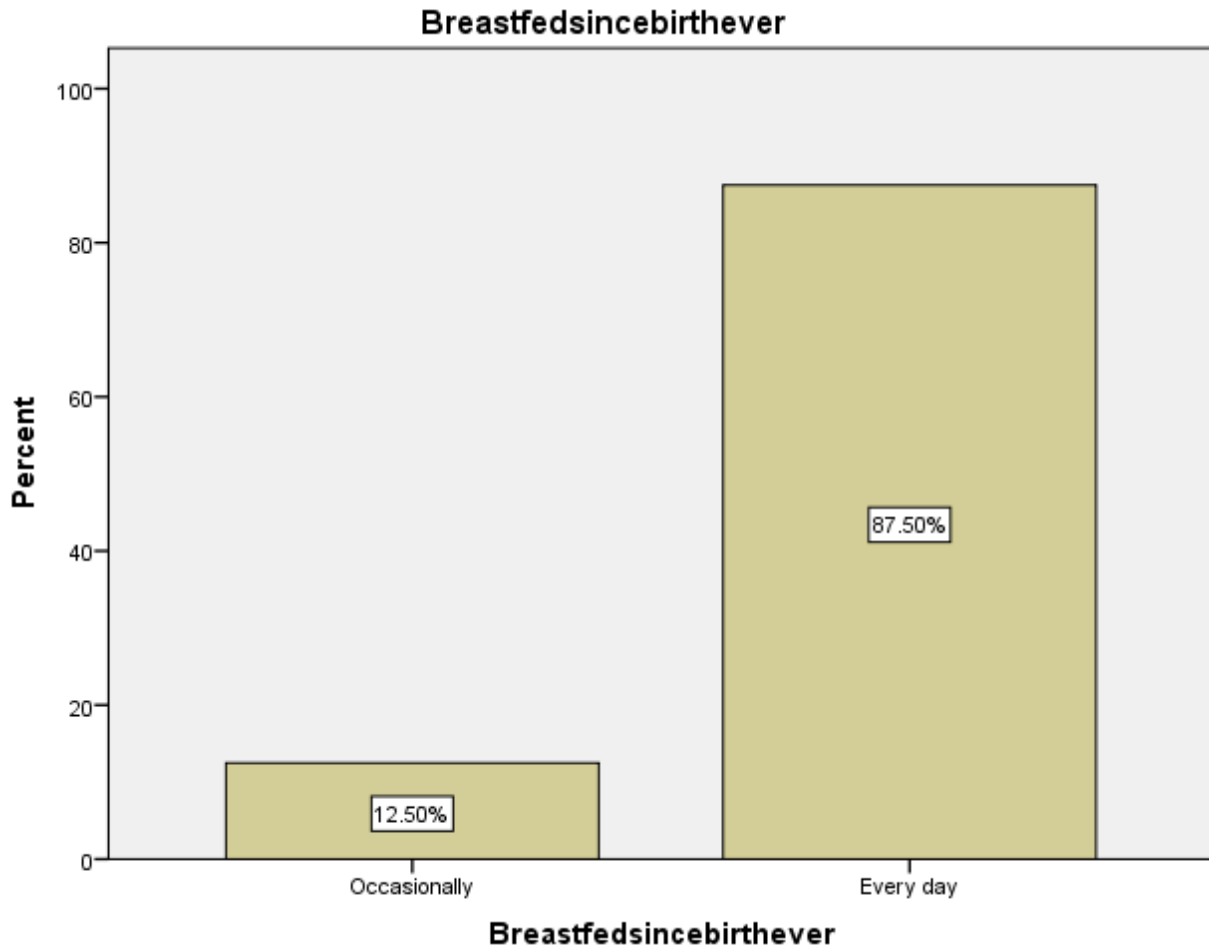


Figure 4.1 *Anytime breastfeeding rates*. This figure illustrates the anytime breastfeeding rates for the comparison and intervention groups.

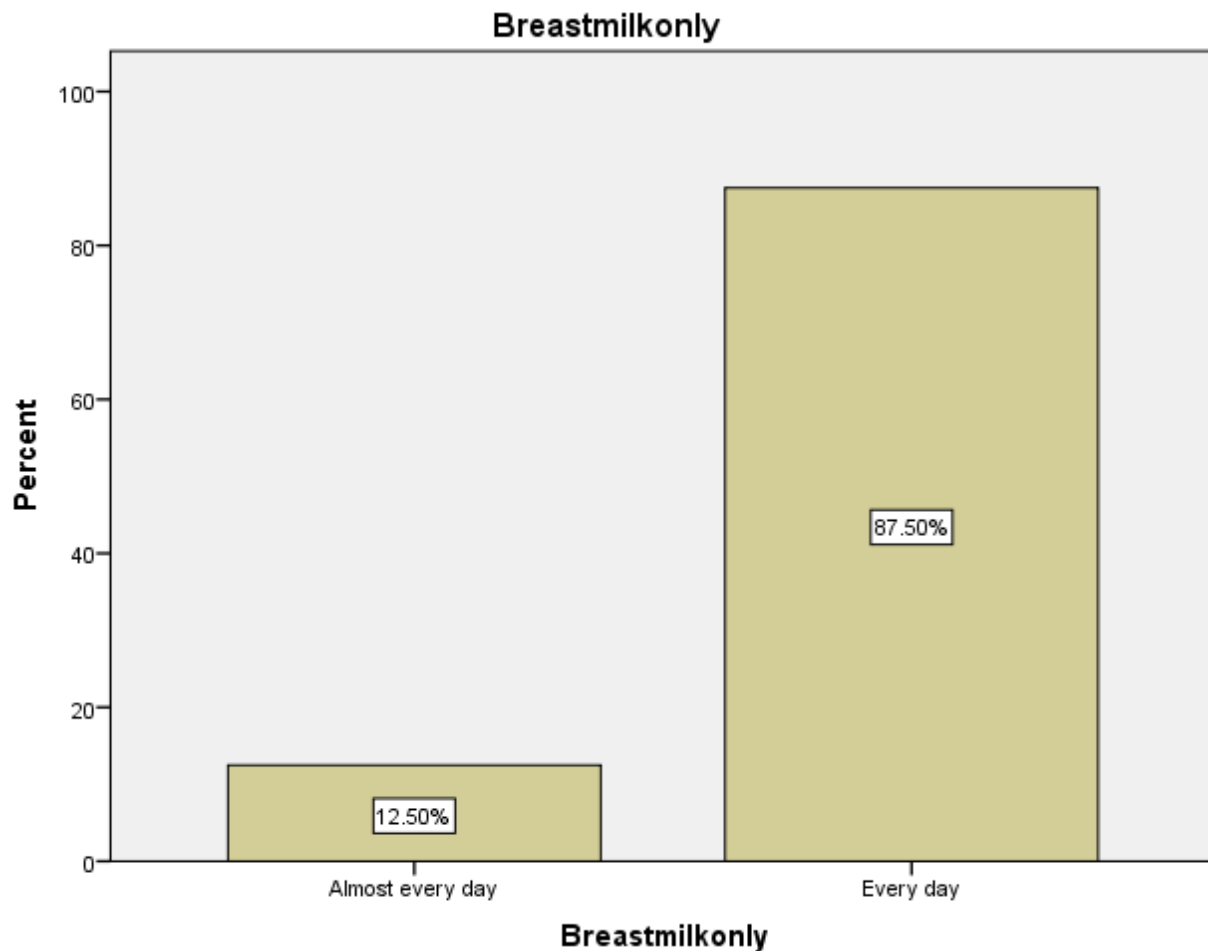


Figure 4.2 *Exclusive breastfeeding rates*. This figure illustrates the combined exclusive breastfeeding rates for the comparison and intervention groups.

**Statistical Testing.** Statistical testing was done utilizing SPSS version 22.0 provided through Valparaiso University. Data was entered into SPSS by the project manager onto a password-protected computer. To access the SPSS data files, two passwords were required to enter into the SPSS system with an additional encryption to enter the data file itself.

**Significance.** Due to a smaller sample size than expected, a Mann-Whitney  $U$  test was used to analyze the three data questionnaires: breastfeeding rates, postpartum partner support scale, and the PPAQ. The Mann-Whitney  $U$  test has four basic assumptions: a) dependent variables have been measured at the ordinal level, b) the independent variable has two independent groups, c) there is independence of observation, and d) the variables are not

normally distributed (Laerd statistics, n.d.). The Mann-Whitney  $U$  test was chosen given the small participation rate for the project. The project meets all four assumptions: all dependent variables are measured with at least an ordinal level, there were two separate groups and no participants were found in each groups (no participants were members of both the comparison and intervention group), and a normal distribution cannot be assumed for the project given the small size. Results from the breastfeeding rates questionnaire, postpartum partner support scale, and PPAQ are displayed in Table 4.2 through 4.4. The results from the studies indicated no significant difference in rates of anytime breastfeeding in control and intervention groups (Table 4.2). Additionally, there were no significant differences between the control and intervention groups in exclusive breastfeeding rates, postpartum partner support, and PPAQ (Table 4.2 through 4.4). Therefore, the null hypothesis is accepted and there was no difference in breastfeeding rates among those fathers who received breastfeeding education and those who received the normal care.

Total mean scores for both the postpartum partner support scale and the PPAQ were calculated. These mean scores were then compared between the comparison and intervention groups. There were no significant differences between the control and intervention groups on either the postpartum partner support scale or the PPAQ. The mean score on the PPAQ for the control group was 71 points, for the intervention group was 69 points, and for both groups was 70.2.

Pearson Correlation coefficients were calculated in regards to all three questionnaires and gender, age, education, income, ethnicity, and marital status (Table 4.5). Strong moderate correlations were noted in comfort with breastfeeding and age ( $r = .651, p = .006$ ), education ( $r = .531, p = .034$ ), and income ( $r = .647, p = .009$ ). This indicates a significant relationship between the comfort a father feels with breastfeeding and his age, the amount of education he has, and his income level. There were also moderate correlations between age and the education ( $r = .510, p = .003$ ), age and income ( $r = .633, p = 0.000$ ), and a weak correlation between the

education and income ( $r = .372$ ,  $p = .040$ ) of the sample. This shows a correlation exists between the age of an individual and their level of education. A second relationship exists between the age of an individual and how much their income is. Finally, a relationship also exists between the education level of an individual and their income.

To test the internal consistency and the reliability of the instruments, Cronbach's alpha was used to measure the reliability for the breastfeeding rates questionnaire, the postpartum partner support scale, and the PPAQ. The reliability coefficient for the breastfeeding rates questionnaire was 0.032, which indicates very poor reliability. Interestingly, if the question regarding breastmilk being stopped was removed, the reliability coefficient would have been 0.42. This could be due to the similarity of this question to the question regarding how long since birth the infant had been breastfed. The reliability coefficient for the postpartum partner support scale was 0.94 and for the PPAQ was 0.86. These reliability coefficients indicate very high levels of reliability for both of these scales.

