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Hannah Newell

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# The Impact of Breastfeeding Education

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## A Retrospective Look at Breastfeeding Education & Breastfeeding Rates

**An undergraduate honors thesis submitted in partial fulfillment  
of the requirements for the degree of  
Bachelor of Science in Nursing**

**By**

**Hannah Newell**

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University of Arkansas**

## **Introduction**

Families often need time and space to discuss the social-emotional aspects of breastfeeding. Most women are aware that breastfeeding is the best source of nutrition for infants. However, they frequently lack the knowledge about the numerous health benefits, which prevents them from making an informed decision regarding their desire to initiate breastfeeding. Breastfeeding success rates increase when primary care providers proactively approach women about breastfeeding. Providing adequate education regarding breastfeeding during pregnancy and throughout the breastfeeding experience, encouragement when challenges or problems arise, and appropriate management for feeding problems that need medical attention help increase breastfeeding rates.

## **Literature Review**

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Breastfeeding is associated with improved health outcomes for both mother and child. Not only does it provide optimal nutrition for the infant, it also encourages an intimate maternal-infant bonding experience that establishes the basis for parenting and interaction [4]. Major medical organizations including the Surgeon General's Healthy People 2020 have an aim of increasing the number of women who initiate breastfeeding, and a recommendation of exclusive breastfeeding for the first six months and continued breastfeeding for at least one year [3, 10]. For mothers who breastfeed, benefits include a lower risk for breast and ovarian cancers, depression, and Type II diabetes. Mothers who are obese and participate in prolonged nursing decrease the risk of subsequent obesity during infancy and adulthood. Breastfed babies have increased protection from infection and illnesses such as diarrhea, ear infections, and pneumonia and are less likely to develop asthma. In later life, exclusive breastfeeding may be associated with lower blood cholesterol. Adults who were breastfed as babies may be less likely to develop risk factors for heart disease such as obesity and hypertension [9]. Prolonged and exclusive breastfeeding has been shown to promote brain development, leading to significantly higher vocabularies and higher verbal IQ scores than other children [1, 5]. Along with health benefits, it has been estimated that \$13 billion would be saved annually on medical care and approximately 900 premature deaths could be avoided if 90% of mothers exclusively breastfed their infants in the first six months of life [1, 10]. Despite the many benefits, there are a variety of factors that deter mothers from initiating breastfeeding or prohibit successful breastfeeding. Intention to exclusively breastfeed is strongly correlated with how confident and motivated a woman feels she is to initiate and maintain exclusive breastfeeding and how important she believes initiating and maintaining breastfeeding is for her infant. The stronger self-efficacy a woman has in her ability to be able to maintain exclusive breastfeeding, the higher her motivation is likely to be to

initiate exclusive breastfeeding [7]. Obese women often have difficulties and face obstacles when breastfeeding and are at a higher risk for early termination. This is often due to a lower prolactin response to suckling, leading to diminished milk production, poor baby latching on due to mechanical difficulties in positioning, and the potential for low self-confidence and breastfeeding experience [5, 8]. Lower breastfeeding rates are shown to occur in younger, non-Hispanic Black mothers with low education or socioeconomic status [3, 10, 16]. Pregnancy-related mood disorders such as depression and anxiety may also serve as barriers to successful breastfeeding women. Breastfeeding pain, caused by nipple pain, engorgement, and mastitis and a perceived inadequate amount of milk production are also factors that may impact breastfeeding rates [8]. Nipple pain is mechanical in nature, and can result in poor infant positioning at the breast, disorganized infant suckling, and nipple/tongue friction. This can cause physical trauma to the nipple, engorgement, infection, or dermatologic conditions. Engorgement may be classified as physiological or pathological, both of which can inhibit successful breastfeeding. Normal physiological engorgement occurs around the third to fifth postpartum day after mothers typically leave the hospital; breastfeeding mothers are often left to manage issues at home without immediate assistance from health professionals. Pathological engorgement is an uncomfortable fullness that can occur anytime during lactation due to milk retention. This sensation of full, hard and painful breasts from milk retention can be the result of separation of mother and infant, delayed initial feeding, sore nipples, improper latch or technique, supplements, or inadequate feeding. Research findings have revealed that breastfeeding self-efficacy is an independent and significant predictor of both intention to exclusively breastfeed and exclusive breastfeeding duration of six months. Maternal attitude towards pregnancy, and psychosocial adjustment in addition to breastfeeding difficulties have also been established as

