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Promoting Exclusive Breastfeeding Among Racial/Ethnic Minority Women for the First Six Months

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Promoting Exclusive Breastfeeding Among Racial/Ethnic Minority women for the First Six
Months

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Abstract

Background: Breastfeeding is the recommended way of feeding infants due to the numerous health benefits. However, racial/ethnic minority women in the United States are less likely to initiate and maintain breastfeeding for the recommended six months compared to white women. This has resulted in higher health issues such as obesity, diabetes type I, allergic sensitivity, acute otitis media, and gastrointestinal problems among racial /ethnic minority children. *Purpose:* The purpose of this Quality Improvement Project was to promote exclusive breastfeeding among racial/ethnic minority postpartum mothers for the first six months. This was done by providing breastfeeding education to postpartum nurses who then included the acquired knowledge in postpartum patients' education. *Goal:* The goal of this quality improvement project was to increase the rate of exclusive breastfeeding among racial/ethnic minority women by increasing nursing education. *Method:* A breastfeeding educational intervention was implemented to increase breastfeeding knowledge among maternity nurses. A website was created and breastfeeding interventions such as signs of poor/good infant feeding, risks of not breastfeeding, risks of formula feeding, infant hunger cues, appropriate infant position for breastfeeding, and information on available breastfeeding resources were loaded to the website for ease of access. The maternity nurses were given the url of the website to review the educational materials on the site at their convenience for one month. *Results/Conclusion:* 70% of the nurses self-reported that they have visited the website and reviewed the educational materials and incorporated the acquired knowledge in their patients' education. Intention to exclusive breastfeeding did not increase post-education but the intention to breastfeed in general increased.

Keywords: breastfeeding, formula feeding, racial/ethnic minority, postpartum/maternity nurses, and nursing education.

Promoting Exclusive Breastfeeding Among Racial/Ethnic Minority women for the First Six Months

Major world-recognized organizations such as the Centers for Disease Control and Prevention (CDC), American Academy of Pediatrics (AAP), United Nations International Children's Emergency Fund (UNICEF), and the World Health Organization (WHO) who promote the health of women and children recommend; a) early initiation of breastfeeding (within an hour from birth); b) exclusive breastfeeding for the first six months; c) continue to breastfeed while giving other age-appropriate foods for two years, or more as long as desired by both mother and child. However, racial/ethnic minority women in the United States are less likely to begin, and maintain, breastfeeding for the recommended six months compared to white women. The lower rate of breastfeeding has been associated with a higher incidence of obesity, diabetes type 1, allergic sensitivity, acute otitis media, and gastrointestinal problems among racial/ethnic minority children (Abdullah et al., 2019; AHR, 2017; CDC, 2019; QEl-Houfey et al., 2018).

Appropriate feeding practices are of fundamental importance for the survival, growth, development, and health of infants and young children (Franco-Antonio, 2020). An estimated one million infant lives can be saved by promoting exclusive breastfeeding during the first six months (El-Houfey et al., 2018). More than 820,000 children's lives, 87% of which are infants under six months of age could be saved annually among children under five if all children 0-23 months were optimally breastfed (WHO, 2021). Racial/ethnic minority children under the age of five years die disproportionately each year mainly from many health issues that can easily be prevented through exclusive breastfeeding (CDC, 2021). Therefore, the purpose of this Quality Improvement Project is to increase the breastfeeding rate among racial/ethnic minority

postpartum women by refining the care nurses provide to breastfeeding postpartum women through nurse breastfeeding education.

Background

Exclusive breastfeeding has many health benefits for both mothers and infants. However, the number of mothers who practice exclusive breastfeeding for the first six months is decreasing despite the increase in awareness of health benefits for both mother and baby (El-Houfey et al., 2018; Gallo et al., 2019). Breastfed infants are less likely to experience allergy sensitivity, respiratory, ear, and gastrointestinal infections, obesity, and type 1 diabetes (CDC, 2019); and are at lower risk for long-term adverse health outcomes (Gallo et al., 2019). Also, mothers who breastfeed their infants lower their own risks for hypertension, type 2 diabetes, ovarian, uterine, and breast cancers, and postpartum depression (CDC, 2019). A wide variety of strategies such as the Baby-friendly Hospital Initiative (BFHI), prenatal education, and postpartum support have been carried out to promote breastfeeding in the country (Franco-Antonio, 2020). Early initiation of breastfeeding (within one hour of birth) has been shown to improve infant-mother bonding and increase breastfeeding success (Abdullah et al., 2019; El-Houfey et al., 2018).

