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Prenatal Education for Black Mothers and Their Support Persons as an Intervention for Improving Initiation of Breastfeeding

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Prenatal Education for Black Mothers and Their Support Persons as an Intervention for Improving Initiation of Breastfeeding

A DNP Project Submitted to the
Graduate Faculty
of Jacksonville State University
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Requirements for the Degree of
Doctor of Nursing Practice

By

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Abstract

Background: The benefits of breastfeeding are commonly known; however, the rates of exclusive breastfeeding among the Black community are less than those of other ethnic groups. Providing breastmilk or formula to an infant is an individual decision. Influential factors such as cultural background, employment status, socioeconomic status, level of education, and availability of support from family members and health care providers correlate with the method a mother chooses to feed her infant. Increasing breastfeeding initiation immediately after birth is a necessary precedent for uptake in the exclusivity of breastfeeding.

Purpose: This Doctor of Nursing Practice project aims to improve prenatal lactation education participation of Black mothers and their support persons and improve exclusive breastfeeding rates within the first 48 hours of life.

Methods: Black patients were invited to participate in a free prenatal lactation education course with their support person. The class was delivered virtually. The instructor was an International Board Certified Lactation Consultant (IBCLC). Tools utilized included the Infant Feeding Intentions scale, evidence-based breastfeeding material, Survey Monkey, DocuSign and a data tracking spreadsheet. Data collected from the electronic health record (EHR) included the mother's stated preference for feeding, actual type of feedings received, infant's location, and estimated gestational age. Investigators compared the breastfeeding rates of participants to the previous rates in 2021.

Results: There was no statistical difference between mothers who received prenatal lactation education with a support person compared to those who did not receive prenatal lactation education with a support person.

Conclusion: Although this project did not show an increase in exclusive breastfeeding among mothers who received prenatal lactation education with a support person, it did reflect an increase in mothers who provided exclusive breastmilk to their infants who were separated due to transfer to the neonatal intensive care unit (NICU). Those mothers were given access to electronic breast pumps and milk storage supplies while simultaneously receiving education on how to utilize the pump and the importance of breastmilk from the NICU team. This is an incidental finding which warrants further investigation.

Keywords: breastfeeding, Black mothers, support persons, prenatal education.

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I would like to express my gratitude to the faculty of Jacksonville State University for their instruction and support during this project. The journey to earn a Doctor of Nursing degree has been a valuable learning experience that I will use to create better patient outcomes and provide a higher quality of care in my advanced practice. I am especially grateful for members of the DNP team who supported the project. Dr. Arlinda Wormley and Dr. Lori McGrath took great measures to ensure this project was successful. Dr. Elizabeth Sahlie served as my preceptor, and I will always admire her service to support mothers and infants in the community. Rence Cochran was a gracious with his assistance of statistical analysis.

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Prenatal Education for Black Mothers and Their Support Persons as an Intervention for Improving Initiation of Breastfeeding.

The benefits of breastfeeding are commonly known; however, the rates of exclusive breastfeeding among the Black community are less than those of other ethnic groups. The overall breastfeeding rate nationally is 84%, and the breastfeeding rate in Alabama is 59%. White women in Alabama have a 77% breastfeeding rate compared to 56% for Black mothers. The United States infant mortality rate for 2019 was 5.6%; comparatively, the rate for Alabama was 9.53% (Centers for Disease Control and Prevention [CDC], 2021a). Breastfeeding is associated with improved outcomes for both mother and infant.

This project aims to address lower breastfeeding initiation rates and exclusivity by Black mothers. Lower breastfeeding initiation rates will lead to lower rates of exclusive feeding of breastmilk. Optimizing education and support for the mother can increase her confidence in providing adequate nutrition for her infant. Educating support persons will reduce the familial concern of inadequate nutrition for the infant while increasing maternal support.

Background

According to the American Academy of Pediatrics (AAP, 2021), breastfeeding is recommended as the sole source of nutrition for infants for about 6 months of age and can be continued for as long as both mother and baby desire it. The decision to breastfeed offers long-term benefits for both mother and baby. Mothers have a lower risk for high blood pressure, type 2 diabetes, ovarian cancer, and breast cancer. Infants have reduced risks of asthma, obesity, type 1 diabetes, severe lower respiratory disease, acute otitis media, sudden infant death syndrome, and necrotizing enterocolitis for preterm infants (AAP, 2021).

Health Risks

Formula supplementation can undermine a mother's confidence in her ability to breastfeed and inhibit lactogenesis. For optimal milk supply, mothers should feed their infants when they demonstrate hunger cues. This frequent feeding pattern will stimulate the mother's milk supply while meeting the newborn's metabolic needs. Feeding formula during this critical period reduces regular breast stimulation, which delays lactogenesis and further inhibits the milk supply (CDC, 2021b). Supplementing with formula unnecessarily in the first two days of life can lead to a pattern of regular supplementation because of low supply. Infrequent feeding at the breast continues to decrease stimulation and supply. As a result of this cyclical pattern, the mother eventually discontinues her efforts to provide breastmilk. Formula feeding is questioned because it has been noted, "Among women intending to exclusively breastfeed, in-hospital formula supplementation was associated with a nearly 2-fold greater risk of not fully breastfeeding days 30-60 and a nearly 3-fold risk of breastfeeding cessation by day 60, even after adjusting for strength of breastfeeding intentions," (Chantry et al., 2014, p. 1339). Maternal perception of low milk supply is a common reason for discontinuation of breastfeeding (Chantry et al., 2014). Prenatal education of both the mother and her support person can increase knowledge of infant feeding patterns and signs of adequate milk intake, reducing the perception that supplemental feeding with formula is necessary.

Current Plans to Encourage Breastfeeding

Hospitals offer a variety of platforms to provide education on breastfeeding. The formats vary but may include a prenatal visit with a lactation consultant, counseling from health care providers, community education classes for expecting mothers, and visual materials that market the benefits of breastmilk. Other support platforms include breastfeeding support groups offered

within the community. New mothers and expectant mothers who are interested in breastfeeding can attend support groups on a regular schedule. Despite these offerings, the initiation and duration of breastfeeding among the Black population is lower than those of other races.

