Utilization of the Practicum Experience to Address
Skin-to-Skin Bonding and Cesarean Section Delivery

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In partial fulfillment of the requirements for the Doctor of Nursing Practice Degree
Skin-to-Skin Bonding and Cesarean Section Delivery

A Doctor of Nursing Practice Scholarly Project

In partial fulfillment of the requirements for the Degree of Doctor of Nursing Practice

Kent State University

by

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Abstract

Historically, skin-to-skin bonding (SSB) has been delayed after cesarean section delivery. The purpose of this study was to determine the effects of removing the bonding delay and promoting SSB in the operating room. Data was collected to demonstrate the relaxing effect of oxytocin stimulation after the initiation of SSB. Both prior to the cesarean section and on the day of delivery, each participating mother was provided with instruction about SSB and the first hour of a baby’s life, known as the Golden Hour. Maternal vital signs were recorded just prior to the initiation of SSB and again after three minutes; these recordings consistently showed a calming effect after bonding was initiated. Within four hours of surgery, a questionnaire was administered to the SSB mothers with the objective of evaluating maternal satisfaction with the intervention. The results supported the initiation of SSB in the operating room: Maternal satisfaction results showed that 100% of the mothers interviewed would repeat the intervention if given a chance during a subsequent cesarean section and would recommend this intervention to a friend or family member. The evidence from this participant group supports the idea that SSB should be initiated as soon as possible following delivery, and initiated in the operating room during cesarean sections.

Keywords: bonding, skin-to-skin, contact, cesarean section, breastfeeding
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Chapter I: Introduction

Cesarean section deliveries account for approximately 30% of all deliveries in the United States each year. A significant number of these infants are not offered skin-to-skin bonding (SSB), the positioning of the naked baby prone on the mother’s bare chest, immediately or in the very first hours after birth (Moore, Anderson, & Bergman, 2009, p. 116). Throughout the twentieth century, babies delivered via cesarean section were immediately removed from their mothers and taken to the warmer to be assessed and stabilized. No opportunity was given to the mothers, therefore, to hold or bond with their new baby for more than an hour. This practice diverges from evolutionary history, which shows that neonatal survival depended on close and virtually continuous maternal contact (Moore et al., 2009, p. 2). Paradoxically, the practice of skin-to-skin contact—or SSB, as clinical literature calls it—has been shown to have a positive effect on both the mother and her new baby. Also called kangaroo care, SSB between a mother and her infant has been shown to promote beneficial physiological conditions in preterm infants such as an increased quiet sleep state, as well as a more stable thermoregulation, heart rate, respiratory rate, and oxygen saturation (Chiu & Anderson, 2009, p. 1168).

The purpose of this study was to demonstrate the benefits of removing the delay in bonding that typically occurs after cesarean section deliveries. The data provided by this study demonstrate the need to evaluate current clinical practice, provide additional information, and work to bring about changes to this clinical practice. The most recent literature regarding the benefits of SSB in the operating room during cesarean section
deliveries suggests the existence of a gap in clinical practice, specifically in nursing care (Camann & Barbieri, 2013, p.10; Smith & Plaat, p.36). To date, researchers have not studied the long-term implications of delayed bonding. The short-term implications, however, have been investigated. Swedish researchers noted that an infant whose lips touched her mother’s nipple within the first hour of life experienced significant benefits: Every day of her hospital stay, the infant was held by her mother 100 minutes longer than babies who only experienced suckling after the first hour of life (Widstrom, Wahlburg, & Matthiesen, 1990, p. 154).

Recent behavioral and physiological observations of infants and their mothers have shown that infants are ready to begin interacting within the very first minutes of life (Klaus, 1998, p. 1244). These studies suggest that the postpartum treatment mothers and babies receive may influence their physiology and behavior in the short and—possibly also—the long term perspective (Bystrova et al., 2009, p. 320). In preparation for this study, and following an extensive literature review, the investigator carried out a needs assessment to gather the necessary information for the development of the project plan. The needs assessment focused on the patient population that was not offered SSB in the operating room, thereby identifying a potential gap in evidence-based quality care. Tools for this assessment included a review of demographic data from public sources such as external data from government websites (e.g., www.quickfacts.census.gov), patient consultations, surveys, interviews, chart reviews, internal organizational data, and external data from governmental websites (Zaccagnini & White, 2011, p. 460).
Based on findings from clinical literature and the recommendations from the needs-assessment studies, an evidence-based practice project was conceptualized to focus on mother/baby couplets after routine cesarean sections and the SSB experience that followed. The primary investigator gathered data through participant observation, so as to determine which interventions were most beneficial to the mother and baby. Two research questions were developed: (1) Does a statistically significant difference exist between the mother’s blood pressure and heart rate before the initiation of SSB and three minutes afterwards? (2) Is there an increase in maternal satisfaction with the SSB intervention? This study focused on maternal hemodynamic responses to SSB following a cesarean delivery in the operating room. The intervention ensured that SSB was initiated during the Golden Hour, the term given to the first hour of a newborn’s life. The Golden Hour for babies owes its name to the Vermont Network, where it was first used during a study focusing on improving interventions in the first hours of life. The term was originally used in the context of adult trauma and the critical first hour of treatment (Reynolds, Pilcher, Ring, Johnson, & Mckinley, 2009, p. 211).