Racial/ethnic minority women continue to have lower breastfeeding rates than white women in the United States (Abdullah et al., 2019). Indeed exclusive breastfeeding, and early initiation to breastfeeding, are trending downward among racial/ethnic minority mothers whilst it is trending slightly up for white women (Li et al, 2019). Black infants are 15% less likely to have ever been breastfed than white infants, increasing the health needs of developing black growing infants, and increasing their risks for many childhood health problems (CDC, 2019). The United States breastfeeding surveillance has consistently shown that breastfeeding initiation, duration,

and exclusivity are 10-20% lower among black infants than white infants (Beauregard et al., 2019).

Problem Statement

Racial/ethnic minority women are less likely to begin and maintain breastfeeding for the recommended six months as compared to white women, which has resulted in higher health issues and increased mortality rates among racial/ethnic minority children. Despite the increase in awareness of exclusive breastfeeding's health benefits and the risks associated with infant formula feeding, exclusive breastfeeding rate and early initiation to breastfeeding are still low among racial/ethnic minority mothers (Beauregard et al., 2019; El-Houfey et al., 2018). This may be due to many factors challenging exclusive breastfeeding such as lack of breastfeeding knowledge and support from family and community, lactation problems, lack of support from healthcare providers (Beauregard et al., 2019; El-Houfey et al., 2018), and lack of support from partners and spouses (Tseng, et al., 2020).

The disparities in breastfeeding duration among racial/ethnic women result, in part, from disparities in breastfeeding initiation during the first hour of life. Increasing breastfeeding initiation and supporting breastfeeding among racial/ethnic minority women will help reduce disparities in breastfeeding duration. Significant efforts are needed to improve breastfeeding initiation and duration rates among racial/ethnic minority women. Maternity nurses can promote and support breastfeeding through their unique clinical practices and their efforts can have a meaningful impact on the health of the mother and child (Tseng, et al., 2020). Strategies needed to increase the breastfeeding rate among racial/ethnic minority women include educating maternity nurses to be knowledgeable in ways they may support postpartum women to initiate and continue breastfeeding.

Inadequate information about breastfeeding, and training programs for postpartum nurses who directly work with racial/ethnic mothers, greatly impact the initiation and continuation of breastfeeding among racial/ethnic minority women (El-Houfey et al., 2018). Therefore, the purpose of this quality improvement project (QIP) is to provide education to postpartum nurses so they may effectively assist and educate breastfeeding mothers and their families.

Organizational “Gap” Analysis of Project Site

According to the lactation consultants involved in this project, there is a higher rate of formula feeding among racial/ethnic minority postpartum women as compared to white postpartum women at the hospital. Racial/ethnic minority postpartum women are about 35% more likely to formula feed than white postpartum women. This is in part due to barriers to breastfeeding such as lack of knowledge about the benefits of breastfeeding, lack of peer, family, and social support, insufficient education and support from health care settings, inadequate understanding of the benefits of breastfeeding to both mothers and infants, and lack of knowledge about the risks involved in formula feeding (AHRQ, 2017). Direct support and education to racial/ethnic minority mothers about breastfeeding from healthcare providers such as nurses, lactation consultants, and physicians can significantly improve the breastfeeding rate among racial/ethnic mothers (AHRQ, 2017). The hospital is a certified Baby-Friendly Hospital Initiative (BFHI) member that helps to improve the breastfeeding rate in the hospital. However, some aspects of the ten steps to successful breastfeeding (see appendix A) still need improvement. The hospital does not provide 24 hours lactation services. Most maternity nurses who provide direct postpartum care need additional education to better equip them with the necessary knowledge required to provide breastfeeding mothers with lactation support when lactation consultants are not available.

Review of Literature

An electronic database search was conducted using the University of Massachusetts-Amherst library. The databases used for the search were CINAHL, PubMed, and Ovid. The keywords used for the search were; Promoting and supporting breastfeeding, ethnic groups or minority, maternity nurses, effects of nursing education on breastfeeding, and training program. To be included, articles needed to be research studies published in English between 2016-2021. Articles about preterm infants and infants in NICU were excluded. Also, studies without strong evidence were excluded. The original database search yielded 75 articles between the three search database. Out of the 75 articles, 64 articles remained after removing duplicated articles. Three articles that were not written in English, and English versions could not be found, were also excluded. Eleven articles remained after the exclusion criteria were applied. The eleven remaining articles were included in the synthesis. The study results were divided into three categories to manage the data during analysis: Breastfeeding barriers, nurses' knowledge about breastfeeding, and lack of Resources for Nurses.