Needs Analysis

The overall breastfeeding rate nationally is 84 %, and the breastfeeding rate in Alabama is 59% (CDC, 2021a). Although the facility of implementation incorporates most of the Baby-Friendly Hospital Initiative's Ten Steps for Successful Breastfeeding, rooming-in is not mandated. Mothers are encouraged to room in to learn to recognize and respond to infant feeding cues. This practice has increased mother-infant bonding, decreased infant stress, and improved early exclusive breastfeeding (CDC, 2021b).

Problem Statement

Low breastfeeding initiation is a problem that disproportionately affects Black infants and Black mothers. Healthy People 2030 has established an objective to increase the proportion of infants exclusively breastfed through age 6 months. The identified target for 2030 is 42.4% (CDC, 2021a). The most recent data reflects a baseline of 24.9 % of exclusively breastfed infants for the first 6 months of life (CDC, 2021a).

The question answered through this project was among postpartum Black mothers (P), does including support persons in prenatal breastfeeding education (I), as compared to no education with support persons (C), increase exclusive breastfeeding of full-term, healthy infants during the first 48 hours of life (O).

Aims and Objectives

The overarching aim of this project were:

1. Improve exclusive breastfeeding among Black mothers while hospitalized during the immediate postpartum period.
    a. Improve both the mother's and the support person's knowledge of the benefits of breastmilk as evidenced by early adoption of breastfeeding in the first two days of life.

Review of Literature

A literature review was performed with the following considerations: (a) breastfeeding among Black women: and (b) interventions to increase breastfeeding initiation among Black women. The results discovered are presented here.

The search included the key terms breastfeeding, initiation, and Black mothers. Limitations included full text and scholarly peer-reviewed journals, resulting in 368 articles. Databases included Academic Search Premier, Medline, Health Source: Nursing/Academic Edition, Gale Academic One File, and Vocational and Career Collection. The search was limited to articles published between 2015 and 2022, which reduced the findings to 130 pieces. Additional limitations included limiting material type to academic journals and geography of the United States, resulting in 14 articles. Irrelevant content was excluded, narrowing the search further. References of selected papers were also searched and evaluated for application to the study question. The pieces chosen for review included qualitative studies, guideline suggestions, and literature reviews.

Some findings in the review of literature are identified in this section. Of the qualitative studies reviewed, common themes explored included which interventions were effective on a

mother's decision to breastfeed and those which did not. Other articles had reasons for positive deviance for both initiation and long-term breastfeeding and breastfeeding concerns and shared experiences of Black mothers (Gross et al., 2017).

Many women reported breastfeeding information was provided by health care providers. Women said that their decision to breastfeed was indeed impacted by advice received from their health care providers, but the type of information varied by type of health care provider. For example, Cottrell and Detman (2013) reported women were asked by their prenatal health care providers what kind of feeding they planned to use, but no opportunity to discuss details occurred. Some mothers reported having more in-depth conversations during visits with counselors in the office of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). They did receive information on breastfeeding from other sources such as printed materials such as pamphlets or flyers (See appendix A) and prenatal classes.

Barbosa et al. (2016) identified common denominators among positive deviants, who they identified as individuals practicing beneficial behaviors despite having a high risk for unhealthy behaviors. Some common factors include a higher level of education, a strong sense of self-efficacy, and positive interactions with health care providers such as WIC nutritionists and peer counselors. Mothers did report more detailed information was obtained from providers who came to see them during their hospitalization. Both Gross et al. (2017) and Barbosa et al. (2016) reported that the timing of the decision to breastfeed during the prenatal period correlated with increased success with both initiation and exclusivity. Mothers were more likely to receive staff support with positioning and latch if they attempted to breastfeed while in the hospital.

Breastfeeding-friendly hospital initiatives are known to increase breastfeeding initiation and duration and reduce racial disparities regarding the use of breast milk among Black women

(Petit et al., 2021). According to the CDC (2021a), 16.4% of infants in Alabama are supplemented with formula within the first two days of life. One of the 10 steps of the baby-friendly hospital initiative to promote successful breastfeeding is to avoid providing any food or fluid other than breastmilk unless medically necessary (CDC, 2021b). Among the articles examined, other interventions correlated with increased initiation included prenatal participation in WIC (Petit et al., 2021; Chapman & Perez-Escamilla, 2012; DeVane-Johnson et al., 2017). Group prenatal classes, education of support persons, and attending specific appointments to learn more about breastfeeding with providers and lactation counselors also increased initiation, exclusivity, and duration of breastfeeding (Chapman & Perez-Escamilla, 2012). Doula support provided to mothers during the postpartum period, access to lactation consultant support, WIC peer counselors, higher education levels, and residing in neighborhoods that demonstrated collective community support all contribute to the initiation, exclusivity, and long-term duration of breastfeeding among Black women (Petit et al., 2021; Chapman & Perez-Escamilla, 2012; DeVane-Johnson et al., 2017; Villalobos et al., 2021; Barbosa et al., 2016).

The reduction of health risks provided by breastmilk correlates with health disparities in the Black community. Black women have more instances of hypertension and obesity with increased complications during pregnancy which can inhibit early breastfeeding initiation (Chapman & Perez-Escamilla, 2012). Research has shown human milk reduces an infant's risk of sudden infant death syndrome, necrotizing enterocolitis, type 1 diabetes, and other infections. Black infants are at increased risk for many of these conditions: therefore, it is vital to identify effective interventions to address breastfeeding disparities (Chiang et al., 2021).

Black women report family opinions, values, beliefs, the embarrassment of public feeding, and perceptions of the adequacy of human milk as reasons for opting to formula feed

their infant. Interestingly, health care provider encouragement and education on the superiority of human milk did not always correlate to increased breastfeeding rates in Black women. Social influences such as socioeconomic status, employment status, and variations in the methods and quality of educating mothers on the benefits and techniques of overcoming barriers to breastfeeding were identified as barriers to increased breastfeeding rates (DeVane-Johnson et al., 2017).

Theoretical Model

The Social Learning Theory (SLT), proposed by Albert Bandura, guides this project, and provides a framework for observing and translating evidence into practice. The theory considers how environmental and cognitive factors converge and influence human learning and behavior (McLeod, 2016). Observational learning, modeling, imitation of behaviors and attitudes, and emotional reactions of others are considered vital components of SLT. Humans form behaviors by modeling people of influence, such as family members, peers, and other individuals viewed with regard. These behaviors are ingrained throughout a lifetime, imitated, and reinforced with affirmation or punishment. These reinforcements can lead to a change in behavior; if the perceived rewards outweigh the cost, the behavior is more likely to be imitated (McLeod, 2016).