**Table 4.2***Breastfeeding Questionnaire Test Statistics*

	Breastfedsincebi rthever	Breastmilkonly	Breastmilkstopp ed	Comfortwithbrea stfeeding	Breastfeedingim portanceformale
Mann-Whitney U	24.000	20.000	20.000	28.000	22.000
Wilcoxon W	79.000	41.000	41.000	49.000	77.000
Z	-1.134	-1.890	-1.890	-.258	-1.000
Asymp. Sig. (2-tailed)	.257	.059	.059	.796	.317
Exact Sig. [2*(1-tailed Sig.)]	.562 <sup>b</sup>	.313 <sup>b</sup>	.313 <sup>b</sup>	.875 <sup>b</sup>	.428 <sup>b</sup>

a. Grouping Variable: Group

b. Not corrected for ties.

**Table 4.3**  
*Postpartum Partner Support Scale Test Statistics*

	Respe ctsmo m	Helps Isthere withba by	Encour agesh elp	Good mother	Agrees withcar e	Listens	Provid essug gestio ns	Cares about mom	Increa sescon fidenc e	Helps withch ores	Encour ageswi thstres s	Helpsc ope	Givesf eedba ck	Disagr eesmo re	Helpsf eelposi tive	Helpss olvepr oblem s	Helpsa nswer questi ons	Opport unities	Feelbe tter	Canco nton	Comp anions hip	Criticis es	Helpss eeposi tive	AmSat isfied	
Mann- Whitne y U	6.500	4.500	6.500	7.000	7.000	3.000	2.000	4.500	6.500	5.500	7.000	7.000	6.500	7.000	7.000	7.500	4.500	7.000	7.000	5.500	5.500	3.500	7.000	6.500	
Wilcoxo n W	12.500	19.500	21.500	22.000	22.000	13.000	18.000	17.000	19.500	21.500	11.500	13.000	22.000	12.500	22.000	22.000	13.500	19.500	13.000	22.000	20.500	20.500	18.500	22.000	21.50
Z	-.394	-1.183	-.344	-.176	-.176	-.195	-1.587	-1.893	-1.183	-.344	-.653	-.176	-.163	-.344	-.157	-.176	.000	-.966	-.176	-.163	-.683	-.689	-1.377	-.163	-.344
Asymp. Sig. (2- tailed)	.693	.237	.731	.860	.860	.845	.112	.058	.237	.731	.514	.860	.870	.731	.875	.860	1.000	.334	.860	.870	.495	.491	.168	.870	.731
Exact Sig. [2*(1- tailed Sig.)]	.786 <sup>b</sup>	.393 <sup>b</sup>	.786 <sup>b</sup>	1.000 <sup>b</sup>	1.000 <sup>b</sup>	1.000 <sup>b</sup>	.250 <sup>b</sup>	.143 <sup>b</sup>	.393 <sup>b</sup>	.786 <sup>b</sup>	.571 <sup>b</sup>	1.000 <sup>b</sup>	1.000 <sup>b</sup>	.786 <sup>b</sup>	1.000 <sup>b</sup>	1.000 <sup>b</sup>	1.000 <sup>b</sup>	.393 <sup>b</sup>	1.000 <sup>b</sup>	1.000 <sup>b</sup>	.571 <sup>b</sup>	.571 <sup>b</sup>	.250 <sup>b</sup>	1.000 <sup>b</sup>	.786 <sup>b</sup>

a. Grouping Variable: Group

b. Not corrected for ties.



**Table 4.4**

PPAQ Test Statistics

	Annoy ance	Deliber atelydif ficult	Twowe ekfeeli ngs	Knowb abynee ds	Interac tion	Feeling bored	Feeling proud	Involve dwithc are	Talking aboutb aby	Leavin gbaby	Enjoy mentor satisfa	Thinkin gabout baby	Timewi thbaby	Comin gback	Lookin gatbab y	Myown baby	Things givenu p	Lackoft ime	Impatie nce
Mann- Whitney U	7.500	7.500	7.500	6.500	6.000	4.500	7.500	7.500	6.500	6.500	6.000	6.000	7.000	6.500	5.000	7.500	6.000	6.000	2.500
Wilcoxon W	13.500	13.500	13.500	21.500	21.000	19.500	13.500	13.500	12.500	12.500	21.000	12.000	22.000	12.500	11.000	13.500	21.000	21.000	5.500
Z	.000	.000	.000	-.394	-.464	-1.183	.000	.000	-.394	-.394	-.775	-.516	-.176	-.394	-.816	.000	-.775	-.516	-.333
Asymp. Sig. (2- tailed)	1.000	1.000	1.000	.693	.643	.237	1.000	1.000	.693	.693	.439	.606	.860	.693	.414	1.000	.439	.606	.739
Exact Sig. [2*(1-tailed Sig.)]	1.000 <sup>b</sup>	1.000 <sup>b</sup>	1.000 <sup>b</sup>	.786 <sup>b</sup>	.786 <sup>b</sup>	.393 <sup>b</sup>	1.000 <sup>b</sup>	1.000 <sup>b</sup>	.786 <sup>b</sup>	.786 <sup>b</sup>	.786 <sup>b</sup>	.786 <sup>b</sup>	1.000 <sup>b</sup>	.786 <sup>b</sup>	.571 <sup>b</sup>	1.000 <sup>b</sup>	.786 <sup>b</sup>	.786 <sup>b</sup>	.800 <sup>b</sup>

a. Grouping Variable: Group

b. Not corrected for ties.

**Table 4.5***Significant Pearson Correlations*

	Age	Education	Income
Comfortwithbreastfeeding			
Pearson Correlation	.651**	.531*	.647**
Education			
Pearson Correlation	.510**		
Income			
Pearson Correlation	.633**	.372*	
Timewithbaby			
Pearson Correlation	-.910**	-.777*	-.638

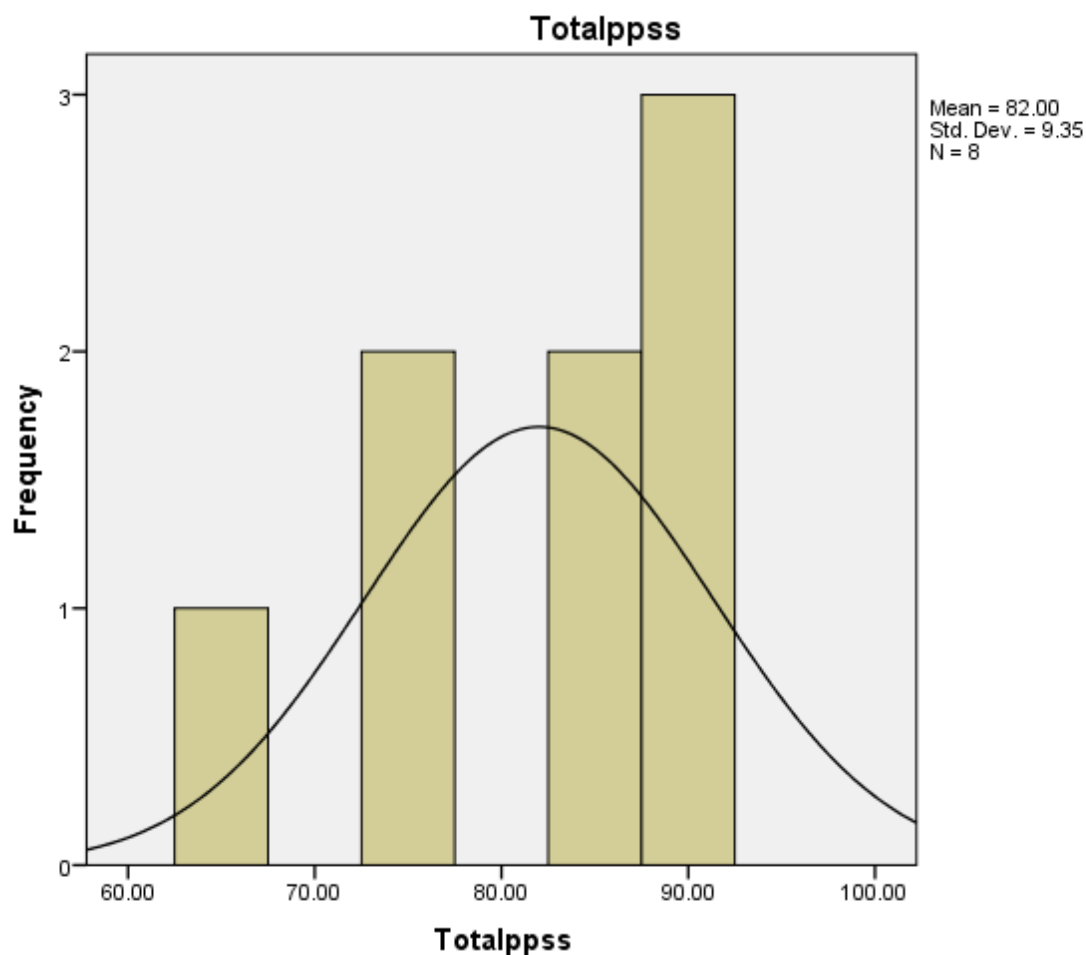


Figure 4.3 *Histogram for Postpartum Partner Support Scale*. This histogram depicts the frequency of scores for the postpartum partner support scale.

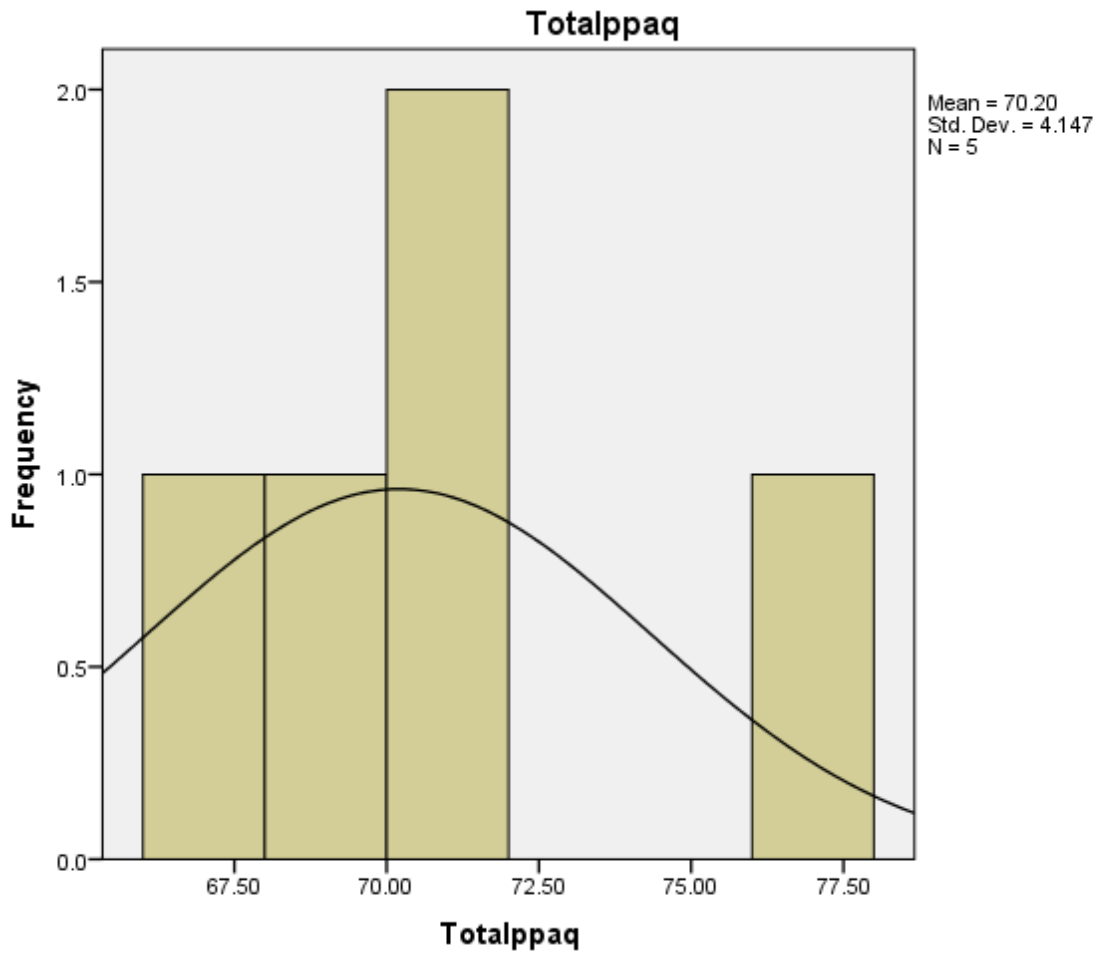


Figure 4.4 Histogram for PPAQ. This figure illustrates the frequency of scores for the PPAQ.