Breastfeeding Barriers

Barriers to exclusive breastfeeding among racial/ethnic minority mothers have been associated with cultural influence, lack of adequate support from healthcare providers, lack of knowledge about the benefits of breastfeeding, lack of support from family and community, anxiety and stress (Franco-Antonio, 2020; Tseng et al., 2020). Racial/ethnic minority mothers disproportionately experience several of these barriers to breastfeeding, leading to a low rate of exclusive breastfeeding among racial/ethnic minority mothers. The low rate of exclusive breastfeeding among racial/ethnic minority women has led to poor infant health, leading to an

increased risk of long-term health problems among racial/ethnic minority children (Beauregard et al., 2019; El-Houfey et al., 2018).

Nurses' Breastfeeding Knowledge

Knowledge deficits exist among nurses who provide direct care to breastfeeding mothers. The knowledge deficit is partly due to the inadequate didactic and clinical breastfeeding education provided to nursing students in nursing schools (Ceylan & Cetinkaya, 2020). This insufficient knowledge among maternity nurses contributes to the low breastfeeding rate among racial/ethnic postpartum mothers (Alakaam et al., 2018; Ceylan & Cetinkaya, 2020).

Initiating and maintaining a successful breastfeeding process is influenced by many factors such as the nurses' knowledge about breastfeeding, availability of nursing support, patient's knowledge about breastfeeding, and available breastfeeding resources (Beauregard et al., 2019; Ceylan & Cetinkaya, 2020; El-Houfey et al., 2018). Most barriers to breastfeeding such as lack of knowledge about breastfeeding, the misconception that formula is equivalent to breastmilk, returning to work or school, are beyond the breastfeeding mothers' control and need to be addressed by healthcare providers working with the patient (Gallo et al., 2019, Franco-Antonio, 2020). The support of nurses in the early postpartum period is essential to ensure early detection of breastfeeding challenges/barriers and appropriately support the breastfeeding mother to overcome these barriers in the early breastfeeding period (Brown, 2017; Ceylan & Cetinkaya, 2020). Maternity nurses need specialized education to equip them with the necessary knowledge to provide breastfeeding mothers with the lactation support they need when lactation consultants are not available. Lactation consultants are mostly not available during the 11pm-7am overnight. The lactation consultants see every patient on the unit once during their shift and per as needed until they leave the facility at 11 pm. Nurses' support and education are vital to postpartum

breastfeeding mothers in the early postpartum period to provide breastfeeding mothers with breastfeeding knowledge to initiate and maintain breastfeeding.

Lack of Resources for Nurses

Many maternity nurses are interested in adopting the ten steps to successful breastfeeding to help support and improve breastfeeding, but lack of sufficient resources such as adequate staffing, sufficient time, and lack of nursing education about breastfeeding draw them back (Alakaam et al., 2018; Cunningham et al., 2018). Lack of collaboration among various healthcare providers is another factor associated with a low rate of exclusive breastfeeding among racial/ethnic minority women. This is due to lack of communication and break of communication that exists between healthcare professionals. Improving interdisciplinary collaboration could lead to an increase in breastfeeding. (Anstey et al., 2018).

Breastfeeding mothers need direct lactation assistance, support, and education from a variety of providers, yet providers lack a standardized lactation education and training leading to a lack of confidence and skills to guide mothers at the early stages of breastfeeding (Chuisano & Anderson, 2020; Cunningham et al., 2018). The lack of standardized lactation education among providers leads to inconsistency in education for breastfeeding mothers. The inconsistency results in mistrust, anxiety, and stress (Tseng, 2020) leading to poor breastfeeding outcomes among breastfeeding mothers (Beauregard et al., 2019; Chuisano & Anderson, 2020).