Methodology

Project implementation dates ran from January 28, 2022, to March 28, 2022. The study was approved by the Jacksonville State University Institutional Review Board. The project addressed the question, among postpartum Black mothers, does including support persons in prenatal breastfeeding education, as compared to no education with support persons, increase exclusive breastfeeding of healthy full-term infants during the first 48 hours of life? The expected number of participants was 20-30 mothers. The actual number of participants was

seven mothers. Black patients scheduled to deliver at the hospital were invited to participate in a free prenatal lactation education course with their support person. Participant consent was obtained from all participants prior to attending the class. The class was delivered via Google Meet and instruction by an International Board Certified Lactation Consultant (IBCLC). Tools utilized included the Infant Feeding Intentions scale (see Table 1), Injoy's Understanding Breastfeeding course, and a data tracking spreadsheet (see Table 2). The instructor utilized a PowerPoint presentation developed by InJoy for educational purposes. Data collected from the EHR and class rosters during program implementation were compared to the previous breastfeeding rates in 2021 and 2022 (See Figures 1 and 2). Participants were guaranteed confidentiality and completed consent forms (see Appendix B) via DocuSign.

Setting

The primary investigator initiated the project in the lactation department of an urban hospital in central Alabama. A local faith-based 300-bed hospital, part of a national health care system, served as the project implementation site. The facility has a long history of recognition, including being named the "Best Hospital to Have a Baby," "Best Birthing Suites," and "Favorite Hospital." The hospital offers various classes to the community, including prenatal lactation classes and postpartum support groups for breastfeeding mothers. The average number of total deliveries for the hospital is around 3000 each year. The average number of Black mothers delivering at the hospital is 850 per year.

Population

The unit of analysis in this Doctor of Nursing Practice (DNP) project is postpartum Black women. The intervention subgroup will include a support person. The mother, infant, and support person will be considered one unit. The mother-infant relationship is a dynamic

interaction built upon each other's ability to feed at the breast successfully. The comparison subgroup unit will only consist of mother and infant because including support persons in prenatal education was not conducted during the previous year. The project's purpose does not explore details around each feeding, but only if the mother exclusively fed her infant breastmilk during the first 48 hours of life. The two subgroups will consist of Black mothers who received prenatal lactation education with their support persons and Black mothers who did not receive education with a support person.

Inclusion/Exclusion Criteria

The inclusion criteria consisted of Black women who delivered between 37- and 42-weeks' gestation and delivered during the project's implementation dates of January 28, 2022, through March 28, 2022. Women were not excluded if they did not plan to breastfeed or were unsure of the desire to provide formula or mother's milk. Participants agreed to attend a prenatal lactation class with their support person. Additionally, their infant would need to be healthy and residing in the well-baby nursery with no medical conditions which warrant specific supplemental feeding requirements. Support persons were not defined as a particular relationship.

The exclusion criteria included women of other races than Black and younger than 19 years. Additional exclusion criteria were women who delivered before 37 weeks. Other reasons for exclusion were infants transferred to the NICU and infants who required supplemental feeding per medical orders. Examples of supplementary feeding requirements included infants who demonstrated hypoglycemia and required formula to correct their blood sugar.

Recruitment

Recruitment was conducted by the class instructor and nurse navigators during the eight weeks of implementation. A script for recruitment was provided, as well as flyers (see Appendix B) and consent forms. Nurses who interacted with pregnant patients for preadmission purposes recruited mothers who were eligible to participate. Nurse navigators met with patients during their third trimester and provided education on available services. Patients who met eligibility were informed of the project and extended an invitation to join. Patients who had previously opted to receive emails from the hospital received information on the project's details. The primary investigator distributed informational flyers to OB/GYN offices located in the hospital who shared them with eligible patients presenting for prenatal care visits.

Consent

The class instructor and nurse navigators obtained participant consents. The consent was emailed to the participant, completed, and returned to the instructor using DocuSign. The instructor explained the consent to participate and emphasized it was voluntary and participants could withdraw at any time. Questions were addressed by the instructor during recruitment and prior to the class. The consent stated that this was a student-run project to improve the initiation and exclusivity of breastfeeding among Black mothers. Participation was limited to mothers delivering at the site of implementation. The project's primary investigator (PI) did not influence enrollment or participation. Staff nurses recorded feeding methods of the participants using the electronic health record. The staff nurses received information that the unit and hospital management had no influence or involvement in this project. It was underscored that the PI would maintain privacy and confidentially of all identifiable collected data.

Design

The project was a quality improvement initiative using a casual comparison design to identify Black mothers' initiation and exclusive breastfeeding rates. Rates of initiation and exclusivity during the implementation dates were compared to those of the previous year. Tools utilized included an evidenced-based prenatal lactation class delivered via Google Meet. A certified lactation educator narrated the PowerPoint presentation. The hospital purchased the PowerPoint presentation from a national health education supplier that ensures all material is evidence-based. Additional tools included the Infant Feeding Intentions Scale delivered by Survey Monkey. The primary investigator completed CITI training (See appendix C).

Chart Review

Nursing informatics conducted chart reviews. The EHR was reviewed for the mother's stated method of feeding upon admission. Additional information reviewed included location of infant, types of feedings received during the first 48 hours of the infant's life, and gestational age. After the chart review, identifiable data such as names and medical records numbers were removed prior to data analysis. The mothers stated method of feeding upon admission was collected and compared to the infant's actual type of feeding received during the first 48 hours of life (see Figures 1 and 2). Rates of exclusive breastfeeding among Black mothers during the implementation dates in 2021 were also collected for comparison.

Risks and Benefits

First and foremost, this project observed the principles of non-maleficence and beneficence by acting in the best interest of the participants while minimizing or preventing harm. The principle of autonomy was respected by honoring participants' free choices to

participate in the project. The DNP team took great care to ensure the project adhered to all ethical standards required to protect the lactation consultants involved.

There was minimal potential risk for mothers and support persons participating in this project. The risk involved perceived guilt by the mother and privacy. The DNP team ensured the confidentiality of participants throughout the project. Benefits included increased maternal knowledge and confidence in her ability to breastfeed after discharge.

Compensation

Participants and support persons received compensation for their participation. Complimentary prenatal education and a $25 Amazon gift card were awarded to each participant and delivered electronically by email.