**Problem and Significance**

The Golden Hour is the term given to the first hour of a newborn’s life. The Golden Hour immediately following a baby’s birth has been described as a critical period for emotional development, attachment, breastfeeding initiation, and infant neurological development (Bergman, 2005, p. 44). During this critical hour, infants are alert, show readiness behaviors toward breastfeeding, and learn to control body temperature, heart
This growing understanding of the newborn explains the need for best practices, including SSB, within the first hour of a baby’s life. Lundington-Hoe and Swinth (1996, p.691) suggested that early SSB is linked with improved breastfeeding and enhanced neurobehavioral development. Their findings suggest that the continued study of SSB is to be encouraged, with the aim of removing the delay in bonding and identifying, tracking, and analyzing the benefits of SSB to mothers and their babies.

The first research question addressed the hypothesis that the maternal release of oxytocin occurring after a baby initiates SSB would relax the mother, decrease her anxiety, and foster positive feelings in her toward her newborn. Oxytocin antagonizes the flight-fight effect, thereby decreasing maternal anxiety and increasing calmness and social responsiveness (Moore et al., 2009, p. 2). In an attempt to verify this, the current study had maternal blood pressure measured after SSB was initiated. The significant role this hormone plays in bringing on uterine contractions and aiding in the ejection of breast milk during infant suckling is well known, and the emotional process that takes place between the mother and the infant during childbirth is very powerful (Kiss & Mikkelsen, 2005, p. 98). The increased oxytocin in the mother’s brain results in slight sleepiness, euphoria, a higher pain threshold, and increased love for the infant (Klaus, 1998, p. 1246).

The second research question addressed the hypothesis that a woman having undergone a cesarean section delivery would find increased maternal satisfaction after the
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SSB intervention. SSB is thought to provide the mother with a positive distraction from the stress of surgery, allowing her to focus instead on her newborn; this is something that the primary investigator regularly observed in her patients. Other SSB benefits in the literature include the increased ability of the brain to release endorphins, narcotic-like hormones that enhance mothering feelings (Crenshaw, 2007, p. 40). Following SSB, then, the mother would be expected to experience less maternal anxiety, and a high level of maternal satisfaction toward the SSB intervention. In addition to its benefits for the mother, SSB has also been shown to provide a calming and reassuring effect on the infant (Klaus, 1998, p. 1244). Carfoot, Williamson, and Dickerson (2005, p. 78) also reported a high degree of maternal satisfaction with SSB, with mothers in their study stating they had enjoyed the experience and would choose to have skin-to-skin care in the future.

**Background**

Traditionally, newborns have been separated from their mothers following cesarean section deliveries, placed in a warming unit and cared for by the delivery nurse. However, a review of clinical practices at four community hospitals and one academic medical center showed that these birthing centers are only offering SSB to vaginal delivery patients. Despite the many benefits of early SSB, this practice was clearly not being promoted following surgical deliveries. The Baby-Friendly Hospital Initiative (WHO & UNICEF, 2009) states that SSB contact should be provided for every healthy mother and infant immediately after birth, or as soon as possible during the first 30 minutes; these recommendations apply for both vaginal and cesarean section delivery
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situations. The term baby-friendly is reserved for hospitals that have met the criteria established by the World Health Organization and UNICEF. This global program, launched in 1991, has aimed to provide better maternity care and promote breastfeeding to give babies the best start in life and suggests that, when providing best practice nursing care, every infant should receive the SSB opportunity whether they are born by cesarean section or vaginal delivery. The Baby-Friendly Hospital Initiative encourages bonding as soon as possible after birth, unless the mother is either unable to, or chooses not to, participate in the SSB intervention. Although SSB is the norm from an evolutionary perspective, the separation of mothers from their neonates at birth has unfortunately become standard practice in many industrialized societies, despite mounting evidence of its potentially harmful effects (Moore et al., 2009, pp. 2-3). The routine clinical practices that currently follow surgical deliveries create a delay in bonding between mother and baby. Bystrova et al. (2009) found that mother-infant separation during the first two hours after birth is associated with less infant self-regulation, decreased maternal sensitivity, and attachment that is not compensated for by rooming-in (Berg & Hung, 2011, p. 324). The introduction of SSB in the operating room following cesarean sections enabled post-cesarean practices to be studied: The goal of this study was to change these practices to better meet the needs of the mother while allowing immediate interaction with her newborn.