## CHAPTER 5

### DISCUSSION

The purpose of this EBP project was to answer the PICOT question, “What is the effect of breastfeeding education intervention aimed at first time fathers versus current practice on anytime breastfeeding rates at 6 weeks postpartum?” Of the 32 total participants that enrolled, 16 individuals, 8 males and their pregnant female partner, responded. Data was collected and analyses run on the breastfeeding rates questionnaire, postpartum partner support scale, and PPAQ. Results from the data show that there were no significant changes in the primary outcome of anytime breastfeeding rates, nor any significant changes in the secondary outcomes of exclusive breastfeeding, postpartum partner support, or postnatal paternal attachment. However, correlations for several findings were strong. These along with an explanation of findings are discussed below.

#### **Explanation of Findings**

The sample was highly educated with all participants at least having a high school diploma and six (18.1 percent) having a graduate degree. The participants’ ethnicity selection was 96.9 percent white and 3.1 percent Hispanic. This had the potential to influence several factors including cultural customs associated with breastfeeding and male involvement in child care. Individuals may be more or less likely to breastfeed or have male partner support based on customs. This bias cannot be excluded in the overwhelming participation rates in breastfeeding by both groups. Additionally, the lack of variance in ethnicity can skew the generalization of these findings. Income of the individuals ranged from 12.5 percent having an annual income of \$25,000-\$39,999 to 12.5 percent with an annual income of \$115,000-\$149,999. The mode income was \$60,000-\$79,999 (28.1 percent). The income level for all participants, assuming they were at least a family of three, was above the national poverty line of \$20,160 for a three-person family (Morgan, 2016). This fact combined with the moderate

association between income and education ( $r = .4$ ,  $p = 0.04$ ) could have contributed to the frequency of anytime breastfeeding rates at 100 percent, exclusive breastfeeding rates of 87.5 percent, and the “breastmilk not stopped” rate was 87.5 percent amongst the control and intervention groups. The majority of participants reported being married (87.5 percent) versus single, never married (12.5 percent). Being married may result in higher levels of support or perceived support which could also result in an increase in overall feelings of postpartum partner support.

There were no significant differences between the control and intervention groups for anytime breastfeeding rates, exclusive breastfeeding rates, postpartum partner support, or paternal-infant attachment (Tables 4.2 through 4.5). The mean score of the postpartum partner support scale for the control group was 80.2 whereas for the intervention group the mean score was 85. While the intervention group had slightly higher scores, the results were not significant. On the other hand, the PPAQ mean score for the control group was slightly higher than the control group (71 versus 69, respectively). Again, results for these studies were not significant.

However, there are some very promising results from the control and intervention groups overall and there were some very strong associations that warrant further investigation. First, the anytime breastfeeding rates for the group was 100 percent. This is largely above the *Healthy People 2020* goal of 89.1 percent and the facility anytime rate of 80 percent. The exclusive breastfeeding rate of 87.5 percent is also well above the facility’s exclusive breastfeeding rate. Exclusive breastfeeding rates cannot be compared for this group to *Healthy People 2020* or to the facility due to the short timeframe for this project.

The reasons for the high breastfeeding rates in this group can be contributed to several factors. First, the breastfeeding rates overall may be higher due to high levels of education, high income, and age. Comfort with breastfeeding for fathers had a strong correlation to age ( $r = .7$ ,  $p = .006$ ) and income ( $r = .6$ ,  $p = .009$ ) and a moderate correlation to education ( $r = .5$ ,  $p = .034$ ). These correlations may help to explain to overwhelming rates of breastfeeding and

exclusive breastfeeding for both the control and intervention groups. If a male father has a higher level of education and is older in age, they may be more predisposed to knowledge on breastfeeding either from academic information or from life and personal experience.

From the PPAQ, there were two correlations that warrant further discussion. There was a strong negative correlation of “time with baby” and “age.” This means that for any increase in age, there was a negative relationship in the amount of time spent with the baby. While not all factors contributing to this relationship are known, one explanation may be that an individual with increasing age may have more obligations from outside situations that take up time. There was a moderate negative correlational relationship of “time with baby” and education. Again, not all factors are known but one explanation for the relationship to time with baby being lessened by a higher level of education may be that an individual who has a higher level of education may have a more complicated work schedule or more demands with their education.

### **Evaluation of Theoretical Framework**

The background behind the social support and later theorists was that social support can act as a “buffer” to lessen the effects of stress on an individual. Again, the key constructs of the social support theory are emotional support, informational support, instrumental support, and appraisal support. Emotional support is described as having a sense of admiration, respect, liked-ness, or love received by someone; informational support occurs when information is given during a stressful time; instrumental support is providing an actual item; appraisal support is giving a confirmation of his or her actions or words (Schaffer, 2013). Social support exists within small networks of dyads, larger social networks such as a family, and within professional networks like a hospital. Support is given or received between individuals within the network. It can be described as positive support [helpful] or negative support [hindering] (Schaffer, 2013). Again, the way one perceives social support is key to their coping and adaptation to stress.

Many factors affect social support: perception of needed support, timing of support [including life stage], support available, motivation to provide support, and direction of support

(Schaffer, 2013). No one factor is more important than another. Each factor is incorporated into a relationship to form the support system provided from one individual to another.

This theory was successfully applied during the implementation of this project. All four constructs will be incorporated into the project: a) emotional support, b) informational support, c) instrumental support, and d) appraisal support. Professional support was provided from the educator to the participant fathers. The male participants provided support to the breastfeeding mother. This was accomplished by addressing all of the constructs of the social support theory to bolster the father's knowledge and support on breastfeeding.

Emotional support had emphasis on respect, admiration, and love. This was done by raising awareness on difficulties encountered while breastfeeding (Mitchel-Box & Braun, 2012). Education was provided to fathers via a "Dad's Playbook" which addressed emotional support by educating fathers on the need to encourage the breastfeeding mother. The father was a good source of support to encourage the mother to keep going despite challenges. Emotional support was also met through videos directed at fathers. The videos showed how fathers can assist in breastfeeding and in skin to skin contact.

Informational support was addressed in the "Dad's Playbook." Again, the handout increased awareness of complications that could have arisen, cues to breastfeeding, and the basics of breastfeeding. Breastfeeding had the potential to be a highly stressful experience for both male and female partners. From the literature, it has been expressed that fathers felt left out or helpless with the breastfeeding experience (Mitchell-Box & Braun, 2012; Susin & Giugliani, 2008; Tohotoa et al., 2010). It was through the creation of the "Dad's Playbook" that the project manager hoped to aid the father avoid feeling left out or helpless.

The EBP project addressed instrumental support by providing a magnet and a postcard. The magnet gave information on breast milk storage guidelines. It was provided to intervention participants at the same time the "Dad's Playbook" was provided. Participants were also given a card at four weeks postpartum with information on mastitis.

Finally, appraisal support was addressed within the educational classes. Validation was necessary to provide appraisal support to the breastfeeding mother. Fathers were given education on how to give validation during breastfeeding efforts. This was included in the open discussion section of the class. Fathers were given time to ask questions about their concerns with breastfeeding. Validation of their concerns was provided by the educator.

### **Evaluation of EBP Framework**

The ACE Star model guided this EBP project. The ACE Star model has five stages to guide the project manager from initial knowledge discovery to evaluation of the EBP project. The five steps of the ACE Star model were essential in guiding the researcher through the initial knowledge discovery, evidence summary, translation into practice recommendations, implementation into practice, and the final evaluation (Melnyk, & Fineout-Overholt, 2011; Stevens, 2012; Schaffer, Bandau, & Diedrick, 2012). The ACE Star model was versatile which allowed for an ease of application for this project.

Knowledge discovery was essential in the initial phase of the project for gathering new knowledge (Stevens, 2012; Melnyk & Fineout-Overholt, 2011). The use of knowledge discovery allowed for the discovery of information from one literature review, three randomized controlled trials, and five controlled trials without randomization (Table 2.1). This phase built upon increasing the knowledge regarding a gap in practice and uncovering ways to improve breastfeeding outcomes.

Following the guidelines for the second phase of evidence summary, a single, rational statement was provided. The synthesis of evidence also provided a summary with multifaceted purposes: eliminated of bias, eliminated of chance results, increased reproducibility of findings, and increased reliability of results (Stevens, 2012). The third stage of the ACE Star model was the translation of evidence with recommendations to form clinical practice guidelines (CPGs; Stevens, 2012). CPGs were strongly regarded due to the consensus of experts. A CPG can be



applied at a local facility and adapted to fit the needs of clients. This allowed for individualization of CPGs to suit the unique situation of the facility.

The fourth stage of the ACE Star model was the implementation of the evidence into the facility. It was during this phase of the ACE Star model that the project manager hoped to have a positive practice change. Many factors were considered when implementing the project, including the population of interest, facility needs and policies, timing of the intervention, and the overall cost. After the implementation of the project at the facility, evaluation was done to understand the implications of findings and to determine if the facility would be willing to accept the project for integration into its “normal” practices (Melnik & Fineout-Overholt, 2011). This was the final stage of the ACE Star model. This was done through measurement of the breastfeeding rates scale, measurement of the postpartum partner support scale, and measurement of the PPAQ.

### **Strengths and Weakness of the EBP Project**

Strengths of the EBP project included high level of reliability on the postpartum partner support scale ( $r = .94$ ) and a high level of reliability on the PPAQ ( $r = .86$ ). These high levels of reliability indicate that these scales are appropriate for individuals who wish to measure the support from partners and the attachment a father has toward his infant. Also, both the control and intervention groups had high levels of both partner support (80.2 for the control group, 85 for the intervention group) and paternal-infant attachment (71 for the control group, 69 for the intervention group). While no significance between groups was found, it is promising that both the control and intervention had high levels of support and paternal-infant attachment. Additional strengths included a thorough use of formats similar to that found in the literature. This included a multifaceted intervention delivered in both the antenatal and postpartum periods. The information also followed the literature synthesis in that it was delivered in different formats. This also met the social support theory needs of emotional, informational, instrumental, and appraisal supports. Another strength of the project was that the intervention group had a slightly higher

level of postpartum support compared to the intervention group (85 versus 80.2). The result was not significant but was promising that if higher levels of participation were met that the results may trend toward significance.