Timeline

Proposal development and IRB approval (See Appendix D) occurred from September 2021 to November 2021. Project implementation and data collection took place over 8-week period from January 28th to March 28, 2022. Data was compiled and analyzed by April 6, 2022. Findings were then compiled into the manuscript and submitted for approval on June 26, 2022. The project's timeline includes final dissemination and presentation given on July 15, 2022 (See Appendix E).

Budget and Resources

An estimated budget of $2000.00 included costs of instructional hours, printed invitations, postage, and participant incentives (see Appendix F). Final costs were less than expected and totaled $723.00. There were no funds contributed by grants or scholarship. Statistical analysis and editing were provided by Jacksonville State University.

Evaluation Plan

Statistic Considerations

A two-tailed t-test was performed to assess if there was a significant difference between the exclusive breastfeeding rates of Black mothers during the specified intervention dates of January 28 through March 28 of both 2021 and 2022. The rate of exclusive breastfeeding in the intervention group was also assessed. The two-tailed test was performed with Microsoft Excel and Science Statistics 2022 software. Data was provided by nursing informatics and generated from the EHR. The data included gestational age, race, mother's stated feeding preference upon admission, and the type of feeding delivered to the infant. Exclusion criteria eliminated mothers of infants transferred to the Neonatal Intensive Care Unit (NICU). Table 2 represent collected data from the intervention group. Figure 3 represents the percentages of each type of feeding received among the population during both 2021 and 2022.

Data Maintenance and Security

Password-protected software ensured data security. Nursing informatics removed patient identifying information. Statistical analysis was performed only on de-identified data shared by the primary investigator and nursing informatics. After completion of the project, the data was destroyed following hospital protocol. There were no hard copies of data stored during the duration of the project.

Results

Data analysis revealed an exclusive baseline breastfeeding (EBF) percentage for Black mothers delivering at the hospital. This percentage was calculated by establishing the sum of the EBF percentage during the project's specified dates of January 28, 2022, to March 28, 2022. The comparison EBF rate for January 28, 2021, to March 28, 2021, was 33%, and the EBF rate for

2022 was 36.5%. Therefore, the established baseline was 34.85 percent overall. This means that 65.15% of Black infants were not breastfed during the first 48 hours of life (see Figure 3). The intervention group consisted of six mothers. A total of seven mothers participated in the intervention group's prenatal class with their support person. One mother was not included because she did not deliver during the project implementation dates. None of the mothers in the intervention group were exclusive in breastfeeding during the first 48 hours of their postpartum period. Two of the mothers from the intervention group were removed from the statistical analysis because their infants had been transferred to NICU. Incidentally, the two mothers who were excluded due to NICU transfer provided exclusive breastmilk during the first 48 hours of their infant's life. This percentage would have been 33% of the control group if it were not excluded due to the infant's health status. The significance level was 0.05, and the p-value was 0.2397. Since the p-value is greater than the significance level, there was no significant statistical difference between the groups. For the power analysis, using a power of 0.8 and significance level of 0.05, the sample size for each group needed to be a minimum of 15 participants. The power of data collected was 0.052. This translates to a 5.2% chance of correctly rejecting a false hypothesis. There was no statistical difference in breastfeeding rates between mothers who attended a prenatal class with their support person and those who did not.

Results of Chart Review

The chart review consisted of evaluating the feeding methods of black mothers during the dates of implementation in 2021 and 2022. The nursing informatics nurse generated the data report. The report included all black mothers who delivered after 37.0 weeks of gestation. The information also distinguished the location of the infant as well-baby nursery or NICU. The data was filtered in an attempted to differentiate between the mother's plan for infant feeding and the

actual type of feeding the infant received. The rate of actual combination feedings in 2021 was 6% compared to 9% in 2022, which indicated a small increase in infants receiving some breastmilk. The rate of formula feeding in 2021 was 61% compared to 54% in 2022, which indicated modest decline in formula feeding (see Figures 1 and 2).

Results of Survey Responses

Each participant was emailed a link to the Infant Feeding Intentions Survey before the prenatal breastfeeding class using Survey Monkey. The response rate was 29% despite reminders sent to the participants registered for the prenatal education class. The survey consisted of five questions designed to assess the mother's feeding plan for her infant. The Likert scale responses offered five options consisting of very much agree, somewhat agree, unsure, somewhat disagree, and very much disagree. A total of two survey responses were received. Reminders to complete the survey were sent with no response from five of the participants. The results of the first question, "I am planning to only formula feed my baby (I will not breastfeed at all)," revealed both mothers very much disagreed with the statement that they only planned to provide formula for their baby. The second question asked, "I am planning to at least give breastfeeding a try," which resulted in each mother stating she very much planned to do so. The third, fourth, and fifth questions asked if the mother would be using formula or other milk at one month of age, three months of age, and six months of age. The responses were split between somewhat agree or unsure. The responses from both mothers on questions 3, 4, and 5 were split between somewhat agree and unsure.

Discussion

This project was initiated to explore effective interventions to increase exclusive breastfeeding among Black women. The primary intervention examined was prenatal

breastfeeding education of both the mother and a support person. Qualitative data and quantitative data were collected during the project to evaluate how effective prenatal breastfeeding education was when offered to more than the pregnant mother

Significant findings in this project were not found. There was no measurable change in the rate of exclusive breastfeeding in the intervention group. Although there were no statistically significant changes in exclusivity in the intervention group, other observations are worthy of attention. Two of the mothers were excluded from the group due to a transfer of their infant to the NICU. The NICU transfer was considered an exclusion because these infants are often supplemented with formula for medical reasons. The two mothers excluded were the only participants who did exclusively breastfeed their infants.

Other significant findings include the responses from the Infant Feeding Intentions Scale survey. Question 3 asks "When my baby is 1 month old, I will be breastfeeding without using any formula or other milk". All the mothers surveyed said they were not planning to use formula. The plan to refrain from formula appeared to change after the first month. Of the two participants who did respond, neither were sure if they would be breastfeeding at four weeks or beyond. These responses support an inclination to initiate breastfeeding but did not appear to show any plans for the exclusivity of breastmilk beyond four weeks of age.

These findings may indicate the need for more support in maintaining breastfeeding after the early postpartum period. The mothers who had infants transferred to NICU were given instructions on how to pump to establish milk supply after being separated from their infants. It is an essential skill for mothers who may be returning to work or who wish to share the feeding responsibility with other caregivers to learn how to establish and maintain their milk supply.