It is well established that breastfeeding has substantial benefits for the health of the infant and mother, especially if breastfeeding is conducted exclusively for 6 months and if postpartum mothers and their partners have the confidence in handling breastfeeding difficulties (Tseng et al., 2020). Exclusive breastfeeding has many great benefits for both mother and infant. It helps to protect infants from major causes of childhood morbidity and mortality. It is evidently proven in

the literature that breastfeeding education is effective means of increasing both breastfeeding initiation and duration among racial/ethnic minority women. Abdulahi et al. concluded that breastfeeding education and support intervention (BFESI) increased the exclusive breastfeeding rate by 14.6% (2021).

Maternity nurses need breastfeeding education to help them with the knowledge to support breastfeeding mothers during the initiation and continuation of breastfeeding among racial/ethnic minority breastfeeding mothers.

Theoretical Framework

Leininger's Transcultural nursing theory was used to inform this quality improvement project. Leininger's theory encourages nurses to provide care in harmony with individuals' or groups' cultural beliefs, practices, and values. (Leininger, 1995). The QIP promoted breastfeeding among racial/ethnic mothers with different cultural backgrounds who have different perspectives and perceptions regarding health illnesses and caring practices (Leininger, 1995). The maternity nurses assessed patients' cultural beliefs about breastfeeding and educate them accordingly to help increase their intention of exclusive breastfeeding. America is very diverse, and it is necessary to consider incorporating transcultural nursing practice in providing nursing services to all individuals. People from different backgrounds usually adhere to their cultural values and practices, and breastfeeding is no exception. Understanding the individual's cultural experience and traditional values, then providing them with the necessary nursing support and education, will promote breastfeeding and discourage formula feedings among racial/ethnic women (Gonzalo, 2021; Leininger, 1995). The diagram of Leininger's model is shown in appendix B.

Methods

An educational intervention was used in this quality improvement project. A website was created by the DNP student and evidence-based breastfeeding educational materials were uploaded to the website. Educational materials include benefits of breastfeeding to the baby and mother, different types of latching positions, signs of poor/good infant feeding, risks of not breastfeeding, risks of formula, and infants hunger cues. The information of the above-mentioned educational materials was retrieved from credible sources such as CDC, WIC breastfeeding support, WHO, infactcanada.com, and medela.com.

The web address was given to the maternity nurses to visit and review the educational materials on the site for at least three times in one month. People from different backgrounds usually adhere to their cultural values and practices, and as such, the nurses were encouraged to assess patients' cultural beliefs on breastfeeding and educate them accordingly to help increase their intention of exclusive breastfeeding. After the education, the maternity nurses were encouraged to incorporate the acquired knowledge in their patient education throughout patients' stays in the hospital. The nurses were asked to enquire from the mothers about their feeding plans during admission and discharge.

Goals, Objectives, and Expected Outcomes

The goal of this quality improvement project (QIP) was to promote exclusive breastfeeding among racial/ethnic minority women by providing nursing breastfeeding education to maternity nurses on ways to effectively assist, support, and educate postpartum mothers about breastfeeding and its benefits.

The objective of the quality improvement project (QIP) was to develop a website and populate the website with breastfeeding educative materials to help nurses get the education needed to assist postpartum mothers with breastfeeding support.

The expected outcomes were (1) at least 60% of the maternity nurses visited the website and reviewed the education at the website and self-reported incorporating the acquired knowledge into patient education at the hospital, and 2) the intention to exclusive breastfeeding to increase among racial/ethnic minority breastfeeding mothers by at least 10% from the pre-intervention to post-intervention period.

Measurement Instrument

All patient participants were verbally asked about their feeding plans, the reason behind that feeding plans, and if culture has any role to play in choosing the infant feeding method.

Procedure

A website was created (web url is lindyboate.com) with the help of a website expert. Google sites was used to design the website and a google domain was purchased to publish the website. Breastfeeding educational materials were populated on the website. The intention of the QIP was discussed with the postpartum nurses and the web address was given to the nurses to review the educational material on the website. The maternity nurses were encouraged to incorporate the acquired knowledge in their patient education throughout patients' stays in the hospital. Before patients' education, mothers were asked about their feeding plans, the reason behind that feeding plans, and if there were any cultural reasons for choosing the feeding plan. The nurses provided breastfeeding education and provided all the necessary breastfeeding support needed such as helping to position infants for breastfeeding and how mothers can get a good latch from their infants throughout the patient's hospitalization. The nurses were encouraged at least once a week to participate and incorporate the acquired knowledge into their patient education throughout the mother's hospital stay.