Weaknesses for the project included a) small sample size, b) no significant results, and c) time constraints. First, the sample size of participants was only 32. With only a 50 percent total participation rate, it was not promising that significant results would be possible. Had the sample size been larger, the statistical changes of significance would have increased. This leads to a second weakness which was the lack of significant results the primary outcome of anytime breastfeeding rates, exclusive breastfeeding rates, postpartum partner support, or paternal infant attachment. While not the intended outcome, it was a very positive fact that all participants in both the control and intervention groups attempted breastfeeding and that only one of the participants in the intervention group reported stopping breastfeeding at two weeks. A third and final weakness for the project was that the time constraints limited those participants to whom postpartum data could be mailed to. With data being mailed at six weeks postpartum, it was not possible to mail out data to two participants. This was a weakness in that it would have increased the overall participation rates and may have led to significant results in the EBP project findings.

### **Implications for the Future**

**Practice.** In terms of practice recommendations, past studies should be referenced. These studies recommend the use of education for fathers to improve breastfeeding outcomes (Abbass-Dick et al., 2014; Bich, Hoa, & Målqvist, 2013; Gözükar, & Taskin, 2014; Maycock et al., 2013; Mitchell-Box & Braun, 2013; Ozlüses & Çelebioglu, 2014; Raeisi et al., 2013; Susin & Giugliani, 2008; Tohotoa et al., 2010). Had there been an increase in the amount of time to collect data and if the total number of participants in the EBP project had been higher, the findings may have been similar and more recommendations for practice could have been made. However, given the overwhelming evidence from other studies, breastfeeding education should

still be provided to male partners in an effort to increase breastfeeding rates. This will also help to increase the level of comfort for the father toward breastfeeding and could help to increase overall levels of support and attachment.

**Theory.** The social support theory is an appropriate theory to continue to incorporate with breastfeeding education efforts for fathers and their breastfeeding partner. The theory has four major constructs that must be addressed a) emotional support, b) informational support, c) instrumental support, and d) appraisal support. Future studies should consider all of these constructs and they must be addressed to ensure adequate support is provided to fathers from the educator and that the father has adequate mechanisms to support his breastfeeding partner. The social support theory can act as a guide throughout the implementation of interventions to understand if needs are being met. If needs are not, the theory has good reference to what aspects of support should be addressed and can assist the healthcare provider in tailoring the theory to meet the needs of his or her participants.

From this EBP project, there were high levels of support in both the control and intervention groups. The social support theory was measured utilizing the postpartum partner support scale (Dennis, 2006). In addition to addressing all constructs of the social support theory, the healthcare provider conducting EBP projects or research must measure outcomes of support using similar scales to better understand the validity of efforts.

**Research.** Future research should continue to address what aspects of education should be provided to fathers to improve breastfeeding rates. As was discussed in Chapter 3, there are no clear guidelines on which topics should be addressed. However, similar topics were mentioned throughout the literature. Future studies and CPGs should address specific topics to be covered. Another aspect of education should be those items addressed during the postpartum period and how often materials should be sent. For example, should materials be mailed to new fathers weekly in an effort to keep them informed? Should a postpartum phone call be made by a lactation consultant automatically to address concerns? These questions

need to be answered so that the healthcare provider can better address the needs of participants and improve breastfeeding rates.

Future projects should also extend beyond the six-week postpartum period. Six weeks is not enough time to gather adequate information on anytime breastfeeding rates, exclusive breastfeeding rates, postpartum support, or paternal-infant attachment. A period of at least six-month follow up would allow for the researcher to compare results of a study or project to the guidelines of *Healthy People 2020* for more accurate data of participants compared to national standards. Another recommendation would be to broaden the participant characteristics. Almost all participants chose “white” as their ethnicity (Table 4.1). To make findings more generalizable, the participant characteristics should be more varied in age, ethnicity, marital status, and educational level. Finally, the researcher should attempt to have higher levels of participation. An adequate sample size will assure that results are valid and will prevent skewed data due to low participation rates.

**Education.** Education is an essential component of providing fathers with the tools needed to increase support and improve breastfeeding rates. It is by creating a mother-father-infant triad instead of the traditional mother-infant dyad that breastfeeding rates will be increased. Future recommendations coincide with those discussed earlier: there needs to be a cohesive list of topics to be covered and types of materials to be provided. Most studies either intentionally or unintentionally follow the social support theory in providing all four types of support. However, the specific ways in which this is provided varies and can be unclear. Researchers, healthcare providers, and CPGs should address this gap in order to improve breastfeeding rates and to meet the goals of *Healthy People 2020* (U.S. Department of HHS, 2015).

## Conclusion

The primary outcome of increased anytime breastfeeding rates was not met during this study. However, the overall anytime breastfeeding rates in both the control and intervention

groups was 100 percent. While not the intended outcome, this is important as the participants in this EBP project were highly apt to breastfeeding, rising above the *Healthy People 2020* goal of 89.1 percent and the facility rates of 80 percent (U.S. Department of HHS, 2015). Secondary outcomes of exclusive breastfeeding rates, postpartum partner support, and paternal-infant attachment were also not met.

Again, this is not surprising given the overall low participation rate; however, there are again promising factors. First, the exclusive breastfeeding rate for EBP project participants was 87.5 percent for the group (100 percent for control and 66.7 percent for the intervention group). Secondly, the scores on both the postpartum partner support scale and the PPAQ were very high for the group overall and between groups. This could have been attributed to several factors; however, the intervention group did have slightly higher levels of support at 85 compared to 80.2 in the control group. This could be attributed to several factors but is promising that if participation rates were higher, significant results might be yielded.

Several correlations were noted. First, comfort with breastfeeding for fathers had a strong correlation to age ( $r = .7, p = .006$ ) and income ( $r = .6, p = .009$ ) and a moderate correlation to education ( $r = .5, p = .034$ ). Additionally, there was a moderate association between income and education ( $r = .4, p = 0.04$ ), income and age ( $r = .6, p = .000$ ), and income and education ( $r = .5, p = .003$ ). These correlations are important indicators of how comfort with breastfeeding can be affected by age, income, and education which all also show a relationship to each other. By better understanding these relationships, interventions can be adjusted to meet the needs of all participants and improve breastfeeding rates over large populations.

Breastfeeding is an essential measure in reducing neonatal morbidity and mortality (WHO, 2014). The literature shows a strong promise for educating fathers to improve overall breastfeeding rates as current efforts are not working. By implementing interventions in the antenatal and postpartum periods, it is hoped that breastfeeding rates will one day meet the goals set forth by *Healthy People 2020* (U.S. Department of HHS, 2015). In addition to this,

measuring postpartum support and postpartum paternal-infant attachment can be good indicators of how the social support theory is being met and what changes should be made to not only address breastfeeding but also support and attachment.

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**BIOGRAPHICAL MATERIAL****Jill M. Frisz**

Miss Frisz graduated in 2013 from Indiana State University with a Bachelor's of Science degree in Nursing. After graduating with her BSN degree, she enrolled in the DNP program at Valparaiso University. During her enrollment in Valparaiso's DNP program, Jill has further developed her clinical skills by working on both the medical-surgical and critical care units at Union Hospital in Clinton, Indiana. Union hospital has provided the opportunity of working with rural populations of West-central Indiana. Family members' experiences with breastfeeding difficulties and fathers' feelings of helplessness inspired the focus of her EBP project. Jill hopes to create awareness and change the focus of breastfeeding to include fathers into a more meaningful and successful breastfeeding experience.

**ACRONYM LIST**

AAP: American Academy of Pediatrics

ACE: Academic Center for Evidence-based [practice]

BFHI: Baby-friendly Hospital Initiative

CINAHL: Cumulative Index to Nursing and Allied Health Literature

CPG: Clinical Practice Guideline

EBP: Evidence Based Project

FIFI: Fathers Infant Feeding Initiative

HHS: Health and Human Services

IIFAS: Iowa Infant Feeding Attitude Scale

JBI: Joanna Briggs Institute

JHNEBP: John Hopkins Nursing Evidence-Based Practice

LLL: Le Leche League International

NICU: Neonatal Intensive Care Unit

PICOT: Patient population, Intervention or Issue of interest, Comparison, Outcome, and Time frame

PIAS: Paternal Infant Attachment Scale

PPAQ: Paternal Postnatal Attachment Questionnaire

RCT: Randomized Control Trial

SES: Socioeconomic status

SPSS: Statistical Package for Social Sciences

UNICEF: United Nations Children's Emergency Fund

WIC: Women, Infant, and Children

WHO: World Health Organization



Appendix A  
Review of Literature

Citation	Purpose	Sample	Design	Measurement	Results	LOE/ JHN EBP Grade
Abbass-Dick, J., Stern, S. B., Nelson, L. E., Watson, W., & Dennis, C. (2014). Coparenting breastfeeding support and exclusive breastfeeding: A randomized controlled trial. <i>Pediatrics</i> , 135(1), 1-9.	“To evaluate the effect of a co-parenting breastfeeding support intervention on exclusive breastfeeding among primiparous mothers and fathers” (p. 2)	Teaching hospital in Toronto, Canada  Inclusion/Exclusion Criteria Must have been a primiparous mother in the first 2 postpartum days who delivered one child and are 18 or older and the newborn was greater than 37 wks gestation at delivery. Had to be living with male partner.  Final Sample: 107 to control; 107 to intervention	RCT	Primary outcome: exclusive breastfeeding (no other food/liquid other than breastmilk) assessed at 6 & 12 wks  Secondary Outcome: breastfeeding duration: infant received any breast milk in the past 24 hours; measured at 6 & 12 wks  Maternal perception of the co-parenting relationship: measured using the Coparenting relationship scale (CRS) (Cronbach’s alpha 0.94) At 6wks postpartum used a smaller version of the CRS to relieve some burden from participants (Cronbach’s 0.73-0.88)  Maternal Perceptions of breastfeeding support: Postpartum partner support scale (Cronbach’s alpha 0.95-0.97)  Paternal breastfeeding self-efficacy: Breastfeeding Self-Efficacy Scale-Short Form (Cronbach’s alpha for mothers 0.90 and for fathers 0.91-0.92)  Paternal Infant Feeding Attitude: Iowa Infant Feeding Attitude Scale (Cronbach’s alpha 0.55-0.72)  Intervention Use: Likert Scale Survey on a 4 point scale  Maternal Breastfeeding Support: Mother’s asked to identify individuals who supported breastfeeding and frequency with which support was provided (both professional and personal) 5 point Likert Scale	More mothers were practicing any breastfeeding at 6 wks v. control (not statistically significant P = 0.06)  More mothers were practicing exclusive breastfeeding in intervention v. control at 6 wks(not significant P = 0.09)  Statistically significantly more mothers were breastfeeding in intervention v. control group (P = 0.02)  More mothers were exclusively breastfeeding at 12 wks in intervention v. control group (not statistically significant P = 0.27)  No statistically significant measurements for maternal perception of coparenting relationship, maternal perception of support, paternal breastfeeding self-efficacy, or paternal infant feeding attitude at 6 & 12 wks  Over time, statistically significant increase over 6 wk period in paternal breastfeeding self-efficacy in intervention v. control (P = 0.03)  Statistically significant results in intervention v. control group for mom’s who received support from partners in 1 <sup>st</sup> 6 wks postpartum (P = 0.02)  Significant results for mothers in intervention v. control group who reported overall satisfaction partner’s involvement (P = 0.04) and with the information they received (P < 0.001)	LOE: II  JHNEBP Grade: A