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having a significant influence on breastfeeding intention and duration [7]. Barriers to breastfeeding and the quality of breastfeeding support, instruction, and resources have been shown to predict breastfeeding success. While most women are aware that breastfeeding is the best source of nutrition for infants, they often lack knowledge regarding the numerous health benefits or reduction in health risks that occur through breastfeeding. This lack of knowledge inhibits mothers from properly weighing the advantages and disadvantages of breastfeeding to make an informed decision [14, 15]. Increased exclusive breastfeeding rates are best achieved with specific, measurable, attainable, realistic, and timely goals. In order to increase breastfeeding rates, it is important to provide mothers with adequate information and support, especially during their hospital stay [1-5, 8, 10-12, 14-16]. This is attainable through evidence-based policies, staff education and training, active nurse involvement, and collaboration of the multidisciplinary health care team [13]. The Baby Friendly Hospital Initiative (BFHI) is a global program that was launched by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) in 1991 to encourage and recognize hospitals and birthing centers that offer an optimal level of care for infant feeding and mother/baby bonding. In 2007, only 2.9 percent of U.S. births occurred in Baby-Friendly designated facilities. Today, 6.9 percent of births occur in Baby-Friendly designated facilities. The Healthy People 2020 goal of 8.1 percent would be eclipsed if all hospitals embraced this evidence-based program before 2020 [11].

Becoming a Baby-Friendly facility is a comprehensive, detailed and thorough journey toward excellence in providing evidence-based, maternity care with the goal of achieving optimal infant feeding outcomes and mother/baby bonding. By providing a comprehensive breastfeeding education plan to perinatal nursing staff, it has been demonstrated that the baby Friendly Health Initiative is a valid breastfeeding educational program and leads to increased exclusive

breastfeeding rates [11]. In an effort to achieve the status of a Baby-Friendly designated facility, the effectiveness of breastfeeding education at Washington Regional Medical Center needs to be evaluated. The purpose of this study is to determine whether or not there is a statistically significant difference in the numbers of mothers who initially choose not to breastfeed upon admission, but initiate breastfeeding by the time of discharge following a breastfeeding teaching intervention delivered by personnel at Washington Regional Medical Center.

### **Study Question**

Does a breastfeeding teaching intervention delivered by personnel at Washington Regional Medical Center influence breastfeeding decision at discharge in women who previously did not plan on breastfeeding their infant?

### **Methodology**

This study will begin following approval by the University of Arkansas IRB and the Washington Regional Medical Center's Quality Improvement Department. The research study design will consist of a pre- post-retrospective medical records review and analysis, examining data before and after implementation of a breastfeeding teaching intervention.

Sample: The sample will consist of a total of 202 medical records reviewed of mothers who delivered at Washington Regional Medical Center between September 2014 and May 2015 who indicated on admission that they did not plan on breastfeeding their infant. Women delivering stillborn infants, infants who require additional medical care that prevents breastfeeding, infants with genetic disorders (e.g. cleft lip/palate, Trisomy), and infants transferred to a higher level of neonatal care, will be excluded from the study. All patient information will be de-identified in

accordance with the Health Insurance Portability and Accountability Act (HIPAA) guidelines.

All non-identifiable data will be kept on a password-protected computer.

Statistical analysis: A chi-square goodness-of-fit test will be performed to determine if breastfeeding teaching intervention at WRMC significantly influences breastfeeding decision at discharge in women who originally indicated that they did not intend to breastfeed their infant.

### **Results**

Between September 1, 2014 and March 16, 2015, a sample of 249 medical records of mothers who delivered at Washington Regional Medical Center and indicated upon admission that they did not plan on exclusively breastfeeding their infant were collected. Of the 249 medical records obtained during this time, 202 charts met the criteria for review. The following data was collected. The mean gestation of the population upon delivery was 38.33 weeks, with a minimum gestation of 27.20 weeks and maximum gestation of 42.10 weeks. Of the 202 medical records reviewed, n = 147 (71.3%) women delivered vaginally, and n = 55 (27.2%) delivered via c-section. During hospital stay, breastfeeding education was provided to each mother by a certified Washington Regional lactation consultant, and breastfeeding exclusivity status was indicated in the medical record upon discharge. The reason mothers chose not to exclusively breastfeed their infant (used formula or breast/formula combo) was documented in the patient medical record and included: maternal choice (73.7%), medical indication (1.5%), maternal choice/medical indication (1.5%), adoption (6.9%), infant unstable (2.0%), substance abuse (0.5%), and not specified (13.9%). This study revealed that upon discharge, n = 177 of the 202 women who originally indicated that they did not plan on exclusively breastfeeding were not exclusively breastfeeding their infant, while n = 25 were discharged exclusively breastfeeding. A chi-square