Ethical Considerations/Protection of Human Subjects

The DNP project was initiated after the University of Massachusetts, Amherst Internal Review Board (Appendix E) approval. All participants were protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA) which protects the privacy of patients' health information. The data obtained did not include any patient identifiers. The data was safely stored in a password-protected file on the DNP student's laptop. The risk of patient participation in the QIP was the same as the standard of care received at the hospital.

Data Analysis

Descriptive statistics were used to analyze the data of the QIP. SPSS version 28 was used to get frequencies and percentages of the racial/ethnic groups and the infant feeding plans.

Results

Nursing Education Intervention

One of the expected outcomes of the QIP was for at least 60% of the maternity nurses to visit the website and review the education at the website and self-report incorporation of the acquired knowledge into patient education at the hospital. This was met; 70% of the nurses self-reported that they visited and reviewed the educational materials at the website and incorporated them into their patients' education.

Patient Education Intervention

75 patients participated in the project. Table 1 shows the racial differences in the patients involved in the project. Eighteen patients (24%) were African Americans, thirty-two patients (42%) were Hispanics, twelve patients (16%) were African immigrants, four (5.3%) were Asians, and nine patients (12%) were people from the Middle East and India.

Table 1

Demographics: Race/ethnicity

	Frequency	Percent	Cumulative Percent
African American	18	24.0	24.0
Spanish	32	42.7	66.7
African	12	16.0	82.7
Asian	4	5.3	88.0
Middle East	9	12.0	100.0
Total	75	100.0	

The different racial groups of the patients were coded with numbers in SPSS. Based on the analysis from SPSS, Patients' feeding plans at admission were as follows; 36 participants (48%) had the intention to exclusively breastfeed, 23 participants (30%) had the intention to breast and formula feed their infants, and 16 participants (21%) had the intention to exclusively formula feed their infants (see table 2).

Table 2

Mothers' feeding plan at admission

	Frequency	Percent	Cumulative Percent
Breastfeeding Only	36	48.0	48.0
Breast and Formula feeding	23	30.7	78.7
Formula Feeding Only	16	21.3	100
Total	75	100	

Patients with the intention to exclusively breastfeed decreased from 36 (48%) at admission to 26 (34.7%) resulting in a decrease of 10 (13.3%) at discharge. Patients with the intention to breast and formula feed their infant increased from 23 (30.7%) at admission to 35 (46.7%) at discharge resulting in an increase of 12 (16%). Also, patients with the intention to formula feed exclusively decreased from 16 (21.3%) at admission to 10 (13.3%) resulting in a decrease of 6 (8%) at discharge. 4 patients (5%) represent conditional feeding (patients who had

to formula feed due to medical reasons). Table 3 shows the feeding plan for the patients during discharge.

Table 3

Mothers Feeding Plan at Discharge

	Frequency	Percent	Cumulative Percent
Breast Feeding only	26	34.7	34.7
Breast and Formula Feeding	35	46.7	81.3
Formula Feeding only	10	13.3	94.7
Conditional Formula Feeding	4	5.3	100
Total	75	100	

Discussion

The quality improvement project (QIP) occurred at the postpartum unit in a small Catholic hospital in the Baltimore area between November 2021 to February 2022. The target population was racial/ethnic minority healthy couplets (mother and baby) rooming together in the postpartum unit. The stakeholders include facility administrators, staff, patients, community dwellers, and public health personnel.

The hospital has a birthing center and a 25-bed postpartum unit where pregnant women deliver and receive postpartum care for a minimum of 24 hours before discharge. The quality improvement project involved 75 couplets. Patients' feeding plans were obtained during patients' admission and discharge from the postpartum unit. The participants' admission and discharge feeding information was compared to check if there was any effect of patient education on patients feeding plans.

The expected outcome to increase the intention to breastfeed by at least 10% was not met. The intention to breastfeed did not increase from admission to discharge. Intention to Breastfeeding in general increased from pre-intervention to post-intervention period. Participants who had the intention to breast and formula feed increased from 30.7% pre-intervention to 46.7% post-intervention whereas the intention to exclusive formula feed decreased from 21.3% pre-intervention to 13.3% post-intervention. This signifies that some participants who had the intention to formula feed exclusively added breastfeeding to their feeding plan.