Citation	Purpose	Sample	Design	Measurement	Results	LOE/ JHN EBP Grade
Bich, T., Hoa, D., & Målqvist, M. (2013). Fathers as supporters for improved exclusive breastfeeding in Viet Nam. <i>Maternal &amp; Child Health Journal</i> , 18(6), 1444-1453. doi:10.1007/s10995-013-1384-9	“To evaluate a community-based educational intervention program in Viet Nam, targeting fathers at antenatal and postnatal periods in order to stimulate their involvement in supporting exclusive breastfeeding practices” (p. 1445)	Setting: Chi Lihn and Thanh Ha Districts of Viet Nam  Inclusion/Exclusion Criteria: Pregnancy 7-30 weeks gestation, must live with wives, excluded if the lost the pregnancy, had serious complications, divorced or moved out of area  Final sample: 239 males and their wives from the Chi Lihn District; 230 males and their wives from the Thanh Ha district	Quasi-Experimental	Sociodemographic data of paternal age, education, occupation, household size, rank, and SES, and location; infant gender, birth weight, delivery, birth order  Measured breastfeeding using a questionnaire formulated from previous studies. Measured exclusive breastfeeding practices at 24-hour, last week, and since-birth recalls at 4 and 6 months of age.	Breastfeeding practices: almost all participants breastfed child and no significant difference observed in “currently” breastfed children.  4 month measures: - 24-hour recall: no significant difference in exclusive breastfeeding between control and intervention groups (P = 0.143) - Last week: statistically significant more mothers in intervention v. control group practicing exclusive breastfeeding (P = 0.048); intervention mothers 2 times more likely to exclusively breastfeed - Since birth: statistically significant more mothers in intervention v. control group exclusively breastfeeding (P = 0.006); intervention mothers 2.36 times more likely to exclusively breastfeed  6 month measures: - 24 hour recall: mothers in the intervention group 4.5 times more likely to practice exclusive breastfeeding than mothers in the control group - Last week: mothers in the intervention group 5.8 times more likely to practice exclusive breastfeeding than mothers in the control group - Since birth: mothers in the intervention group 6.3 times more likely to practice exclusive breastfeeding than mothers in the control group	LOE: III  JHNEBP Grade: A

Citation	Purpose	Sample	Design	Measurement	Results	LOE/ JHN EBP Grade
Gözükara, F. Taskin, L. (2014). Impact of breastfeeding training and consultancy services provided to parents on the breastfeeding behavior in Turkey. <i>International Journal of Caring Sciences</i> , 7(2), 497-507.	“To examine the impact of training and consultancy services given to parents together on the breastfeeding behavior” (p. 497)	Setting: Dr. Zekai Tahir Burak Woman Helath and Research Hospital in Turkey  Inclusion/Exclusion Criteria:  Final sample 62 couples: 31 assigned to control and 31 assigned to intervention	Quasi-Experimental	Demographic information was collected including age, education, employment, SES, living arrangements of the participants and gender of child.  Questionnaires collected monthly measuring exclusive breastfeeding practices.  Measurement of breastfeeding frequency, duration, breastfeeding complications, use of nipple, and use of bottle collected within first 48 hours postpartum and at six months.	Exclusive breastfeeding practices (in age of infant) - 1 month through 6 <sup>th</sup> month : Intervention group significantly more likely to breastfeed exclusively v. control group (P = 0.001)  Breastfeeding characteristics - Breastfeeding frequency: intervention group statistically significantly more correct breastfeeding frequency practices v. control group (P = 0.017) - Breastfeeding Duration: intervention group statistically significantly more correct breastfeeding duration practices v. control group (P = 0.019) - Use of nipple: intervention group statistically significantly less use of nipple practices v. control group (P = 0.014) - Use of bottle: intervention group statistically significantly less use of bottle v. control group (P = 0.001) - Experiencing breastfeeding complications: no significance observed in intervention v. control group  Sociodemographic Characteristics: - More health controls, older age and higher income significantly increased probability of continued exclusive breastfeeding (P < 0.05) - Being in the control group 6.88 times more likely to not practice exclusive breastfeeding in first 6 months compared to intervention group	LOE: III  JHNEBP Grade: B



Citation	Purpose	Sample	Design	Measurement	Results	LOE/ JHN EBP Grade
<p>Maycock, B., Binns, C. W., Dhaliwal, S., Tohotoa, J., Hauck, Y., Burns, S., &amp; Howat, P. (2013). Education and support for fathers improves breastfeeding rates: A randomized controlled trial. <i>Journal of Human Lactation</i>, 29(4), 484-490.</p>	<p>“To investigate the effects of an antenatal education package and postnatal support targeted to fathers on the initiation and duration of breastfeeding” (p. 485)</p>	<p>699 couples randomized to control or intervention groups; no blinding used Recruited from May 2008-June 2009 at 8 public Maternity hospitals in Western Perth, Australia Had to be 18 years or older, fathers had to intend to participate in raising the child and had to be able to be contacted by phone/email and live in Western Australia</p>	<p>RCT</p>	<p>Questionnaire completed after antenatal education classes, 6wks &amp; 6 months postpartum</p> <p>Follow up questionnaires for fathers were completed via telephone or email</p> <p>Scales used: Iowa Feeding Attitude Scale measured at baseline and 6 months Breastfeeding, full breastfeeding, and full formula feeding measured at 6 wks</p>	<p>Iowa infant feeding scales: no significant differences from intervention v. control groups (57.5 v. 56.8 at baseline and 57.1 v. 57.5 at 6 months, respectively for fathers; 59.3 v. 59.3 at baseline and 55.9 v. 54.6 at 6 months, respectively for mothers)</p> <p>Breastfeeding favorable attitudes increased in mothers in the intervention v. control group (43%-35%)</p> <p>Infant feeding: prelacteal feeds were 25% in both intervention &amp; control groups</p> <p>Any breastfeeding rates: Significantly higher in intervention v. control group (81.6% v. 75.2%) Intervention 1.46 times more likely to breastfeeding in unadjusted analysis and in adjusted analysis</p> <p>Infants of older fathers were more likely to have any breastfeeding at 6 wks compared to younger fathers (P &lt; 0.01)</p> <p>Rate of full formula feeding was significantly higher in the control v. intervention group at 6 wks (P &lt; 0.05)</p> <p>No significant differences between breastfeeding rates in control v. intervention at 6 months</p>	<p>LOE: II JHNEBP Grade: A</p>

Citation	Purpose	Sample	Design	Measurement	Results	LOE/ JHN EBP Grade
<p>Mitchell-Box, K. M., &amp; Braun, K. L. (2013). Impact of male-partner-focused interventions on breastfeeding initiation, exclusivity, and continuation. <i>Journal of Human Lactation</i>, 29(4), 473-479. doi:10.1177/0890334413491833</p>	<p>To “examine the impact of male-partner-focused breastfeeding interventions on breastfeeding initiation, exclusivity, and continuation” (p. 473)</p>	<p>2 RCTs, 2 quasi-experimental designs Included 68 first time expectant mothers &amp; partners, 27 control and intervention couples, 280 fathers of infants already born between October and January (randomized based on birth date), and 196 couples already breastfeeding</p>	<p>Integrative Review</p>	<p>1<sup>st</sup> RCT: (Sciacca et al.) Maternal report of exclusive breastfeeding or formula feeding at discharge, 2, 6, and 12 wks postpartum (10/11)</p> <p>2<sup>nd</sup> RCT: (Wolfberg et al.) Maternal report of anytime breastfeeding at 2, 4, and 8 wk postpartum (10/11)</p> <p>1<sup>st</sup> Quasi-experimental: (Pisacane et al.) Maternal report of exclusive or anytime breastfeeding at discharge, 6, and 12 months postpartum (9/11)</p> <p>2<sup>nd</sup> Quasi-experimental: (Susin et al.) Maternal report of exclusive or partial breastfeeding at 1, 2, 4, and 6 months postpartum (9/11)</p> <p>Measured on CASP Scale (score indicated in parentheses)</p>	<p>Breastfeeding Initiation:</p> <ul style="list-style-type: none"> <li>- Sciacca &amp; colleagues found 100% of mothers initiated breastfeeding in intervention v. control (83%) (P = 0.03)</li> <li>- Wolfberg &amp; colleagues found initiation was higher in intervention v. control group (P = 0.01)</li> <li>- Pisacane &amp; Colleagues found no difference in intervention v. control breastfeeding initiation</li> </ul> <p>Breastfeeding Continuation:</p> <ul style="list-style-type: none"> <li>- Sciacca &amp; colleagues had no difference in continuation of breastfeeding rates for intervention v. control</li> <li>- Susin &amp; colleagues rates of any breastfeeding rates were significantly higher for intervention v. control (P = 0.0006)</li> <li>- Wolfberg &amp; colleagues found no difference in breastfeeding continuation after 2,4, and 8 wks in control v. intervention groups</li> </ul> <p>Breastfeeding Exclusivity:</p> <ul style="list-style-type: none"> <li>- Sciacca &amp; colleagues found significantly more couples were exclusively breastfeeding at 2, 6, and 12 wks and exclusively fewer were formula feeding at 2, 6, and 12 weeks in the intervention v. control group</li> <li>- Susin &amp; colleagues found intervention couples had significantly higher exclusive breastfeeding rates v. control (P = 0.003)</li> <li>-Pisacane &amp; colleagues found the intervention couples had significantly higher exclusive breastfeeding rates than controls at 6 months (25% v. 15%)</li> </ul>	<p>LOE: I JHNEBP Grade: B</p>

Citation	Purpose	Sample	Design	Measurement	Results	LOE/ JHN EBP Grade
Özlüses, E., & Çelebioglu, A. (2014). Educating fathers to improve breastfeeding rates and paternal infant attachment. <i>Indiana Pediatrics, 51</i> , 654-657.	“To determine the effect of breastfeeding education provided to fathers on breastfeeding rates and paternal-infant attachment” (p. 654)	117 Turkish families of healthy newborns who could start breastfeeding early were assigned to 3 different groups: 39 to control 39 to only mothers with EBF education 39 to mothers and fathers with EBF education	Quasi-experimental	<p>Primary outcome: The rate of exclusive breastfeeding (EBF)</p> <ul style="list-style-type: none"> <li>- Measured as the number of infants who were breastfed only from day of birth until 6 months</li> </ul> <p>Secondary outcome: paternal-infant attachment</p> <ul style="list-style-type: none"> <li>- Measured using the Paternal Infant attachment scale with 19 questions; higher score indicates stronger attachment</li> </ul>	<p>Exclusive breastfeeding practices:</p> <ul style="list-style-type: none"> <li>- Week 1: no significance</li> <li>- Week 2: no significance</li> <li>- 1<sup>st</sup> month: statistically significant increase in exclusive breastfeeding in intervention groups v. control (P &lt; 0.001)</li> <li>- 2<sup>nd</sup> month: statistically significant increase in exclusive breastfeeding in intervention groups v. control (P &lt; 0.001)</li> <li>- 4<sup>th</sup> month: statistically significant increase in exclusive breastfeeding in intervention groups v. control (P = 0.001)</li> <li>- 6<sup>th</sup> month: statistically significant increase in exclusive breastfeeding in intervention groups v. control (P &lt; 0.001)</li> </ul> <p>Paternal Infant Attachment Scale:</p> <ul style="list-style-type: none"> <li>- Intervention group where mothers and fathers received education had significantly higher scores on the PIAS (P &lt; 0.001)</li> </ul>	<p>LOE: III</p> <p>JHNEBP Grade: A</p>

