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**The Effects of Skin to Skin Contact Post C-section
on Breastfeeding Choice at Discharge**

A thesis presented

by

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in partial fulfillment of the requirements for

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with Honors

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ABSTRACT

Context: Mothers today are increasingly more likely to choose delivery by C- section rather than vaginally. With the increase in C-section deliveries comes increased concern regarding breastfeeding. Skin-to-skin contact between a mother and a newborn has been shown to have an effect on breastfeeding. **Objective:** This study investigated the effects on breastfeeding choice for mothers that delivered by C-section and received skin-to-skin contact in the Operating Room or Post-Anesthesia Recovery unit after birth. Previous studies have shown that skin-to-skin contact following birth promotes breastfeeding. Breastfeeding has been shown to provide many benefits to newborns, so it is important for healthcare providers to be aware of the best practices for promoting breastfeeding. The study looked for a correlation between skin-to-skin contact and mothers' decisions regarding breastfeeding at time of discharge. **Design:** A randomized control trial was conducted to analyze data from chart reviews. **Setting:** This study was conducted at a large hospital in the Northwest Arkansas area from Nov. 2013-Feb. 2014. **Participants:** Participants included mothers who had a C-section delivery and received skin to skin contact in the PACU or OR. There were 51 women included, and the mean age was 28. **Interventions:** A chart auditing tool was used to collect pertinent data. These were completed by RNs caring for the mother. **Main outcome measures:** The dependent variable in this study was the mother's breastfeeding choice at discharge. This was recorded using the audit tool, and a t-test was utilized to determine correlation. **Results:** 68% of women did not change their feeding preference at discharge. 8% of women changed from bottle to breastfeeding, while 16% changed from breastfeeding to both. 8% of women changed from bottle feeding to both. In 69.23% of mothers, skin to skin contact did not influence their decision to breast feed following discharge. In 30.77% of mothers, skin to skin contact did influence their decision to breast feed following discharge. Fisher's Exact Test Prob <P 1.0 M= 13 DF 0. **Conclusions:** This study did not show a significant difference in breastfeeding choice at discharge for mothers who received skin to skin in the OR or PACU; however, this is clinically significant because a few women did change their minds from bottle to breastfeeding. If providing skin to skin contact in the OR and PACU influences even one woman to choose exclusive breastfeeding on discharge, then it is a clinical practice that can be thought to produce better outcomes.

INTRODUCTION

Cesarean section (C-section) delivery has become increasingly more common in our present-day society. According to the Center for Disease Control and Prevention, 32.8% of births in the United States in 2010 were delivered by C-section (Hamilton, Martin & Ventura, 2011). Many times, C-sections are required due to a medical complication that prevents vaginal delivery or as a repeat method of delivery if a previous delivery required a C-section. C-section delivery can have many different effects on a newborn because he or she does not experience the natural process of vaginal delivery; one of the biggest areas of concern surrounding this type of delivery is breastfeeding. With such a large increase in C-section deliveries, it is clinically significant to determine what type of effect skin-to-skin contact following a C-section has on breastfeeding. Currently in most areas, babies delivered by C-section are taken to the nursery, and the mother is taken to a post-anesthesia unit. This bypasses and eliminates the time for skin-to-skin contact between a newborn and the mother. In contrast, it has been shown that early skin-to-skin contact between a mother and a newborn does have an impact on breastfeeding decisions. The current American Academy of Pediatrics/Neonatal Resuscitation Program (AAP/NRP) guidelines “recommend that newborn infants who are term gestation, crying, or breathing and have good muscle tone should not be separated from the mother; rather the newborn should be dried, placed skin-to-skin with the mother and covered with dry linen to maintain temperature,” (Mangan & Mosher, 2012, p.259). It is very important to investigate all avenues of care that will benefit both the mother and the newborn. If skin-to-skin contact in the Operating Room or Post-Anesthesia Recovery unit following a C-section increases the likelihood of exclusive breastfeeding, then hospitals and health care employees need to be knowledgeable in order to facilitate this process through implementation of appropriate protocols.