The answers patients gave to the verbal question asked during admission indicated that the low rate of patients' intention to breastfeed among racial/ethnic minority women was in part due to factors such as patients' birthing plans, readily available infant formula, cultural demand for the patient, and patient's knowledge on the benefits of exclusive breastfeeding. Some patients verbalized that they chose their feeding plans that best suit their birthing plans. Others verbalized that they planned to formula feed because formula is readily available and also, the challenges to formula feed are minimal. Some patients also verbalized that it is a cultural belief that a big baby is a healthy baby. They further explained that exclusively breastfed babies are not healthy because they do not gain enough weight to be healthy. They justified that because breast milk is not as heavy as formula to fill infants and that is why breastfed infants don't gain enough weight. It was deduced that most of the reasons behind low intention to breastfeed among racial/ethnic minority women are lack of knowledge of the benefits of breastfeeding to both mother and baby.

Many patients come to the birthing center with their infants feeding plans already planned to suit their personal living situations. Breastfeeding education and early breastfeeding initiation helped many patients to breastfeed their infants. The intention to exclusive formula feeding rate decreased from 21.3% pre-patient intervention to 13.3% post-patient intervention;

signifying that patients' education had a positive influence on patients' feeding plans. Early initiation and support of breastfeeding have been shown to help to increase the breastfeeding rate among racial/ethnic minority populations (Li et. al, 2019). It was noted that breastfeeding education can have a great patient influence if done during the prenatal period when patients are yet to make feeding plans.

Many racial/ethnic minority women choose to formula feed their infants due to the fact that formula is readily available when needed. Most patients verbalized that they planned to formula feed their infants because breastfeeding is difficult, inconvenient, and the formula is free and readily available at the hospital when needed. Also, many of the families at this hospital are eligible for free formula through the Women, Infants, and Children (WIC) program. Through the QIP, it was deduced that most patients who do not qualify for the WIC program readily accepted to add breastfeeding to their feeding plans after breastfeeding education was provided. This signifies that the low breastfeeding rate among racial/ethnic minority women is in part due to the availability of free formula. The hospital provides free lactation services after discharge over the phone to patients. Patients were provided with information on how to get access to these services post-discharge.

The cultural demand of the patients is one influencing factor of patients' feeding plans. People from different backgrounds usually adhere to their cultural values and practices, and breastfeeding is no exception (Gonzalo, 2021). Many racial/ethnic minority patients breast or formula feed their infants due to their cultural demands. Many patients of Middle Eastern and African immigrants had the feeding plan to exclusively breastfeed because their culture demands mothers to exclusively breastfeed their infants because that is the ultimate way to feed a newborn. (Franco-Antonio, 2020; Gonzalo, 2021). Many Hispanic patients had the intention to

initiate breastfeeding but plan to add formula feeding to their infant feeding plans because it is their cultural demand to feed the infant well for the infant to gain enough weight to be healthy. It is believed in the Hispanic community that a big baby is a healthy baby and that mothers always want to formula feed their infant even if they have enough colostrum. Most Hispanic patients have the belief that breast milk is not heavy enough to satisfy the infant and help the infant gain appropriately. They also believe that infants do not get enough during breastfeeding since they cannot tell how much breastmilk the infant gets during breastfeeding but they can tell how much the infant takes when formula-feed. Understanding the individual's cultural perception and traditional values, then providing them with the necessary nursing support and education, will promote breastfeeding and discourage formula feedings among racial/ethnic women (Gonzalo, 2021)

Patients' knowledge about breast and formula feeding is a contributing factor to patients' feeding plans. Many patients did not know much about breastfeeding benefits to both mother and baby and the risks of formula feeding. Many patients verbalized that they did not know that mothers had any benefits from breastfeeding. Most patients lack knowledge about breastfeeding and had the misconception that formula is equivalent to breastmilk (Franco-Antonio, 2020; Gallo et al., 2019). Receiving breastfeeding education helped most patients to understand that there is the need to breastfeed and then added breastfeeding to their feeding plan. Some patients with the intention to exclusively breastfeed had to add formula to their infant feeding due to medical reasons such as infant excessive weight loss, increased jaundice level, and infants' inability to latch properly due to the mother's flat or short nipple.

Barriers

Lack of commitment from the nurses was one of the setbacks for the QIP. It was a little challenging to control the nurses' commitment to the QIP. It was difficult to know whether the nurses visited the website and completed the education since they did that at their own convenience. Another barrier was a large nurse turnover at the project site which resulted in the exclusion of labor and delivery (L&D) nurses from the project. The L&D unit experienced a huge nurse turnover during the COVID-19 surge. Due to the shortage of nurses in the labor and delivery unit, the unit relied mostly on traveling nurses who were not committed to the project.