Implications for Clinical Practice

Promoting breastfeeding during the immediate postpartum period is not a new initiative. Many hospitals have adopted baby-friendly practices. The standard techniques widely used include placing the baby skin to skin with the mother as soon as possible after birth, rooming in, avoiding any foods other than breast milk unless medically necessary, and providing support to the mother during and after hospitalization. Despite these practices, Black mothers are less likely to meet the healthy people goal of exclusive breastmilk for the first six months of life. Identifying barriers which interfere with breastfeeding among Black women is essential. More research is needed to identify these barriers. The mothers in the implementation group who successfully breastfed were separated from their infants. This project did not explore what actions may have contributed to their success. One possible reason for their success was access to breast pumps and milk storage supplies. Mothers who have infants in the NICU are provided these supplies at no cost. They also likely received information from the neonatology team on how their breast milk is vital to their infant's health. These interventions may have been some of the reasons these mothers successfully provided human milk for their infants during their first two days of life. This practice could prove beneficial to mothers of healthy infants and warrants further investigation.

Implications for Health Care Policy

There are current health care policies in place to promote and protect breastfeeding. Commercial insurance policies cover breast pumps, storage supplies, and lactation support visits by certified lactation consultants to all mothers regardless of stated feeding preference. A state-operated program like Special Supplemental Nutrition Program for Women, Infant, and Children (WIC) offers similar benefits. However, they do not supply pumps or storage supplies unless the

mother has breastfed exclusively for four weeks. They will provide a pump sooner if the infant is in NICU or has another medical condition that prevents feeding at the breast. WIC encourages mothers to choose breastfeeding by offering more extended participation in the program and a significantly increased amount and variety of foods (Alabama Public Health, 2021). A policy change to provide pumps to all mothers may encourage the option of pumping to supply human milk instead of using formula exclusively.

Implications for Education

This study did not show that educating both the mother and support person during the prenatal period increased the exclusivity of breastfeeding. Although this study did not reflect the benefits of educating both parties, education is impactful in a mother's decision to try to breastfeed their infant. Mothers need the support and encouragement of their support persons during the postpartum period. Educating the support person on ways to support the mother can increase the desire and determination to succeed in overcoming breastfeeding obstacles.

The timing and delivery of education can vary widely. It is often offered prenatally and during the immediate postpartum period. There is less emphasis on educating mothers who wish to pump to provide milk instead of feeding at the breast. The increasing availability of education on the use of breast pumps may increase the number of mothers willing to pump to provide milk. The educational needs of the mother will also vary based on her previous experience, exposure, and circumstances. Educational resources to assist mothers to exist but are limited and hard to access if they work outside of the home.

Limitations

The main limitation of this study was the small sample size of the intervention group. Staffing shortages also caused limitations in the number of class offerings. Covid-19 restrictions

also prevented face-to-face recruitment of participants visiting the lactation department during prenatal hospital tours. Other limitations included classes offered online exclusively instead of options for in-person instruction due to Covid-19 restrictions. Inconsistency in charting practices regarding the type of infant feedings prevented accurate analysis of how many mothers chose to do a combination of both formula and breastmilk. This information could help identify mothers who are open to breastfeeding but feel formula feeding may be necessary. Staff buy in was minimal and recruitment was affected. This could be related to stressors such as nursing staff shortage and nurse burnout post Covid-19.

Dissemination

The findings for this project have been disseminated through the three P's: poster, presentation, and paper. The poster and presentation were submitted in an electronic format. Participants engaged in a virtual conference and breakout sessions allowed peer review. The manuscript will be placed in the Jacksonville State University Digital Commons repository system.

Sustainability

Inviting support persons to participate in prenatal education is still in place at the implementation site. The opportunity to offer more education on using breast pumps and providing breast milk in a bottle is a future area of improvement in increasing the rates of infants who receive breastmilk. Sustainability of these interventions are dependent on staff buy in. Continued staff education using evidence-based resources to increase knowledge regarding the benefits of breast milk to both mother and baby could increase staff support.

Plans for Future Scholarship

Additional opportunities exist in evaluating the effectiveness of support groups for mothers who pump to supply breast milk and groups for Black women exclusively. More research is needed to identify barriers to breastfeeding for Black women and how to increase community support for mothers in the Black community.

Conclusion

The decision to breastfeed or formula feed is an important one. Reasons for choosing one over the other can be multifactorial. Breastmilk offers many health benefits to both mother and infant. Black mothers who breastfeed their infants provide superior nutrition and serve as role models for other Black mothers. One of the reasons some mothers choose to formula feed is the need to return to work. Often Black mothers work in environments that do not have space or policies to allow for pumping or storage of milk. Other reasons include perceived support from a mother's family, romantic partner, and friends (DeVane-Johnson et al., 2017). Improving the knowledge of the benefits of breast milk within the Black community is an essential step in improving breastfeeding rates. When women witness other mothers who have breastfed, their perception of breastfeeding as a normative behavior is influenced positively. Black women are more likely to recognize other Black women as role models. Negative comments and modeling of formula feeding will harm the decision to breastfeed.

Culturally sensitive platforms to disseminate education to the Black community regarding the importance of breastmilk are needed. Improving access to breastfeeding support services and creating breastfeeding-friendly practices in public places and the work environment can send a message of support for breastfeeding mothers. Health care providers need to be mindful of the challenges mothers face and make a concerted effort to guide mothers to the appropriate

resources to support them in their breastfeeding journey. A collaborative effort between legislation, community support, and education can help improve the disproportionate use of formula among Black families and improve the long-term health of Black infants.