There is currently little existing data regarding either the benefits of SSB for babies born by cesarean section or the optimal timeframe during which SSB should be
initiated in order to achieve maximal benefits. Moreover, only a few studies have investigated the effects of these factors on breastfeeding, although early initiation of SSB has been shown to improve the duration of exclusive breastfeeding rates. By means of the Cochrane Systemic Review, research studies were identified that reported significant and positive effects of exclusive breastfeeding rates at 1-4 months after birth, and improved the duration of breastfeeding (Moore et al., 2009, p. 1; Bystrova et al., 2009, p. 97; Crenshaw, 2007, p. 40). The infants in the SSB group breastfed an average of 42.5 days longer than the control infants (Moore et al., 2009, p. 10).

At Mercy Medical Center, the hospital administrative professionals and stakeholders, including the medical director, chief nursing officer (CNO), and chief executive officer (CEO), widely recognized the importance of breastfeeding and SSB. These professionals all gave their support to this DNP scholarly project as well as the SSB intervention because they place great emphasis on the importance of infant and maternal health and satisfaction. The interprofessional healthcare team, including the head nurse of labor and delivery, the education coordinator, the lactation consultant, and the obstetricians, showed a vested interest in this project and in the promotion of healthy interventions to their gravid patients. Parents also became supportive stakeholders in SSB once they were educated on the best care and nutrition for their children. This was the case for all the mothers who fit the study criteria, chose to participate in the study, and benefited from the SSB intervention. Mothers who were given the opportunity to hold their infants in the SSB intervention indicated a strong preference for the same type
of post-delivery care for future deliveries. In a different study carried out by Carfoot et al. (2005, p.71), only 30% of mothers who held their swaddled infants indicated that they would most certainly prefer this type of delivery care in the future.

The need for a change in clinical practice became evident after reviewing the current literature and considering the overwhelming maternal preference for SSB in the operating room. Once the need for a change was identified, an organizational assessment was needed to provide additional information. After it was determined that SSB was an intervention worthy of being evaluated, an interprofessional team was formed: the Mother/Baby Taskforce. The taskforce convened monthly over a period of 12 months to review the current evidence-based practice plan for maternal nursing care. It then identified two major priorities: to increase mother-baby bonding, and to bring about practice changes in the first few hours after delivery. The group decided that throughout the SSB intervention, the transition nurse should constantly monitor the needs of the infant.

In addition to the SSB intervention, the Mother-Baby Task Force evaluated best practices for mother-baby bonding and implemented changes to allow the transition nurse to focus on promoting SSB. Specifically, while SSB is in progress, the transition nurse should monitor the infant and remain at the mother’s bedside. In order to facilitate this monitoring, the hospital purchased new portable computer equipment to allow charting and the recording of infant vital signs in the operating room. These changes made it possible for nurses to stay with the baby in the operating room, further promoting the
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SSB intervention. An additional machine was purchased to record neonatal vital signs in the recovery room, thereby allowing infants to room-in with their mothers as long as they were in the recovery room. While together with their newborns, mothers quickly learn to recognize their babies’ needs and how best to soothe, comfort, and care for them (Crenshaw, 2007, p. 41).

The organizational assessment, carried out by the investigator, also included a review of specific hospital and nursing policies that could benefit from being updated to match research and evidence-based practice. This assessment examined processes, work environment, and organizational structure. Following this assessment, job descriptions were changed to accommodate the SSB intervention. The task force developed solutions and created an action plan together with a Gantt chart (Appendix A) to provide a timeline for carrying out the project. After reviewing the hospital’s SSB policy, the primary investigator noted the policy only applied to preterm infants. This, in turn, led the Mother-Baby Task Force to call for the implementation of a new hospital policy. Standards and policies from other medical centers were researched on the Internet to aid in the creation of the new policy.