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goodness-of-fit test was conducted to determine whether an equal number of women (were/were not exclusively breastfeeding upon discharge) were recruited to the study. The minimum expected frequency was 101. The chi-square goodness-of-fit test indicated that the number of women who were not exclusively breastfeeding and those who were exclusively breastfeeding at discharge was statistically significantly different ( $X^2(1) = 114.376, p < .001$ ), with just over 12% of mothers choosing to exclusively breastfeed [Table 1, Table 2, Figure 1].

**Table 1: Breastfeeding Decision Upon Discharge**

	Observed N	Expected N	Residual
Not exclusive breast feeding	177	101.0	76.0
Yes exclusive breast feeding	25	101.0	-76.0
Total	202		

Table 1: Exclusive breastfeeding numbers upon discharge. A total of 202 medical records of women indicating they did not plan on exclusively breastfeeding their infant were reviewed. 177 records indicated non-exclusive breastfeeding, while 23 records indicated exclusive breastfeeding upon discharge. This chart shows that the expected frequencies for each category is 101.0 if the null hypothesis is true. The residual column shows the difference between the observed column and expected column, and indicates “fit”.

**Table 2: Test Statistics**

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	ExculsiveDC
Chi-Square	114.376 <sup>a</sup>
df	1
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 101.0.

Table 2: Chi-square goodness-of-fit results ( $X^2(1) = 114.376, p < .001$ ), which indicates a significant difference in the observed and expected frequencies.

**Figure 1: Discharge Breastfeeding Decision**

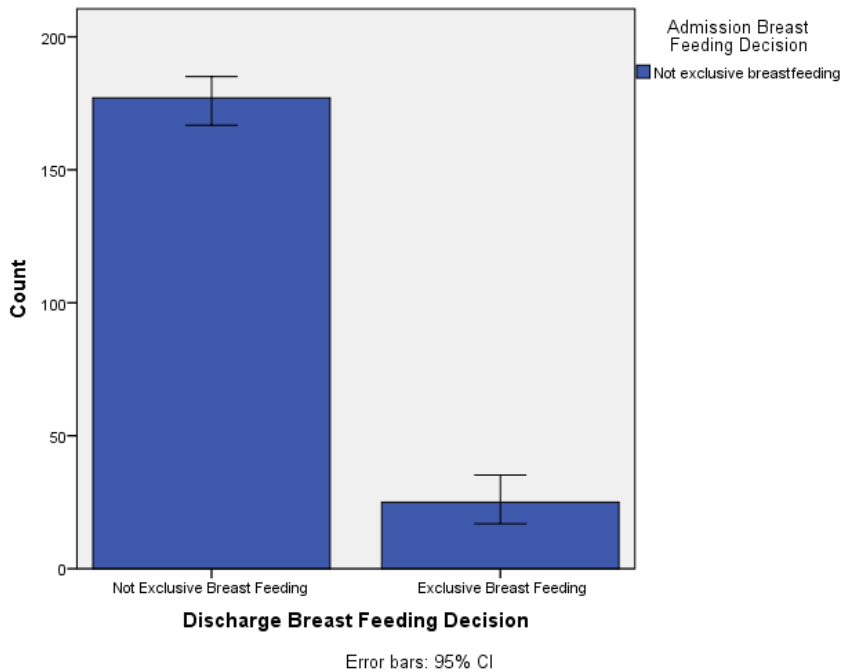


Figure 1: Number of women who indicated non-exclusive breastfeeding upon admission, and were exclusive or non-exclusive upon discharge.