LITERATURE REVIEW

The Children's Hospital of Philadelphia defines skin-to-skin contact as "direct skin-to-skin contact between an infant and his or her parents." (Children's Hospital of Philadelphia, 2013). "The mother and infant are considered mutual caregivers, whose self-regulatory interaction post birth is mutually beneficial [and] conducive to breastfeeding," (Anderson, 1989, p. 197). Skin-to-skin contact has been shown to have significant influence on breastfeeding outcomes following a Cesarean section delivery. A study conducted by Villalon and Alvarez found that 84.7% of newborns that received skin to skin contact showed a better proportion of exclusive breastfeeding upon discharge (2013). These researchers also observed that 120 healthy infants who received early skin to skin contact presented higher rates of breastfeeding when discharged (Villalon & Alvarez, 1993). A study conducted by Bick and coworkers in the United Kingdom found statistically significant differences between a group of mothers and infants who received a skin-to-skin contact intervention and a group of mothers and newborns who did not. The researchers found that the group who received the intervention was significantly more likely to still be breastfeeding at 10 days and to be breastfeeding exclusively at 10 days post-birth rather than implementing a mixture of breast and artificial feedings (Bick, Murrells, Weavers, Rose, Wray & Beake, 2012). Bramson and colleagues conducted a study in 19 California hospitals and examined several variables researchers hypothesized would have an effect on breastfeeding. They found early skin-to-skin contact between a mother and a newborn within three hours after birth showed statistically significant increases in the decision to exclusively breastfeed. These researchers also found that "extended early skin-to-skin contact has a profound positive dose-response effect on exclusive breastfeeding" (Bramson, Lee, Moore, Montgomery, Neish, Bahjri, Lopez, and Melcher, 2010). Outcomes of skin-to-skin contact implementation at a Transition

Nursery at Woman's Hospital in Baton Rouge, LA have been found to be "very positive" with "observation of the promotion of breastfeeding and maternal infant bonding," (Elliott-Carter & Harper, 2012, p.295). Not only has skin-to-skin contact been shown to improve breastfeeding outcomes, but it has also been shown to cause negative outcomes when not implemented.

LATCH is a tool that is used to evaluate breastfeeding based on specific criteria that indicate effective breastfeeding. A higher score indicates effective breastfeeding, while a lower score can indicate ineffective breastfeeding (Riordan, Bibb, Miller, and Rawlins, 2011). In a study by Berg and Hung, lower LATCH scores and lower rates of exclusive breastfeeding were found in the control group that did not receive skin-to-skin contact within the first four hours after birth (Berg & Hung, 2011). Certain challenges to skin-to-skin contact have also been examined. Mangan and Mosher (2012) found that "barriers continue to exist in implementing the practice immediately following cesarean delivery," which creates a "significant number of mothers and babies that are not routinely benefiting from early skin-to-skin care," (p.261). Mother and infant well-being is a major concern when considering early skin-to-skin contact. However, a study by Nolan and Lawrence (2009) determined that there are ways to safely implement early contact resulting in significant benefits to both the mother and the infant when early skin-to-skin contact is implemented (Nolan & Lawrence, 2009). Though there are some challenges to implementing early skin-to-skin contact, it is extremely important to determine whether the benefits to breastfeeding exist in order to create an intervention to overcome barriers. According to Jeannette Crenshaw, author of Care Practice #6, the benefits of early skin-to-skin contact continue beyond the first hour after birth. The more time mothers and babies spend in skin-to-skin contact the greater the benefits (Crenshaw, 2007).

Though there have been several studies conducted regarding the effects of skin-to-skin contact on breastfeeding, there are few studies that have breastfeeding as the main focus. It is important to examine the effects of skin-to-skin contact on breastfeeding to ensure that the best practice is used to create the best outcomes for both mother and baby. It is evident from previous research that skin-to-skin contact has some sort of effect on breastfeeding; however, it is not clear if there are greater benefits from earlier implementation.

The aim of this study was to determine whether or not early skin-to-skin contact between a mother and a newborn in the Operating Room or Post-Anesthesia Recovery unit following a Cesarean delivery has an impact on the mother's breastfeeding choice at the time of discharge. Based on findings from previous research, it was hypothesized that skin-to-skin contact in the OR or PACU following C-section delivery would increase the likelihood that the mother will elect to exclusively breastfeed at discharge.

METHODOLOGY

Study Design

This study was conducted at a major hospital in the Northwest Arkansas region, following approval of the University of Arkansas Institutional Review Board and the study hospital's Quality Management Department. Retrospective medical record reviews were used for data collection to determine how many mothers who received skin-to-skin contact in the OR or PACU following a C-section chose exclusive breastfeeding at discharge. An audit tool (Figure 1) was used that included the mother's feeding choice on admission, where skin-to-skin contact was initiated, how long the contact lasted, if the infant fed during the initial contact, and if the mother

chose exclusive breastfeeding at discharge. These audit forms were completed by the Registered Nurses caring for the mothers and infants.

Figure 1. Audit Documentation Form

Patient Sticker:	
Mother's choice for feeding on admission:	BREAST FORMULA BOTH
Where skin to skin started (OR, PACU, etc):	
How long the baby was skin to skin:	
Did the infant feed during the contact?	YES NO
Mother's choice for feeding on discharge:	BREAST FORMULA BOTH Yes No
For mothers who receive skin to skin in the OR and choose to breastfeed on discharge ask the following: "Did skin to skin contact in the operating room have an effect on your decision to breastfeed upon discharge?"	