Theoretical Framework

Advanced practice nurses must be prepared to integrate nursing theory into practice. As nurse leaders and nurse scientists, advanced practice nurses gather evidence at the patient’s bedside, make observations, rely on past experiences, respond to their patients’ experiences, and devise reasons, theories, or concepts that might organize the evidence
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(Zaccagnini & White, 2011, p. 10). Nurses use theories as a guide to clinical practice, as these theories provide not only a scientific basis for care, but a foundation for complex decision making. The application of Virginia Henderson’s Theory of the Unique Function of Nursing to this scholarly project was chosen because it provides a theoretical base upon which the advanced practice nurse can base her decision-making. The primary investigator also selected an appropriate research project framework that provided direction and organization for the study. This SSB scholarly project utilized a scientific foundation to provide each participant an opportunity to bond with their baby as soon as possible after delivery. Henderson stated the importance of meeting basic human needs, with her theory addressing all individuals, sick or well, and the activities contributing to their overall health or recovery. Henderson identified 14 basic needs:

- breathing normally,
- eating and drinking adequately,
- eliminating body wastes,
- moving and maintaining a desirable position,
- sleeping and resting,
- selecting suitable clothes,
- maintaining body temperature within normal range,
- keeping the body clean and well groomed,
- avoiding dangers in the environment,
- communicating with others,
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- worshipping according to one’s faith,
- working in such a way that one feels a sense of accomplishment, and
- playing/participating in various forms of recreation.

This theory can be applied to several of the goals of the SSB intervention, such as breathing normally, eating and drinking adequately, sleeping and resting, maintaining body temperature within normal range, avoiding dangers such as falling or hypothermia in the operating room environment, communicating with others, and working in such a way that one feels a sense of maternal accomplishment. Throughout her life, Henderson advocated humane and holistic care for patients, raised important issues in healthcare, authored one of the most accurate definitions of nursing, promoted nursing research as the basis for nursing knowledge, and above all, represented nursing with dignity, honor, and grace (American Nurses Association, 1996).

**Conceptual Model**

Since it aligns so well with the proposed research situation, the Elements of the Program Development and Evaluation Process, a concept originally designed by Deanna Grimes (Hickey & Brosnan, 2012, p. 174), was selected, applied, and adapted to fit this project. The new information gleaned from the evaluation of the SSB intervention was then able to influence further analysis of the problem and further planning as shown in the Elements of the Program Development and Evaluation Process (Hickey & Brosnan, 2012, p. 174). According to the Grimes model, a problem should first be analyzed and its contributing factors should be considered. Next, after specifying the goals and
objectives, the desired outcome should be determined. As funds may be limited, it must be demonstrated why the program or intervention would benefit others. Step three should involve planning the program, and the final step should be the implementation and evaluation of the program. The program evaluation should be thoughtfully designed so that it measures the degree to which the outcomes were or were not met (Zaccagnini & White, 2011, p. 477). The goal should be to have measurable objectives, evidence-based interventions, and to collaborate with the interdisciplinary team and all the stakeholders.

When applying the Grimes model to this DNP scholarly project, the primary investigator began by defining the problem: that current clinical practice involves a significant delay in bonding following cesarean section deliveries. Some factors contributing to this situation include historical nursing traditions, difficulty adapting to change, and a lack of education among members of the healthcare team regarding the benefits of immediate SSB. The investigator posed the question: Is it possible that a major contributing factor was overlooked (Hickey & Brosnan, 2012, p. 174)? The next step in the process was to specify goals and objectives. The goal of this DNP scholarly project was to remove the delay in bonding by allowing mothers to hold their infants within ten minutes following a cesarean section delivery to enable them to initiate the maternal child bonding process as soon as possible. According to the model, the desired outcome should be determined with respect to the problem and planned interventions should be put in place to achieve that goal (Hickey & Brosnan, 2012, p. 175). Should the
goal not be reached, however, the problem should be further assessed and analyzed, and the planning circuit continued (Hickey & Brosnan, 2012, p. 175).