Limitations

One major limitation of the project was that there was no pre-intervention data to show admission vs discharge feeding practices/intentions of patients to compare the project's results. In the future, breastfeeding education for mothers should be done during the prenatal period because patients are usually exhausted and anxious to be educated on new materials.

Conclusion

Breastfeeding has always been the very best way of feeding infants. However, the number of mothers who practice exclusive breastfeeding for the first six months, as recommended, is decreasing. Racial/ethnic minority women are less likely to begin and maintain breastfeeding for the recommended six months compared to white women, and that has resulted in higher health issues and increased mortality rate among racial/ethnic minority children. The disparities in breastfeeding duration among racial/ethnic minority women result, in part, from lack of support from maternity nurses. The review of the literature shows that nurses can help to promote and support exclusive breastfeeding if they get the necessary education and training needed to promote breastfeeding (Cunningham et al., 2018).

The DNP student created a website for an educational intervention to provide breastfeeding education to maternity nurses. This is to provide them with the knowledge they need to support postpartum breastfeeding mothers. The QIP brought to light that it would be necessary to provide breastfeeding education to patients during the prenatal stage when patients are yet to make their birthing and feeding plans. Patients are mostly exhausted and have increased anxiety after going through the birthing process and this makes it challenging to educate. Also, it is difficult for patients to make changes to their birthing and feeding plans that they have made to suit their personal living conditions.

The expected outcome to increase the rate of intention to breastfeed at the hospital by at least 10% was not met but overall, the intention to breastfeed increased from admission to discharge. Participants with the intention to breast and formula feed increased from 30.7% at admission to 46.7% at discharge whereas the intention to exclusive formula feeding rate decreased from 21.3% pre-intervention to 13.3% post-intervention. This signifies that some participants who had the intention to formula feed exclusively during admission added breastfeeding to their feeding plan. The findings of the project are limited due to the lack of pre-intervention data to which the project results could be compared.

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Appendix A

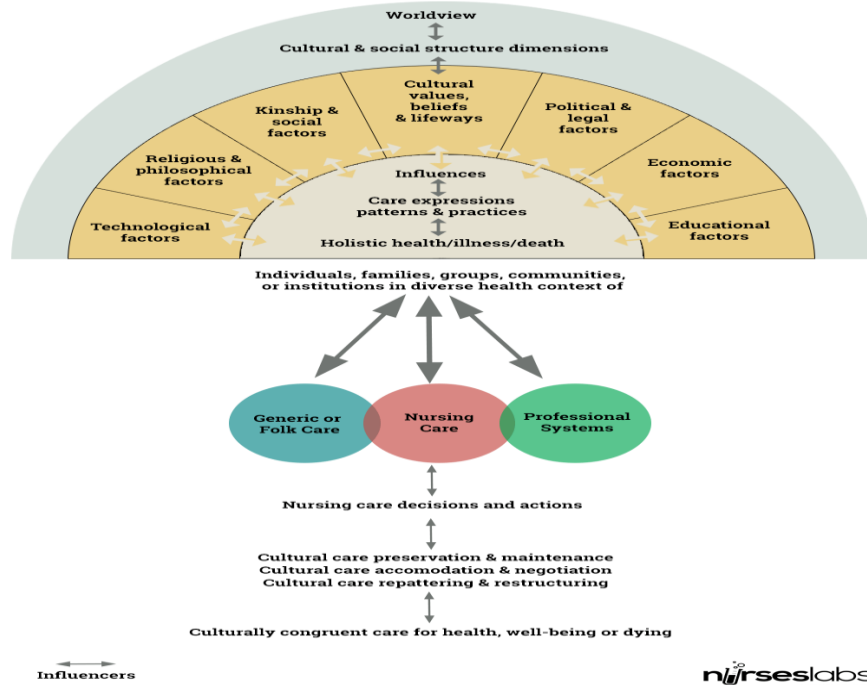
The Ten Steps to Successful Breastfeeding in Baby-Friendly Hospital Initiative (BFHI)

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in the 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 are separated from their infants.
6. Give infants no food or drink other than breast-milk, unless medically indicated.
7. Practice rooming-in – 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 birth center.