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Table 1

Infant Feeding Intentions Scale

	Very much agree	Somewhat agree	Unsure	Somewhat disagree	Very much disagree
1. I am planning to only formula feed my baby (I will not breastfeed at all)	0	1	2	3	4
2. I am planning to at least give breastfeeding a try	4	3	2	1	0
3. When my baby is 1 month old, I will be breastfeeding without using any formula or other milk	4	3	2	1	0
4. When my baby is 3 months old, I will be breastfeeding without using any formula or other milk	4	3	2	1	0
5. When my baby is 6 months old, I will be breastfeeding without using any formula or other milk	4	3	2	1	0

Note: The Infant Feeding Intentions Scale was developed in the Department of Nutrition at the University of California Davis. Numbers within grid represent the point value for each response. Total score = (mean of items 1+2) + (sum of items 3,4,5). Thus, total score ranges from 0 (very strong intention to not breastfeed at all) to 16 (very strong intention to breastfeed exclusively throughout the first 6 months)

Table 2

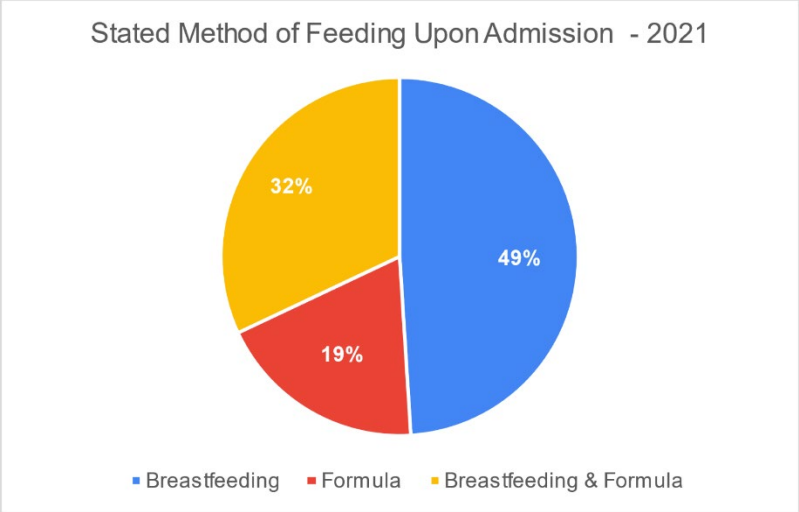
Intervention Group Data Tracking Sheet

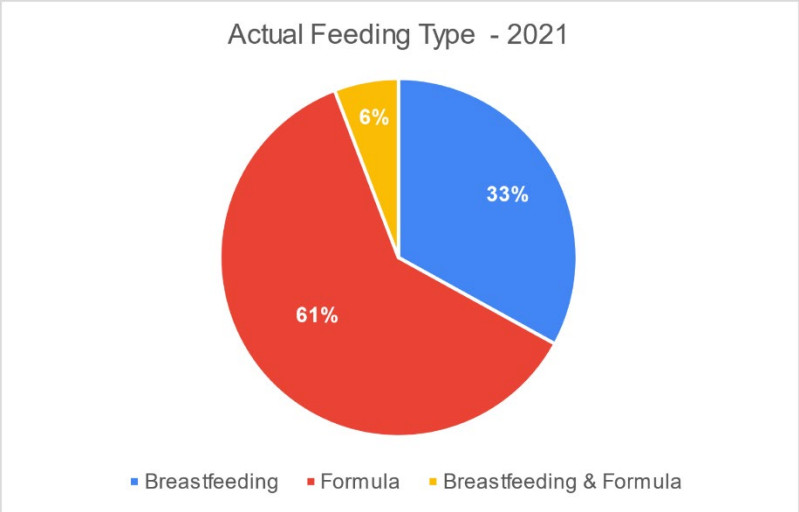
Participant	Gestational Age at Birth	Baby location	Stated Method of Feeding on Admission	Actual Feeding Type Received	Exclusive Breastfeeding during first 48 hours?
A	39.5	NICU	Exclusive Breast	Exclusive Breast Milk	yes
B	38.1	With Mother	Breast & Formula	Breast & Formula	no
C	40.6	With Mother	Breast & Formula	Breast & Formula	no
D	39.6	With Mother	Breast & Formula	Breast & Formula	no
E	38.4	With Mother	Breast & Formula	Breast & Formula	no
F	37.5	NICU	Breast & Formula	Exclusive Breast Milk	yes

Note. There was a single participant who did not deliver during the implementation dates and is not included in this Table. Participant A and F were excluded due to infant being transferred to NICU. Incidental finding noted NICU infants were the only exclusively breastfed participants.

Figure 1

Breastfeeding rates for 2021

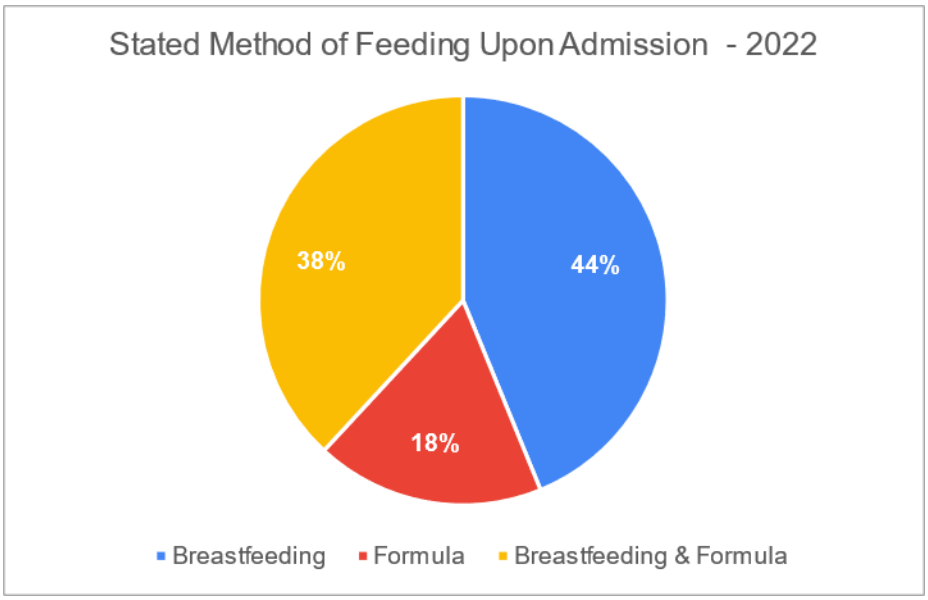




Note: The mother's stated preference for feeding, prior to giving birth, was collected by staff nurses, and noted in the electronic chart. This data is compared to the actual type of feeding the infants received during the first 48 hours of life.