The third step of the Grimes model involved planning the program. The primary investigator conducted a lengthy literature review to determine an appropriate evidence-based intervention to reduce the delay in SSB. The next step was to analyze the problem by applying scientific evidence and directing observation of the conditions surrounding the problem in order to highlight the factors contributing to the problem (Hickey & Brosnan, 2012, p. 175). The next step was to identify the target population: mothers scheduled to undergo cesarean sections. The investigator conducted a stakeholder assessment to determine the potential for collaboration and buy-in from the hospital stakeholders. When planning the program, the investigator also took into consideration barriers such as resistance to change and lack of education. The traditional way that babies were assessed and transitioned on the warming table was changed and anesthesia providers had to grow accustomed to the baby being with the mother while they were still caring for her. The transitional nurse in the operating room had to assume full responsibility for the infant since the anesthesia provider’s sole job is to care for the mother. When planning this program, the Mother/Baby Task Force also took into account that SSB was being evaluated as a possible future mandate: Regulatory bodies, including the Joint Commission, having determined the importance of this intervention, are currently considering SSB as a part of their core measure set to be established in the near future.
The final step in the Grimes process involved the implementation and evaluation of a program. The new information gleaned from the evaluation can then influence further analysis of the problem and further planning (Hickey & Brosnan, 2012, p. 175). When considering topics such as population health and evaluating interventions, the primary investigator should document processes used to determine effectiveness. The SSB intervention would be considered effective if quality indicators showed it was offered to eligible mothers and that they were satisfied with the intervention more than 95% of the time. Evaluating practice and changes in practice is essential to the successful implementation of any quality improvement or evidence-based practice initiative (Zaccagnini & White, 2011, p. 97). Through evaluation, the primary investigator was able to determine whether the goals were met and whether the outcomes were successful. Should the goal be achieved, the individual patient or population would experience an improved level of health (Hickey & Brosnan, 2012, p. 175).
Research Questions

This study addressed the following two research questions:

(1) Does a statistically significant difference exist between the mother’s blood pressure and heart rate measurements before the initiation of SSB and three minutes afterwards?

(2) Is there an increase in maternal satisfaction with the SSB intervention?
Chapter II: Literature Review

The investigator conducted an extensive literature search to examine the benefits of early SSB initiation. The literature search revealed that promoting SSB in the operating room would be beneficial because of the many health benefits it affords the mother and her new baby (Bystrova et al., 2009; Camman & Barbieri, 2013). Together with the assistance of a medical librarian, Cochrane Reviews, Pub Med, Medline and CINAHL electronic sites were utilized to assure the thoroughness of the literature search and review process. A literature review was conducted every two to three months throughout the study to obtain the most current information about the topic. The key words used included skin-to-skin contact, skin-to-skin bonding, and kangaroo care. Boolean operators such as skin-to-skin AND bonding, OR contact were utilized to widen the literature search. Only English language journals were evaluated.

The literature is replete with evidence that shows the health benefits of SSB. The defining feature of evidence-based practice is the linking of current research findings with patients’ conditions, values, and circumstances (Zaccagnini & White, 2011, p. 65). Several research studies reported that earlier SSB does indeed provide improved outcomes for the mother and her newborn (Meyers, David, 2009). The infants in the skin-to-skin group showed significantly better self-regulation and less emotional negativity and irritability than the infants in the other groups, even 1 year after birth (Bystrova et al., 2009, p. 107). Early SSB is a straightforward example of an evidence-based practice intervention that, when integrated into the routine care of healthy newborns, creates a positive and beneficial experience for mothers and newborns.
(Haxton, Doering, Gingras, & Kelly, 2012, p. 223). Separation should not be part of routine care, even after a cesarean delivery, as the mother can provide the ideal environment for successful newborn adaption to the extrauterine environment (Hung & Berg, 2011, p. 320). Over the course of this DNP scholarly project, a gap became evident between current hospital practice and the current research findings on SSB following cesarean section deliveries.

In order to promote evidence-based best practices, the investigator decided upon an initial strategy to observe current practice. The study focus was to compare the effects of SSB on the mother and her newborn in the operating room. The research clearly shows that babies thrive most when kept in close skin-to-skin contact with their mothers following delivery (Sears, 2010). The American Academy of Pediatrics (AAP) created a policy with regard to the way babies should be cared for during their first hour of life. The policy recommends that routine tasks associated with newborn care be postponed until after SSB has been achieved. According to the AAP, weighing, measuring, bathing, performing needle sticks, and administering eye prophylaxis can be delayed until after the first feeding has been completed (American Academy of Pediatrics, 2005, p. 499). Skin-to-skin contact between a mother and her baby at birth reduces infants’ crying, improves mother-baby interaction, keeps the baby warmer, and helps the baby breastfeed more successfully (Moore et al., 2009, p. 2). The primary investigator chose to integrate these recommendations into her study strategy in an effort to provide best practice evidence-based nursing care.
The AAP post-delivery best-practice policy (2005, p. 498) states that “healthy infants should be placed and remain in direct skin-to-skin contact with their mothers immediately after delivery until the first feeding is accomplished.” This provides an opportunity for newborns to hear their mothers’ heartbeats and be comforted by her smell. In addition, continuing SSB for more than 60 minutes can significantly decrease salivary cortisol levels—a marker for infant stress between 60 and 120 minutes post-delivery, compared to SSB for only 60 minutes or less (Takahashi, Tamakoshi, Matsushima, & Kawabe, 2011). Baby-Friendly U.S.A., the accrediting body of the Baby-Friendly Hospital Initiative in the United States, suggests that skin-to-skin contact be provided for every healthy mother and infant as soon as possible during the first 30 minutes after delivery (Berg & Hung, 2011, p. S19).