Citation	Purpose	Sample	Design	Measurement	Results	LOE/ JHN EBP Grade
Raeisi, K., Shariat, M., Nayeri, F., Raji, F., & Dalili, H. (2013). A single center study of the effects of trained fathers' participation in constant breastfeeding. <i>Acta Medica Iranica</i> , 52(9), 694-696.	"To evaluate the influence of fathers' participation in constant breastfeeding in Vali-E-Asr Hospital, Tehran, Iran" (p. 695).	Setting: Vali-E-Asr Hospital  Final sample: 50 fathers randomized to control group and 50 fathers to intervention group	RCT	Three separate questionnaires: <ul style="list-style-type: none"> <li>- 1<sup>st</sup>: demographic information and background of spouses</li> <li>- 2<sup>nd</sup>: parents' awareness with 20 multiple choice questions on a Likert scale</li> <li>- 3<sup>rd</sup>: post-partum characteristics (newborn's weight and method of breastfeeding)</li> </ul> 2 <sup>nd</sup> and 3 <sup>rd</sup> questionnaire collected at one, three, and six month follow-up	Characteristics of participants and spouses: <ul style="list-style-type: none"> <li>- Significantly more mothers in the control group knew about thawing frozen milk than intervention group</li> </ul> Parents' awareness: <ul style="list-style-type: none"> <li>- Mothers' awareness significantly increased in intervention group v. control group after training (P &lt; 0.0001)</li> </ul> Postpartum feeding: <ul style="list-style-type: none"> <li>- Statistically significant more mothers in the intervention group v. control group continued to breastfeed until 6 months (P &lt; 0.01)</li> <li>- Intervention group was 6 times more likely to breastfeed following education of fathers compared to no education in control group.</li> <li>- Mothers reported spousal view, support, participation, and encouragement was 11 times more in the intervention group than the control group</li> </ul>	LOE: II  JHNEBP Grade: B

Citation	Purpose	Sample	Design	Measurement	Results	LOE/ JHN EBP Grade
Susin, L., & Giugliani, E. (2008). Inclusion of fathers in an intervention to promote breastfeeding: Impact on breastfeeding rates. <i>Journal Of Human Lactation</i> , 24(4), 386-392.	“To assess the impact of paternal inclusion in an intervention to promote breastfeeding in Brazil” (p. 386).	Setting: Hospital de Clínicas de Porto Alegre, Brazil  Inclusion/Exc lusion Criteria: couples lived together, healthy infant weighing 2500 g, initiated breastfeeding  Final sample: 201 families in the control group, 192 in the mothers-only intervention, 193 in mothers-fathers intervention	Quasi- Experi mental	Breastfeeding and exclusive breastfeeding practices collected at the 1, 2, 4, and 6 month follow-ups or until breastfeeding was interrupted  Demographic variables: SES, marital status, age, education, race, prenatal care, delivery type, gender of infant	Breastfeeding practices: - 6 <sup>th</sup> month: 46.6% (control group) v. 60.3% (mothers-intervention group) v. 50% (mothers-fathers intervention group) (P = 0.006); intervention with mothers only significantly decreased risk of breastfeeding cessation in first 6 months  Exclusive breastfeeding practices: - 1 <sup>st</sup> month: - 2 <sup>nd</sup> month: - 4 <sup>th</sup> month: 5.7% (control group) v. 11.1% (mothers-intervention group) v. 16.5% (mothers-fathers intervention group) (P = 0.003) - 6 <sup>th</sup> month: fathers significantly decreased risk of discontinuing breastfeeding before 6 months  ta characteristics:  significantly more white parents in the control groups v. other groups (P < 0.05)  mother participation lower in prenatal classes in control v. intervention group ((P < 0.05)	LOE: III  JHNEBP Grade: A

Citation	Purpose	Sample	Design	Measurement	Results	LOE/ JHN EBP Grade
Tohotoa, J., Maycock, B., Hauck, Y., Howat, P., Burns, S., & Binns, C. (2010). Supporting mothers to breastfeed: the development and process evaluation of a father inclusive perinatal education support program in Perth, Western Australia. <i>Health Promotion International</i> , 26(3), 351-361. doi:10.1093/heapro/daq077	To “describe the development and process evaluation of a perinatal education and support program for fathers to support their partners to breastfeed.” (p. 352)	- Recruitment of facilitator: must have had a breastfed baby, have knowledge of adult learning, and believe in father’s role in early parenting - 5 total facilitators - Fathers who could speak English and were above 18 years old were included in the study - 342 in antenatal classes and 295 in follow up intervention	Quasi - experimental	Educational program with antenatal education and postnatal education/support - Antenatal education: post-survey immediately after intervention with Likert Scale - 6 week follow up with Likert Scale measurement of usefulness of interventions	- Following antenatal education: 96% felt it helped with expectations, 94% felt it promoted father role, 90% felt it increased awareness of breastfeeding importance, 93% felt it identified facilitators to breastfeeding, 92% felt it identified lifestyle changes, 94% felt it provided resources, 99% felt the peer educator was helpful, 95% felt they had open dialogue, and 99% felt it was relevant. - 6 week questionnaire: 63% found the antenatal powerpoint helpful, 69% found the new fathers guide helpful, 45% found the dietary guidelines helpful, 51% found the relaxation guide helpful, 66% found the postnatal depression handout helpful	LOE: III  JHNEBP Grade: B

## Appendix B

## Database Search Results

Database	Search	Limiters	Initial Search Results	Results with Limiters	Number of Articles Reviewed	Number of Articles Selected	Duplicate Articles
<b>CINAHL</b>	breastfeed* OR breast-feed* OR "breast feed" AND educat* OR interven* OR promot* OR counsel* AND father* OR dad OR "male partner" OR "significant other"	<ul style="list-style-type: none"> <li>• 2010-2015</li> <li>• English Language</li> <li>• Scholarly (Peer-Reviewed) Journals</li> </ul>	173	52	14	5	
<b>PsycINFO</b>	breastfeed* OR breast-feed* OR "breast feed" AND educat* OR interven* OR promot* OR counsel* AND father* OR dad OR "male partner" OR "significant other"	<ul style="list-style-type: none"> <li>• 2010-2015</li> <li>• English Language</li> <li>• Scholarly (Peer-Reviewed) Journals</li> </ul>	90	35	1	0	12
<b>Healthsource: Nursing/Academic Edition</b>	breastfeed* OR breast-feed* OR "breast feed" AND educat* OR interven* OR promot* OR counsel* AND father* OR dad OR "male partner" OR "significant other"	<ul style="list-style-type: none"> <li>• 2010-2015</li> <li>• Scholarly (Peer-Reviewed) Journals</li> </ul>	70	34	1	0	22
<b>Medline</b>	breastfeed* OR breast-feed* OR "breast feed" AND educat* OR interven* OR promot* OR counsel* AND father* OR dad OR "male partner" OR "significant other"	<ul style="list-style-type: none"> <li>• 2010-2015</li> <li>• English Language</li> </ul>	426	136	4	2	53
<b>JBI</b>	breastfeed* OR breast-feed* OR "breast feed" AND educat* OR interven* OR promot* OR counsel* AND father* OR dad OR "male partner" OR "significant other"	None	0	0	0	0	0
<b>Cochrane Database</b>	breastfeed* OR breast-feed* OR "breast feed" AND educat* OR interven* OR promot* OR counsel* AND father* OR dad OR "male partner" OR "significant other"	<ul style="list-style-type: none"> <li>• 2010-2015</li> <li>• English Language</li> </ul>	21	16	0	0	0
<b>ProQuest</b>	breastfeed* OR breast-feed* OR "breast feed" AND educat* OR interven* OR promot* OR counsel* AND father* OR dad OR "male partner" OR "significant other"	<ul style="list-style-type: none"> <li>• 2010-2015</li> <li>• English Language</li> <li>• Scholarly (Peer-Reviewed) Journals</li> <li>• Article</li> <li>• *In abstract (1<sup>st</sup> and 3<sup>rd</sup> search lines)</li> </ul>	4994	37	1	1	20
<b>Citation Chasing</b>			1	1	1	1	N/A

## Appendix C

## IRB Approval and Addendum Forms



Valparaiso  
University

phone: 219.464.5798  
fax: 219.464.5511  
[www.valpoirb.edu](http://www.valpoirb.edu)

**Institutional Review Board**  
212 Arts & Sciences Building  
1400 Chapel Drive  
Valparaiso, Indiana 46383-4520

To: Jill Marie Frisz

From: Rasha Abed  
Associate Director of Sponsored Research

RE: Breastfeeding Education for Fathers: An Intervention to Increase Breastfeeding Rates. 16-014

Date: September 28, 2015

The IRB has approved the above study on September 28, 2015. The project was reviewed in accordance with all research statues and regulations pursuant to Federal regulations, 45 CFR 46.101(b).

The researcher has approval of this project until one year from the identified date.

If additional protocol changes are needed, approval must be sought from the IRB prior to implementing those changes. Please submit a new expedited request to the IRB for consideration.

When the project is completed, notify the IRB. If the research protocol needs to extend beyond one year, written approval must be sought from the IRB.

Good luck with your work. Please retain a copy of this letter for your records





Valparaiso  
University

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**Institutional Review Board**  
212 Arts & Sciences Building  
1400 Chapel Drive  
Valparaiso, Indiana 46383-4520

To: Jill Marie Frisz

From: Rasha Abed  
Associate Director of Sponsored Research

RE: Breastfeeding Education for Fathers: An Intervention to Increase Breastfeeding Rates (#16-014)

Date: December 11, 2015

The IRB has approved the above changes on December 9, 2015. The project was reviewed in accordance with all research statues and regulations pursuant to Federal regulations, 45 CFR 46.101(b).

The researcher has approval of this project until one year from the identified date.

If additional protocol changes are needed, approval must be sought from the IRB prior to implementing those changes. Please submit a new expedited request to the IRB for consideration.

When the project is completed, notify the IRB. If the research protocol needs to extend beyond one year, written approval must be sought from the IRB.

Good luck with your work. Please retain a copy of this letter for your records

## Appendix D

## Consent Forms

Consent Form  
Intervention Group

**Study Title:** Breastfeeding Education for Fathers: An Intervention to Increase Breastfeeding Rates

**EBP Project Manager:** Jill M. Frisz, RN, BSN, DNP student

**Purpose:** I, \_\_\_\_\_, understand that I am being asked to take part in an educational intervention project which measures the effect of breastfeeding classes for fathers on breastfeeding rates.

**Procedure:** The EBP project manager/DNP student will provide the following to participants: one face-to-face educational session at the beginning of the project to introduce participants to breastfeeding education and paper surveys to collect demographic data from both male and female participants. The educational session will include a video, a “Dad’s Playbook”, and open discussion for any questions. The medical records will be accessed for the sole purpose of looking at the date of delivery and the health information following delivery. Data collection tools will be mailed to the participant at six weeks postpartum for evaluating outcomes. The intervention and data collection will take place over a period of about 10 – 12 weeks.