Figure 2

Stated Method and Actual Feeding Type for 2022



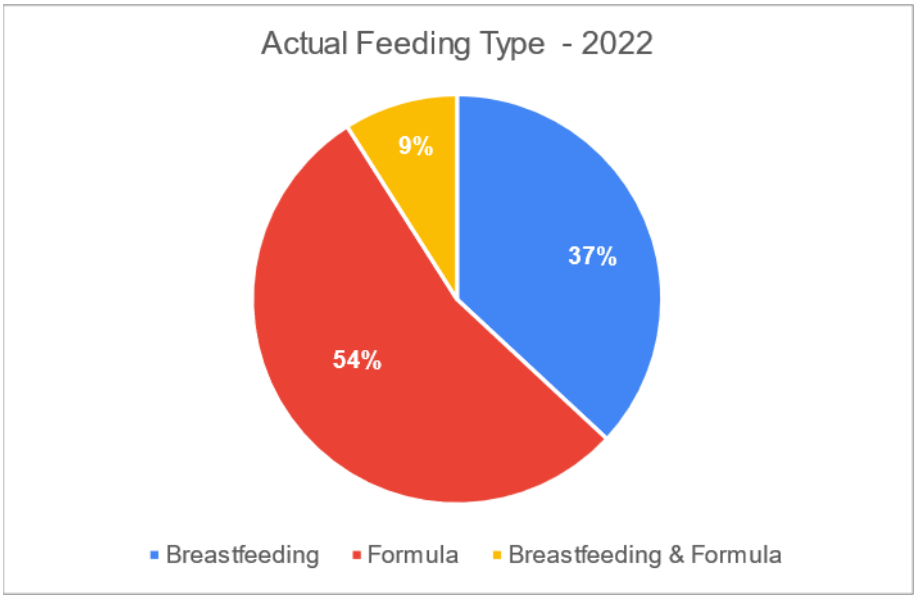
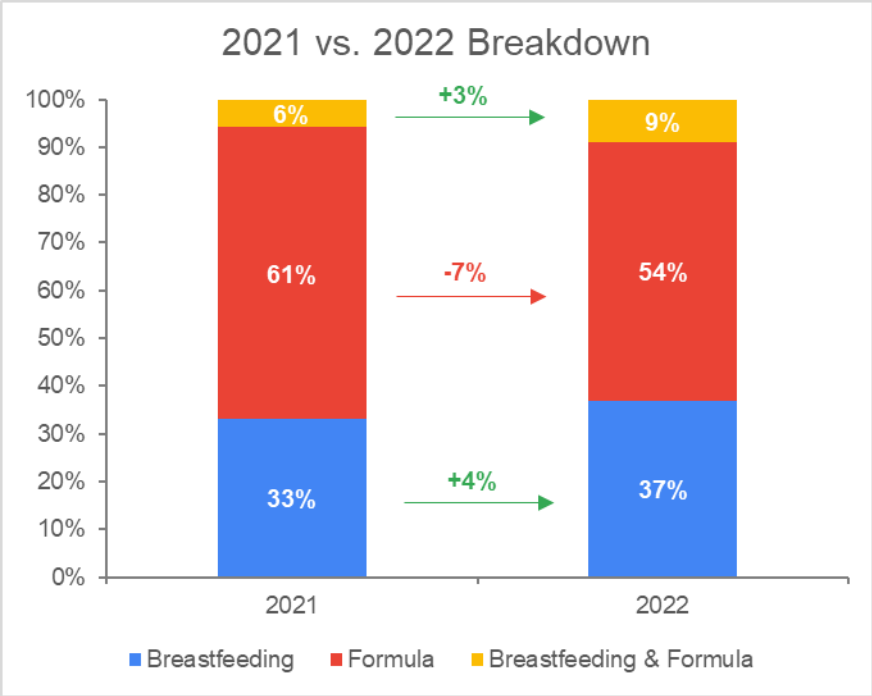


Figure 3

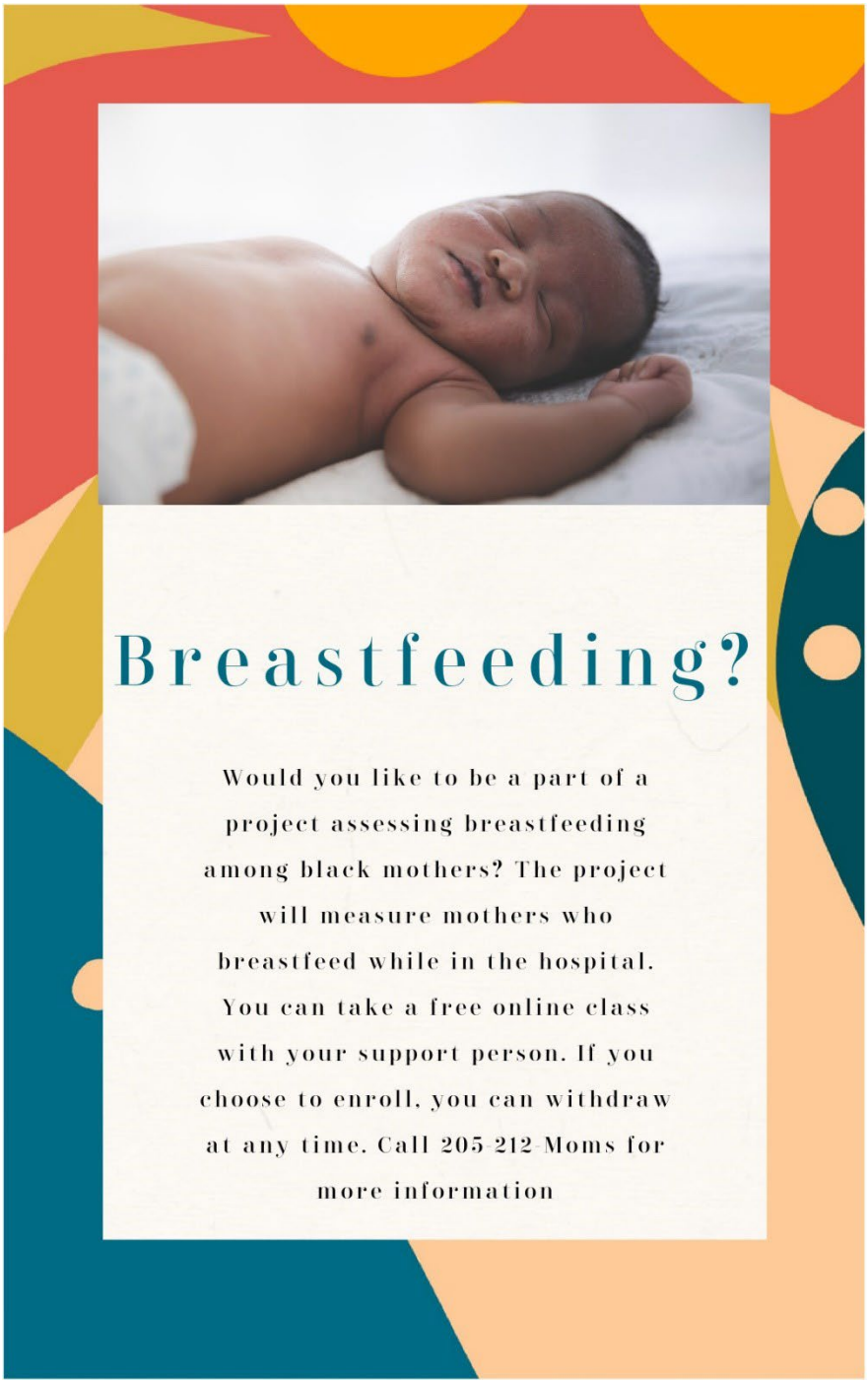
2021 vs. 2022 Breakdown of Feeding Methods