Appendix B

Madeleine Leininger's Transcultural Nursing Model

Madeleine Leininger's Transcultural Nursing The Sunrise Enabler to Discover Culture Care Sunrise Model



Appendix C

Timeline

Task	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April
Educate nurses on the intentions and need for the project	IRB approval Create a website Pre intervention assessment on nurses underlying breastfeeding/formula feeding perception.	Website with nursing education opens	Nursing Education continues	Nursing education continues	Nursing education continues	Nursing education continues		
Intervention; Evaluation	Complete Pre-intervention data collection for nursing education		Complete post-intervention data for nursing education	Complete post-intervention data for nursing education	Complete post-intervention data for nursing education	Complete post-intervention data for nursing education		
Post assessment of nurses' involvement in the project Post assessment of the effect of patient education				Assessment of nurses' involvement in the project Post education effects on breastfeeding	Assessment of nurses' involvement in the project Post education effects on breastfeeding	Assessment of nurses' involvement in the project Post education effects on breastfeeding	Assessment of nurses' involvement in the project Post education effects	

on breastfeed ing							on breastf eeding	
Analysis of outcomes							Result s presen ted to local provid ers	
Results presented to local providers							Analy sis of nurses knowl edge Post educat ion. Analy sis of educat ional effects on breastf eeding	Analy sis of nurses knowl edge Post educat ion. Analy sis of educat ional effects on breastf eeding

Appendix D

Cost and Benefit Analysis

Item	Cost
<i>Computer Information System</i>	
Laptop equipped with Microsoft Software	\$2100.00 (Not included in the total cost, owned by the DNP student)
Printer	\$500.00 (Not included in the total cost, own by the DNP student)
Printing paper 8.5x11 (500 sheets)	\$10.00
Ink Cartridge	30.00
<i>Personnel</i>	
DNP candidate as project investigator	3 credits (\$750 per credit)=2,250.00 (Not included in the total cost. Considered educational benefit to the student)
<i>Transportation/travel</i>	
Travel/commuting expenses to/from practice setting (car, gas, parking)	\$20 round trip cost x 3 trips =\$60
<i>Project site space for program implementation</i>	
Meeting space (located within practice setting)	No cost (Available free of charge within practice setting i.e. Lactation consultant office)
<i>Total cost/Expenditure</i>	
Total Estimated Cost	\$ 4,950.00
Total Estimated Cost for project (minus costs of services volunteered)	-\$4, 860.00
<i>Total Actual Costs</i>	<i>\$90.00 (Final cost of project implementation)</i>

Appendix E

UMASS Human Subject Determination Approval Letter

UMassAmherst

Human Research Protection Office

Mass Venture Center
100 Venture Way, Suite
116
Hadley, MA 01035
Telephone: 413-545-3428

Memorandum – Not Human Subjects Research Determination

Date: June 10, 2021

To: Linda Boateng, College of Nursing

Project Title: *Promoting exclusive breastfeeding among ethnic/racial minority women for the first six months*

HRPO Determination Number: 21-111

The Human Research Protection Office (HRPO) has evaluated the above named project and has made the following determination based on the information provided to our office:

- The proposed project does not involve research that obtains information about living individuals [45 CFR 46.102(f)].
- The proposed project does not involve intervention or interaction with individuals OR does not use identifiable private information [45 CFR 46.102(f)(1), (2)].
- The proposed project does not meet the definition of human subject research under federal regulations [45 CFR 46.102(d)].

Submission of an Application to UMass Amherst IRB is not required.

Note: This determination applies only to the activities described in the submission. If there are changes to the activities described in this submission, please submit a new determination form to the HRPO prior to initiating any changes. ***Researchers should NOT include contact information for the UMass Amherst IRB on any project materials.***

A project determined as “Not Human Subjects Research,” must still be conducted ethically. The UMass Amherst HRPO strongly expects project personnel to:

- treat participants with respect at all times
- ensure project participation is voluntary and confidentiality is maintained (when applicable)
- minimize any risks associated with participation in the project
- conduct the project in compliance with all applicable federal, state, and local regulations as well as UMass Amherst Policies and procedures which may include obtaining approval of your activities from other institutions or entities.

Please do not hesitate to call us at 413-545-3428 or email humansubjects@ora.umass.edu if you have any questions.

Iris L. Jenkins

Iris L. Jenkins, Assistant Director
Human Research Protection Office