Participants

The cohort was comprised of all females who received a C-section delivery between November 2013 and February 2014 and received skin-to-skin contact in the Operating Room or PACU.

Mothers and infants included in the study came from varying ethnic and socioeconomic backgrounds with varying amounts of prenatal treatment. De-identification measures were used to ensure confidentiality of participants was maintained. The de-identification process included using a coding system starting with 2014 followed by an additional identification number. No personal information was collected, and all data was kept in encrypted areas to prevent any breach of confidentiality.

Figure 2. Demographics		
Age	N=Number of Participants	Percentage of Sample
19-22	6	11.7%
23-27	18	35.3%
28-32	15	29.4%
33-35	7	13.7%
36-38	5	9.8%
Gravida		
1-3	43	84.3%
4-7	8	15.7%
Parity		
1-3	45	88.2%
4-7	6	11.8%

Statistical Analysis

A t-test was used to analyze data to determine if there was a correlation between early skin-to-skin contact and the decision to breastfeed upon discharge. A Fisher’s Exact test probability was used to analyze whether or not skin to skin contact influenced a mother’s decision to breastfeed based on her verbal response.

RESULTS

In total, there were 51 participants (N=51); the age distribution of the participants showed a mean age of 28 years old with a SD of

4.9651333335, std err mean of 0.6952577321, upper 95% mean of 29.612152528, and lower 95% mean of 26.819220021 (Figure 3). The mean of the total time of skin-to skin contact was 54.25 minutes (SD 23.4) with an N=20. The total skin to

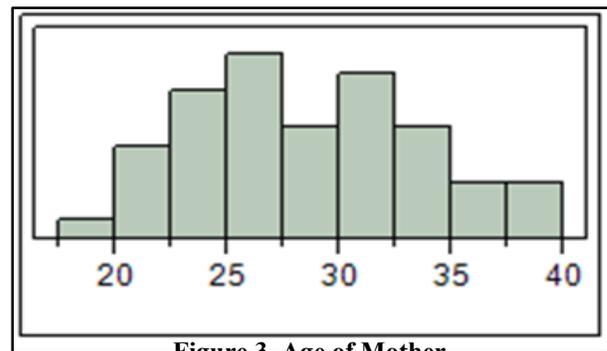


Figure 3. Age of Mother

skin time for women that decided to bottle feed at discharge was 31.66 (SD= 23.6) with an N=3, and the total skin-to-skin contact time for women that decided to bottle feed at discharge was

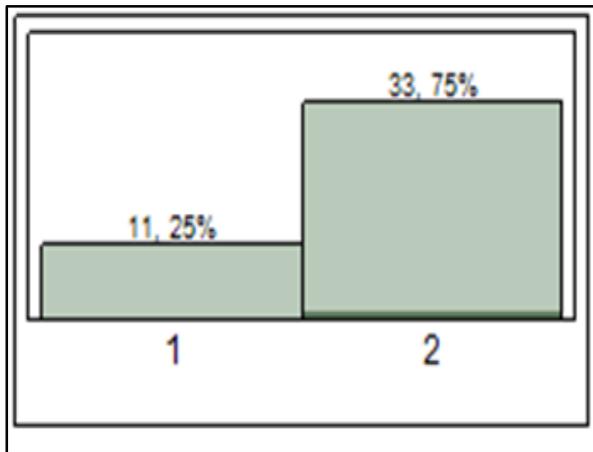


Figure 4. Feeding Choice on Admission

54.16 (DS= 26.19) with and N=24. In addition, the total skin-to-skin contact time for women that decided to bottle feed and breastfeed at time of discharge was 45.55 (SD= 19.4) with an N=9. On admission, 25% (N=11) of women were planning on bottle feeding, while 75% (N=33) of women were planning to breast feed (Figure 4) with

the total count of responses being N=44. On discharge, 12% (N=6) of women were planning to bottle feed, 59% (N=29) of women were planning to breast feed, and 29% (N= 14) of women were planning to bottle/breast feed with the total number of responses being N=49 (Figure 5) The statistics showed that 8% (N=3) of women changed