Note. Graphic representation of the percentages of each type of feeding received among the population during both 2021 and 2022

Appendix A

Recruitment Flyer



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https://www.shutterstock.com/image-photo/close-mixed-race-black-boy-ethnicity-1896818842

Appendix B

Participant Consent Form

Participant Consent Form

TITLE OF STUDY:

Prenatal Education for black mothers and their support persons as an intervention for improving initiation of breastfeeding.

Principal Investigator: Sandra King, FNP-BC, RN, IBCLC

This consent form is part of an informed consent process for a DNP student project, and it will provide information that will help you decide whether you wish to volunteer for this project. It will help you to understand what the study is about and what will happen during the project.

If you have questions at any time during the project, you should feel free to ask them and should expect to be given answers that you understand entirely.

After all your questions have been answered, you may complete the attached acknowledgement and participate in the educational session if you still wish to participate in the project.

You are not giving up any of your legal rights by volunteering for this research project.

Why is this project being done?

This project aims to address the lower rates of exclusive breastfeeding among black mothers when compared to mothers of other ethnic groups. This project will attempt to determine if evidence based prenatal lactation education delivered to mothers and their primary support persons will increase exclusive breastfeeding and provide black infants with the established benefits of breastmilk. Improving exclusive breastfeeding within the first 48 hours of life will improve the rates of continued breastfeeding after discharge from the hospital. This study will run for 8 weeks with an estimate of 20 mothers and support persons.

What will you be asked to do if you take part in this research project?

Expectant mothers will be asked to participate in an evidence based prenatal lactation class along with their support persons. The class will be offered during the third trimester and will be free of charge. The class will be delivered in a virtual format due to COVID precautions and will last approximately 60 minutes. The PI will survey breastfeeding intentions prior to the class. Feeding practices of the infant during the first 48 hours of life will be collected to establish breastfeeding exclusivity. This project will take place at Ascenion St. Vincents Birmingham.|

How will information about you be kept private or confidential?

All efforts will be made to keep your personal information in your research record confidential, but total confidentiality cannot be guaranteed. Participant information is stored on a secure hospital drive and will be kept for 3 years. Personal information such as race, age and feeding methods will be examined. Potential risks of participation may include maternal frustration or embarrassment regarding feeding decisions. Lactation staff will take steps to ensure mother and support persons have access to support throughout the hospital stay and will support any feeding decision. If participants are interested in project outcomes, they can request it via email at sandy071428@gmail.com .

What will happen if you do not wish to participate in the project or if you later decide not to stay in the project?

Participation in this project is voluntary. Suppose you do not want to enter the project or decide to stop participating. You may choose not to participate, or you may change your mind at any time. In that case, your relationship with the study staff will not change, and you may do so without penalty and without loss of benefits to which you are otherwise entitled.

You may also withdraw your consent for the use of data already collected about you, but you must do this in writing to Sandra King at sking11@stu.jsu.edu.
Who can you call if you have any questions?

If you have any questions about taking part in this project you can call the principal investigator:
Sandra King, FNP-BC, RN, IBCLC
(205) 370-7859

What are the risks or discomforts you might experience if you take part in this project?
No expected harm can occur from participating in this study. This project does not influence the care provided during the participant's hospitalization. Care providers will not be provided any information regarding survey results or patient participation in this project.

Participation in this project is of no cost to you.

Appendix C

CITI Training Certificate for Primary Investigator

CITI PROGRAM

Completion Date 18-Sep-2021
Expiration Date 17-Sep-2024
Record ID 45156453

This is to certify that:

Sandra King

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Social and Behavioral Responsible Conduct of Research
(Curriculum Group)
Social and Behavioral Responsible Conduct of Research
(Course Learner Group)
1 - RCR
(Stage)

Under requirements set by:

Jacksonville State University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w2c2ccc15-5a8d-4d13-b1af-ccccd2997617-45156453

Appendix D

University IRB Approval

JSU | INSTITUTIONAL REVIEW BOARD
JACKSONVILLE STATE UNIVERSITY

Institutional Review Board for the Protection of Human Subjects in Research
203 Angle Hall
700 Pelham Road North
Jacksonville, AL 36265-1602

November 5, 2021

Sandra King
Jacksonville State University
Jacksonville, AL 36265

Dear Sandra:

Your protocol for the project titled "Prenatal Education for Black Mothers and their Support Persons as an Intervention for Improving Initiation of Breastfeeding" 11042021 has been granted exemption by the JSU Institutional Review Board for the Protection of Human Subjects in Research (IRB).

If your research deviates from that listed in the protocol, please notify me immediately. One year from the date of this approval letter, please send me a progress report of your research project.

Best wishes for a successful research project.

Sincerely,

Lynn Garner
Associate Human Protections Administrator, Institutional Review Board

Appendix E

DNP Project Timeline

Appendix F

Project Budget

Program Expense	**Projected Cost**	**Actual Cost**
Salaries, wages *(Admin support, practitioners, statistics, or writing consultation)* *This is estimation of cost for instruction. This instruction is not an increase over normal labor costs which are already occurring.*	$500.00	$0.00
Start-up costs *(copies, charts, displays)*	$500.00	$223.00
Capital costs *(hardware, equipment)*	$0.00	$0.00
Operational costs *(heat/electricity)*	No additional cost required	$0.00
Other: Gift certificates to incentivize participation	$1000.00	$500.00
Total Project Expenses	**$2000.00**	**$723.00**