**Risks:** There are no physical risks to participating in the project. There may be some social and psychological risks associated with the information presented due to pictures and videos of breastfeeding techniques and positions. There are no invasive techniques used. This project is designed to increase knowledge of fathers about breastfeeding and involves collection of data from participants, both the father and mother, before and after an educational intervention.

**Benefits:** Male and female participants in the project/study will be engaging in group, classroom-type learning about breastfeeding practices, benefits, complications, and tips and thus are expected to increase their knowledge about breastfeeding. The education specifically targets the father’s role in breastfeeding. This may result in a sense of greater competency, increased support for breastfeeding practices, increased support for partner, increased attachment and bonding with the newborn, and personal satisfaction.

**Voluntary participation/withdrawal:** I understand that participating in this project is my choice, and I am free to stop at any time without any consequences.

**Questions:** If I have any questions about being in the project/study now or in the future, Jill Frisz may be contacted by phone at 217-251-4822. If I have any questions about my rights as a project participant, Rasha Abed, Chair of the Institutional Review Board at Valparaiso University College of Nursing and Health Professions may be contacted at 219-464-5798 or I can contact the Union Hospital Research Review and Compliance at 812-238-7479.

**Confidentiality/anonymity:** Although the information and answers I give may be used and reported by the researcher, my name and other facts that would identify me will be kept strictly confidential.

**Consent to participate in the research study:** I have read or have been read all of the above information about this project, the procedure, possible risks, and potential benefits to me, and I understand them. All of my questions have been answered. I give my consent freely, and offer to participate in this project.

\_\_\_\_\_  
Participant signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Project manager signature

Mailing address: \_\_\_\_\_

\*This is for the researcher to contact you and your partner at 6 weeks following the birth of your baby for additional information about feeding practices.

Expected due date: \_\_\_\_\_

Are you a first time mother or father: \_\_\_\_\_

Consent Form  
Control Group

**Study Title:** Breastfeeding Education for Fathers: An Intervention to Increase Breastfeeding Rates

**EBP Project Manager:** Jill M. Frisz, RN, BSN, DNP student

**Purpose:** I, \_\_\_\_\_, understand that I am being asked to take part in an educational intervention project which measures the effect of breastfeeding classes for fathers on breastfeeding rates.

**Procedure:** The EBP project manager/DNP student will contact the participant (you) at the beginning of the childbirth class to receive consent to access medical records for female participants and to collect demographic information from both male and female participants. The medical records will be accessed for the sole purpose of looking at the date of delivery and the health information following delivery. Data collection information will be mailed to the participant at six weeks postpartum for evaluating outcomes. A pre-addressed and pre-stamped return envelope will be made available to the participants to allow for easier return to the project manager. The intervention and data collection will take place over a period of about 10 – 12 weeks.

**Risks:** There are no physical or other known risks to participating in the project. There are no invasive techniques used. This project is designed to assess the knowledge of fathers about breastfeeding and involves collection of data from participants, both the father and mother, after delivery of the newborn.

**Benefits:** This project may result in a sense of greater competency, increased support for breastfeeding practices, increased support for partner, increased attachment and bonding with the newborn, and personal satisfaction.

**Voluntary participation/withdrawal:** I understand that participating in this project is my choice, and I am free to stop at any time without any consequences.

**Questions:** If I have any questions about being in the project/study now or in the future, Jill Frisz may be contacted by phone at 217-251-4822. If I have any questions about my rights as a project participant, Rasha Abed, Chair of the Institutional Review Board at Valparaiso University College of Nursing and Health Professions may be contacted at 219-464-5798 or I can contact the Union Hospital Research Review and Compliance at 812-238-7479..

**Confidentiality/anonymity:** Although the information and answers I give may be used and reported by the researcher, my name and other facts that would identify me will be kept strictly confidential.

**Consent to participate in the research study:** I have read or have been read all of the above information about this project, the procedure, possible risks, and potential benefits to me, and I understand them. All of my questions have been answered. I give my consent freely, and offer to participate in this project.

\_\_\_\_\_  
Participant signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Project manager signature

Mailing address: \_\_\_\_\_

\*This is for the researcher to contact you and your partner at 6 weeks following the birth of your baby for additional information about feeding practices.

Expected due date: \_\_\_\_\_

Are you a first time mother or father: \_\_\_\_\_

## Appendix E

## Demographic Form

## Demographic Information

Please fill out the following information to the best of your knowledge. If you do not wish to answer a question, you may leave it blank.

**1. Gender**

a. Male

b. Female

**2. Age:** \_\_\_\_\_**3. Highest level of education**

a. Some high school

b. High school diploma

c. Some college

d. Associate's degree

e. Undergraduate degree

f. Graduate degree

**4. Annual household income:**

a. Less than 10,000

b. 10,000 – 24,999

c. 25,000 – 39,999

d. 40,000 – 59,999

e. 60,000 – 79,999

f. 80,000 – 99,999

g. 100,000 – 114,999

h. 115,000 – 149,999

i. 150,000 or more

**5. Race/Ethnicity:**

a. A: White

b. B: African American

c. C: Hispanic

d. D: Asian / Pacific-Islander

e. E: Native American

f. Other

**6. Marital Status:**

a. Single, never married

b. Married

c. Separated

d. Divorced

Appendix F  
Data Questionnaires

Breastfeeding Rates

Please answer the following questions to the best of your knowledge.

1. **How often has your newborn been breastfed since birth?**
  - a. Every day
  - b. Almost every day
  - c. Occasionally
  - d. Never
  
2. **How often has your newborn only been fed with breastmilk (no other form of formula, water, or supplement)?**
  - a. Every day
  - b. Almost every day
  - c. Occasionally
  - d. Never
  
3. **If your newborn is not currently being breastfed, about when did he or she stop receiving breastmilk?**
  - a. Within the first week
  - b. 1 week
  - c. 2 weeks
  - d. 3 weeks
  - e. 4 weeks
  - f. 5 weeks
  - g. 6 weeks
  - h. Was never breastfed
  
4. **How comfortable are you with the topic of breastfeeding?**
  - a. Very comfortable
  - b. Comfortable
  - c. Neither
  - d. Uncomfortable
  - e. Very uncomfortable
  
5. **Do you agree with the following: “Breastfeeding information is important for the male partner.”**
  - a. Strongly agree
  - b. Agree
  - c. Neither agree or disagree
  - d. Disagree
  - e. Strongly disagree

## Paternal Postnatal Attachment Scale

These questions are about your thoughts and feelings about your baby. Please tick one box only in answer to each question.

1. When I am caring for the baby, I get feelings of annoyance or irritation.
  - Very frequently
  - Frequently
  - Occasionally
  - Very rarely
  - Never
  
2. When I am caring for the baby, I get feelings that the child is deliberately being difficult or trying to upset me.
  - Very frequently
  - Frequently
  - Occasionally
  - Very rarely
  - Never
  
3. Over the last two weeks I would describe my feelings for the baby as
  - Dislike
  - No strong feelings toward the baby
  - Slight affection
  - Moderate affection
  - Intense affection



4. I can understand what my baby needs or wants:
- Almost always
  - Usually
  - Sometimes
  - Rarely
  - Almost never
5. Regarding my overall level of interaction with the baby I believe I am:
- Much more involved than most fathers in my position
  - Somewhat more involved than most fathers in my position
  - Involved to the same extent as fathers in my position
  - Somewhat less involved than most fathers in my position
  - Much less involved than most fathers in my position
6. When I am with the baby I feel bored:
- Very frequently
  - Frequently
  - Occasionally
  - Almost never
7. When I am with the baby and other people are present I feel proud of the baby:
- Very frequently
  - Frequently
  - Occasionally
  - Almost never
8. I try to involve myself as much as possible in child care and looking after the baby:
- This is true
  - This is untrue

9. I find myself talking to people (other than my partner) about the baby:

- Many times each day
- A few times each day
- Once or twice a day
- Rarely on any one day

10. When I have to leave the baby:

- I usually feel rather sad (or it's difficult to leave)
- I often feel rather sad (or it's difficult to leave)
- I have mixed feelings of both sadness and relief
- I often feel rather relieved (and it's easy to leave)
- I usually feel rather relieved (and it's easy to leave)

11. When I am with the baby:

- I always get a lot of enjoyment/satisfaction
- I frequently get a lot of enjoyment/satisfaction
- I occasionally get a lot of enjoyment/satisfaction
- I very rarely get a lot of enjoyment/satisfaction

12. When I am not with the baby, I find myself thinking about the baby:

- Almost all the time
- Very frequently
- Frequently
- Occasionally
- Not at all

13. When I am with the baby:

- I usually try to prolong the time I spend with him/her
- Neither
- I usually try to shorten the time I spend with him/her

14. When I have been away from the baby for a while and I am about to be with him/her again, I usually feel:

- Intense pleasure at the idea
- Moderate pleasure at the idea
- Mild pleasure at the idea
- No feelings at all about the idea
- Negative feelings about the idea

15. Over the past three weeks, I have found myself just sitting looking at the sleeping baby for periods of five minutes or more:

- Very frequently
- Frequently
- A few times
- Not at all

16. I now think of the baby as:

- Very much my own baby
- A bit like my own baby
- Not yet really my own baby

17. Regarding the things that we have had to give up because of the baby:

- I find that I resent it quite a lot
- I find that I resent it a moderate amount
- I find that I resent it a bit
- I don't resent it at all

18. Over the past three months, I have felt that I do not have enough time for myself or to pursue my own interests:

- Almost all the time
- Very frequently

- Occasionally
- Not at all

19. Usually when I am with the baby:

- I am very impatient
- I am a bit impatient
- I am moderately impatient
- I am extremely impatient

## Postpartum Partner Support Scale

Below is a series of statements about your spouse/partner and the support provided after the birth of your baby. Please indicate which number comes closest to how you have been feeling during the past 4 weeks.

1 = Strongly disagree

2 = Disagree

3 = Agree

4 = Strongly Agree

<b>IN GENERAL, MY SPOUSE/PARTNER:</b>		<b>Strongly disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1	Respects the decisions I make as a mother	1	2	3	4
2	Is there for me when I need him	1	2	3	4
3	Helps me take care of the baby	1	2	3	4
4	Encourages me to get help when I need it	1	2	3	4
5	Makes me feel that I am a good mother	1	2	3	4
6	Agrees with how I am taking care of the baby	1	2	3	4
7	Listens to my concerns	1	2	3	4
8	Provides useful suggestions to help me with my concerns	1	2	3	4
9	Cares about me and how I am doing	1	2	3	4
10	Increases my confidence in being a good mother	1	2	3	4
11	Helps me with the household chores	1	2	3	4
12	Encourages me when I am stressed with the all the demands of being a mother	1	2	3	4
13	Helps me cope with any difficulties I encounter	1	2	3	4
14	Provides me with feedback on how I am doing	1	2	3	4
15	Disagrees more with me since the birth of the baby	1	2	3	4
16	Helps me feel positive about being a mother	1	2	3	4
17	Helps me solve any problems I am having	1	2	3	4
18	Helps me find answers to my questions	1	2	3	4
19	Provides me with opportunities to do things for myself	1	2	3	4
20	Makes me feel better after talking with him	1	2	3	4
21	Makes me feel that I can count on him if I need help	1	2	3	4
22	Provides me with companionship to do different things	1	2	3	4
23	Criticises me and how I am taking care of the baby	1	2	3	4
24	Helps me see the positive side of things	1	2	3	4
25	Overall, I am satisfied with the support from my partner	1	2	3	4

Appendix G  
Dad's Playbook

# The Daddy Playbook: Dad's Guide to Breastfeeding



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# The X's & O's: Breastfeeding Facts





## What is Breast Milk?

What is in mom's breastmilk is determined by several things: stage of lactation, diet, time of day, and mom herself.