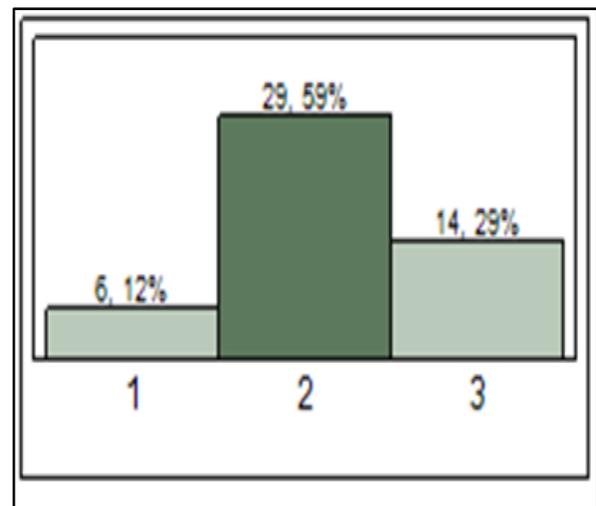


Figure 5. Feeding Choice on Discharge

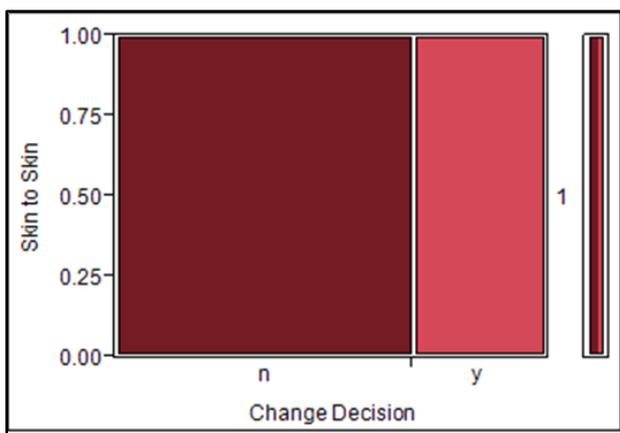


Figure 6. Contingency Analysis of Skin to Skin by Change in Feeding Decision

their preference from bottle to breast at discharge, 16% (N=6) of women changed from breast to bottle/breast, and 8% (N=3) of women changed their preference from bottle to bottle/breast at discharge. However, 68% (N=26) of women did not change their

preference from admission to discharge. The Fisher's Exact test probability (Figure 6), contingency analysis showed that in 69.23% of mothers experiencing skin to skin contact, the experience did not influence their decision to breast feed following discharge, while in 30.77% of mothers experiencing skin to skin contact, it did influence their decision at discharge with an M of 13 and a DF of 0.

DISCUSSION

Based on the results of the statistical analysis, it can be determined that skin-to-skin contact in the operating room and PACU did not show a statistically significant influence on breastfeeding choice at discharge. Since 68% of women did not change their decision, it is evident that skin-to-skin contact in this study did not improve breastfeeding rates. The contingency analysis showed that more mothers' decisions were unaffected by skin-to-skin contact than affected. This study had several limitations that may have contributed to these results including small sample size and missing data. On many of the audit forms, certain pieces of information were left blank, which decreased the sample size for some of the particular variables. The short time frame in which the study was conducted was also a limitation, as these results may have been different if studied over a longer period of time. While these limitations did exist, the study did show that 8% of women changed their mind from bottle feeding to breastfeeding, and another 8% changed from bottle feeding to both. While this was not statistically significant, it proves that skin-to-skin contact can have somewhat of a positive effect. Even though this is only a small portion of the sample size, it is significant clinically because it shows evidence of some improved outcomes. It was not anticipated that 16% of mothers who were planning to breastfeed would change their minds to both bottle and breastfeeding. This raises many questions about what caused this change.

I would recommend that further study be completed regarding the 16% of women who changed their decision from exclusive breastfeeding to supplementing with the bottle. This would be clinically significant research because it could help identify the barriers that cause mothers who would like to breastfeed to change their minds. It would be important to know if complications of breastfeeding were the causes of the decision to change because this could be avoided through better breastfeeding education and support during prenatal care. If mothers are educated about possible complications or side effects beforehand and they know how to fix them or where to find support they will be less likely to discontinue exclusive breastfeeding.

CONCLUSION

This study did determine that some mother's decisions were affected by the skin-to-skin contact in the OR and PACU, and it has been proven in previous research that skin-to-skin contact poses no danger if there are no fetal or maternal complications. Therefore, even though the results were not statistically significant, the results are significant for nursing practice as they showed that some mothers did benefit from the implementation of the skin-to-skin contact. Further study should be conducted on the benefits of skin-to-skin contact in the OR and PACU utilizing a larger sample size as well as with multiple facilities. A larger scale study may yield more statistically significant results. While there was no overwhelming evidence to support the implementation of a skin-to-skin protocol in the OR, if it is possible to make a small change toward higher breastfeeding rates and there is no potential harm to the mother or baby then it could be considered best practice to provide the opportunity for each mother and infant.

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