## **Discussion**

This study was a retrospective data analysis, which looked at 202 medical records indicating exclusive breastfeeding status pre-and post-breastfeeding education at Washington Regional Medical Center. The results of this study do not indicate that the implemented breastfeeding education significantly influenced breastfeeding decision upon discharge in women who originally did not plan to exclusively breastfeed. Of the 202 medical records which indicated that mothers did not plan to exclusively breastfeed, only 25 records indicated exclusive breastfeeding upon discharge, which is less than was initially hypothesized [Table 1]. These findings differ from what was expected in this study, in that breastfeeding education did not increase breastfeeding rates, and on some levels, the findings do not necessarily coordinate with previously reviewed literature. For instance, barriers to breastfeeding and the quality of breastfeeding support, instruction, and resources have been shown to predict breastfeeding success. The women in this study received education regarding the numerous benefits and possible reductions in health risks that occur through breastfeeding. Support from a certified lactation consultant was available to each mother during her hospital stay, ensuring that she had accurate and adequate knowledge to weigh the advantages and disadvantages of breastfeeding in order to make an informed decision. Despite this education and support, there was not a significant increase in the number of women who were exclusively breastfeeding upon discharge. The findings of this study suggest there is a need for improvement in the effectiveness of breastfeeding education being presented to patients at Washington Regional Medical Center. Had the type of education in place at this facility been effective, there should have been a significant increase in the number of women who were exclusively breastfeeding upon discharge

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after indicating upon admission that this was not their intent. Implications for practice should encompass individualized education directed toward each mother's needs and expectations, contact with a lactation consultant during the prenatal period, and continued support/follow-up with a lactation consultant during the antenatal period. Indication for non-exclusive breastfeeding was documented in each mother's chart who was non-exclusive upon discharge. The reasons cited include: maternal choice, medical indication, maternal choice/medical indication, adoption, infant unstable, and substance abuse. It may be beneficial in future studies to further explore reasons leading to non-exclusive breastfeeding indicated by mother's choice. Determining specifics such as lack of motivation or self-confidence, inconvenience, lack of support, or pain/physical barriers, etc. could help health care professionals at Washington Regional fine tune their educational program and provide individualized support for each new mother depending on her needs. Oftentimes, mothers need continued support with breastfeeding extending beyond that which is provided during their hospital stay. Implementing psychosocial supports and methods providing positive feedback that increase a woman's self-efficacy to exclusively breastfeed to six months are important. The Baby Friendly Hospital Initiative states that the lactation consultant should foster the establishment of breastfeeding support groups and refer mothers to them upon discharge from the hospital. In addition, Baby Friendly facilities must have a written breastfeeding policy that is routinely communicated to all health care staff, and all health care staff must be trained in the skills necessary to implement the policy. While education plays an important role, additional factors influence a mother's decision to breastfeed. Future research studies should further explore the relationship between variables such as gravida, gestation, type of delivery, and whether skin-to-skin contact was initiated, etc. on exclusive breastfeeding rates. This study that was conducted was not without limitations. The records that were reviewed only

encompass a handful of months and may have provided more meaningful and accurate statistics had they spanned the length of at least one year. In addition, this study looked only at exclusive discharge rates and not breastfeeding exclusivity through six months, which is the target guideline for Healthy People 2020. The results of this study are important as they have the capacity to influence breastfeeding education, increase exclusive breastfeeding rates, and move Washington Regional Medical Center closer to becoming a Baby Friendly facility.

### **Conclusion**

A mother's decision to exclusively breastfeed her baby is influenced by a variety of factors. While most women are aware that breastfeeding is the best source of nutrition for infants, they often lack knowledge regarding the numerous health benefits or reduction in health risks that occur through breastfeeding. This lack of knowledge inhibits mothers from properly weighing the advantages and disadvantages of breastfeeding to make an informed decision. Each mother in this study received breastfeeding education from a lactation consultant at Washington Regional Medical Center. While exclusive breastfeeding rates upon discharge were significantly less than expected in mothers who initially did not intend to exclusively breastfeed, the results of this study are not without merit. Increased exclusive breastfeeding rates are best achieved with specific, measurable, attainable, realistic goals. Research shows that it is important to provide mothers with adequate information and support, especially during her hospital stay, and the results of this study call for an improvement in the effectiveness of education provided.

Comprehensive breastfeeding education and support from a lactation consultant should begin in the prenatal period and continue into the postpartum period until the mother feels that she no longer needs support. Through the implementation of evidence-based policies, staff education and training, active nurse involvement, and collaboration of the multidisciplinary health care

team, increased exclusive breastfeeding rates are attainable, bringing Washington Regional one step closer to becoming a Baby Friendly facility.

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