1. *Colostrum*: This is the first milk to come from mom's breasts. It is yellow and thicker than "normal" milk. Colostrum is made during the first postpartum week. This milk not only looks different, it has different nutrients in it as well: more sodium, potassium, chloride, proteins, fat-soluble vitamins, and minerals. It has lots of antibodies from mom to help your new baby fight off infection. It's also full of calories for energy and helps baby to have regular bowel movements.
2. *Transitional milk*: Transitional milk is typically made from day 7-10 of your new baby's life until 2 weeks. The amount of antibodies decrease but this milk contains higher amounts of lactose, fat, and calories.
3. *Mature Milk*: This is the milk made following the first 2 weeks of your baby's life. This milk is the only nutrition your baby will need for the first six months of his or her life. It is mainly made up of water, lipids (fats), proteins, lactose, potassium, iron, and vitamins A, E, and C.

## **Why is Breast Milk Good?**

Breast milk contains many important immune factors that help to protect your baby from getting sick with some very bad bugs!

1. Immunoglobulin A: helps protect baby from *E. coli* and *V. cholerae* which can cause diarrhea
2. Bifidus factor: this bacteria prevents growth of “bad” bacteria such as *Staphylococcus aureus*, *Shigella*, and *Protozoa* which can cause some common illnesses
3. Viral Antibodies: help protect your baby from these major viruses: the flu, poliovirus, coxsackievirus, and rhinovirus
4. Allergy Prevention: protects against the development of allergies; a baby that ingests regular cow milk is more likely to develop allergies. Cow’s milk is the primary ingredient of formula. An allergy to cow’s milk can lead to rhinitis, pulmonary diseases, upset stomach, and failure to thrive.

## **Facts from the World Health Organization**

1. The World Health Organization (WHO) recommends exclusive breastfeeding of a baby up until 6 months of age and then continuing to breastfeed up until baby is 2 years old.
  - a. The WHO recommends breastfeeding the baby whenever he or she is hungry, no matter day or night.
2. Breastfeeding provides baby with lots of antibodies to prevent illnesses such as diarrhea and pneumonia.
3. When baby is breastfed exclusively, breastfeeding is 98% effective as a method of birth control (still not completely fool-proof). It reduces the risk of ovarian and breast cancer later in life. It helps to decrease the risk of obesity and helps mom return to pre-pregnancy weight quicker.
4. Studies have shown breastfeeding can have effects later in life for children too. Kids who were breastfed as babies are less likely to develop type 2 diabetes, are less likely to be overweight or obese, and are more likely to do better on intelligence tests.
5. Formula doesn't have the antibodies found in breast milk that help prevent baby from becoming sick. Also, if formula is not prepared in a safe way, the powder may have harmful bacteria in it which can make baby sick.
  - a. If formula is diluted to make it last longer, the baby may become malnourished because he or she is getting less formula and more water.

6. Many women who attempt to breastfeed may be concerned about not having enough milk to feed the baby as well as nipple pain that occurs from breastfeeding. Almost all hospitals offer assistance with getting baby to latch and breastfeed. In addition, there are several resources (listed at the end of this book) that can help a mom who is having difficulty.
7. At six months, foods can begin to be introduced into baby's diet. The amount of breast milk fed to baby should not be lessened when baby is first being fed solids. It's important to feed any solid foods with a spoon or cup (not in a bottle).

## **When should Mom not Breastfeed?**

The following are situations when you and mom need to talk to the doctor about the safety of breastfeeding. Breastfeeding may *not* be okay in these situations:

1. Human Immunodeficiency Virus (HIV) positive moms
2. Active tuberculosis (TB) that is not being treated
3. Infants who have *galactosemia* (a condition where your baby cannot digest the simple sugar called galactose. It is found in breast milk and formula and can cause brain, liver, eye, or kidney problems if milk/formula is taken in)
4. Moms who are currently on drugs (recreational/abuse of prescription medications), chemotherapeutic drugs, or radioactive isotopes.

## Medications that are Safe to use while Breastfeeding:

- |                  |                  |
|------------------|------------------|
| 1. Acetaminophen | 17. Mexilitine   |
| 2. Acyclovir     | 18. Minoxidil    |
| 3. Amoxicillin   | 19. Piroxicam    |
| 4. Azithromycin  | 20. Prednisone   |
| 5. Cefoxitin     | 21. Procainamide |
| 6. Cimetidine    | 22. Progesterone |
| 7. Ciprofloxin   | 23. Propanolol   |
| 8. Clindamycin   | 24. Sumatriptan  |
| 9. Diltiazem     | 25. Suprafen     |
| 10. Erythromycin | 26. Terbutaline  |
| 11. Fluconazole  | 27. Ticarcillin  |
| 12. Ibuprofen    | 28. Toletin      |
| 13. Labetalol    | 29. Valacyclovir |
| 14. Methyldopa   | 30. Verapamil    |
| 15. Methimazole  | 31. Zolpidem     |
| 16. Metoprolol   |                  |

There are many more medications that are safe to take while breastfeeding. A few great resources are:

- \* Lactmed (a free app for phones)
- \* *Medications and Mother's Milk* by Dr. Thomas Hale



## Union Hospital's Goals

Union Hospital is on the journey to help you and your partner have success in breastfeeding. The hospital is working to become a part of the Baby-friendly Hospital Initiative. The 10 steps to successful breastfeeding are

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within one hour of birth.
5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breast milk, unless medically indicated.
7. Practice rooming-in - that is, allow mothers and infants to remain together - 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no pacifiers or artificial nipples to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

# Being a Team Player: The Role of Dad





## **Tips for Dad**

These are some things you can do to help mom.

1. Do small household tasks (dishes, laundry, vacuuming)
2. Change baby's diaper
3. Bring baby to mom when it's time to eat
4. Burping baby following feeding
5. Rock baby following feedings or as needed
6. If mom is pumping, help with the equipment (putting it together and cleaning)
7. Make sure mom is eating and drinking plenty
8. Perform skin to skin contact with your baby



# The Positions: Breastfeeding Positions

## **Cradle hold**

Mom sits up with baby facing her. Baby's head or arm rests on mom's forearm or in the crook of her arm. The cradle hold is good with a baby that has low muscle tone (for example, a baby with Down syndrome).



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## **Cross-cradle hold**

Mom sits up with baby laying across her tummy to tummy. Mom will hold baby in the crook of her arm and feed baby from the opposite breast (left arm for right breast, right arm for left breast). Mom will support baby's head with her open hand and with her other hand will support the breast from underneath making a "U" shape. Mom should not bend over, rather baby will be brought to the breast.



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## **Football hold**

Mom sits up with baby's head facing her breast and baby's body against mom's side. Mom's arm should support baby. A pillow can be placed under baby's bottom so mom can prop her elbow there for additional support. The football hold is a good feeding position for a mom who underwent abdominal surgery (C-section) because it doesn't put any pressure on the incision.



## **Side-lying position**

Mom and baby both lie on their sides facing each other. Baby's feet should be pulled in close toward his or her body. This position is good for mom's who are tired and can be restful when trying to breastfeed baby. If mom is uncomfortable, try adding pillows behind her head, back, or under her knee.



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### **Slide-over position**

Mom starts nursing the infant on the preferred breast. Once the milk ejection reflex has begun, mom slides baby over to the less preferred side. This is best for a baby who does not want to or refuses to nurse from one breast. Baby's position is never changed, he or she "slides over" to the less preferred breast.

### **Biological Nursing Position**

Mom starts by lying back in a comfortable position and is well supported (propped with pillows). The baby is laid against mom's chest with baby's front against mom's front. Bring the baby's head near mom's bare breast. This type of breastfeeding is to allow mom and baby's natural instincts to take place. Let the baby feel around for the nipple and relax and enjoy this bonding time.

# Offense: Cues to Breastfeed





## How often to Feed Baby

Your baby will need to feed often in order to meet up with his or her demands. Your baby will need to eat on demand.

1. Feed baby as often as baby is willing to eat.
2. No time limits for feeding.
3. During the first week, your baby may eat more (10+ times in 24 hours)

There are some signs that your baby is getting enough food. These signs include output (voids – urination and bowel movements)

1. Day 1: 1 void and 1 stool
2. Day 2: 2 voids and 2 stools
3. Day 3: 3 voids and 3 stools
  - Day 1-3: stools will be meconium (dark and tarry)
  - Day 3-5: stools will be green
  - Day 5-7: stools will be seedy and yellow
4. Six or more wet diapers in 24 hours by day 4-5
5. Your baby appears satisfied when not eating
6. Mom's breasts feel lighter or soften when baby is feeding
7. Mom's nipples are not cracked or bleeding
8. Mom may feel drowsy, thirsty, and may feel her uterus contracting when she feeds baby
9. Your baby may be easy to wake up to eat every 3 hours but once milk comes in full supply, baby may sleep 4-5 hours one time in a 24 hour period. This is normal.



# Defense: Preventing Complications

## Situations to Avoid:

The following are things that mom can do that may make breastfeeding *more* difficult:

1. **Separation:** baby may not be able to eat when he or she is hungry and the *milk ejection reflex* (the ability of milk to come from the breast) is stopped. Milk then “comes to a standstill” in the breast. This can cause a condition called *engorgement*
2. **Delayed feedings:** even waiting an hour and a half after birth may make it more difficult for mom to breastfeed the baby. It can cause the milk ejection reflex to be more difficult than if the baby feeds right after birth
3. **Feeding with a bottle:** If a baby feeds with a bottle, it can cause pain and trauma for mom.
4. **Limiting the number of times and amount of time to breastfeed:** The milk ejection reflex takes 2-3 minutes to occur. If baby is fed for short periods of time, it can cause the reflex to become delayed or interrupted, can cause baby to not get enough milk, and cause engorgement and sore nipples.

## Tips

1. Help mom avoid cracked or dry nipples by reminding her to avoid using soap on the nipples. Warm water only is the best way to wash breasts.
2. Mom can use a cream such as lanolin for nipple cracking; however, she should **feed baby first** then apply the cream. Lanolin can be applied to nipples before pumping.
3. Mom should also avoid Vitamin E or hormone creams on nipples as they can be unsafe unless prescribed by her doctor.
4. Avoid giving baby a bottle or pacifier (this can make it difficult for baby to latch onto mom and can cause pain).

## **Breast Milk Storage Guidelines**

Follow the rule of 8's:

1. 8 hours at room temperature
2. 8 days in the refrigerator
3. 8 months in the freezer
4. Put milk in the fridge as soon as possible if you are not using the milk after pumping. If it has been in the refrigerator for close to 8 days and you plan on freezing the milk, put in the freezer as sooner rather than later.
5. When freezing milk, label it with the date it was frozen.
6. To unfreeze the milk, thaw it in a refrigerator or place the frozen container in a bowl of warm water. Do not thaw or heat milk in the microwave (this can cause the milk to be very hot in some places and can burn).
7. Do not refreeze milk once it is thawed.

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