**Breastfeeding**

Breastfeeding is the healthiest and most natural way of infant feeding and successful lactation mainly depends on its early initiation (Mahmood, Jamal, & Khan, 2011, p. 601). The benefits of breastfeeding are well accepted worldwide: The transfer of antibodies into breast milk provides protection from acute infections (gastrointestinal, respiratory, and urinary infections, necrotizing enterocolitis), has been shown to reduce rates of type 1 and 2 diabetes, and enhances maternal bonding (Bailey, 2012, p. 279).

Despite the established benefits, research studies report that breastfeeding rates are lower among women who give birth by cesarean section than among women who give birth vaginally (Berg & Hung, 2011, p. S18). Research has also shown that breastfeeding within the first hour of life improves infant survival and prolongs the
duration of exclusive breastfeeding (Sears, 2009, p. 31). The results of a recent meta-
analysis of randomized controlled trials published by the Cochrane Collaboration (Moore 
et al., 2009, p. 1) suggest that early SSB has a positive effect on the success of the first 
breastfeeding experience. It also has a positive effect on the breastfeeding status of 
postpartum day 3, at 1 to 4 months, and on the total breastfeeding duration. For this 
reason, it is imperative that breastfeeding mothers be given the chance to bond with their 
newborns as soon as possible.
Chapter III: Methods

Sample and Location

This study was carried out in a 400-bed urban medical center with a delivery rate of approximately 100-120 births per month, and an annual total of 1500 births. An established birthing center, Mercy Medical Center is located in Northeast Ohio. Cesarean sections account for approximately 31 percent of the deliveries done at this facility each year. Eligible study participants included pregnant English-speaking women over the age of 18 who were planning on delivering their newborn by scheduled cesarean section under spinal or epidural anesthesia. Any newborn whose mother received general anesthesia, was preterm (before 37 weeks of gestation), high risk, or received an APGAR (Appearance, Pulse, Grimace, Activity, Respiration) score of less than eight was excluded from the study. Mothers who were too sedated to participate in SSB with their infant were also excluded. Any cesarean section that was deemed an emergency according to American College of Obstetricians and Gynecologists (ACOG) standards was disqualified from this study. An emergency cesarean section refers to any unplanned cesarean section occurring as a result of fetal decelerations, non-reassuring fetal heart tracing, or any other reason leading the obstetrician to choose to perform surgery within 30 minutes. Infants who required any type of resuscitation were also excluded. In addition, mothers in the SSB group who received pain medication before the second set of maternal vital signs were also disqualified. If either the mother or her baby was excluded, the couplet was disqualified from the study.
The protocol for the SSB intervention was designed by the primary investigator. Study participants had their vital signs measured both before and again three minutes after they were given their baby for SSB in the operating room. Each patient received the same standard of care, treatment, and education. This included a complete description of the SSB intervention, a question-and-answer period, and an educational handout. The primary investigator collected all the data for this study. As part of this study, 26 patients were evaluated, with 17 in the SSB group and nine in the comparative group. This research protocol was fully approved by the Institutional Review Board and took place at Mercy Medical Center in Canton, Ohio. Patients were educated on the benefits of SSB on the day of delivery, a question and answer period was provided, and all patients were aware that participation in the study was voluntary.

Mission and Vision Statement

The mission statement of Mercy Medical Center is “to continue Christ's healing ministry by providing quality, compassionate, accessible and affordable care for the whole person” (Mercy Medical Center, n.d.). Mercy Medical Center’s vision is “to be the provider and employer of choice for quality, cost effective health care in Stark County and surrounding communities and be a model of community health care demonstrating service excellence and providing wellness, education, and outreach to our community.” (Mercy Medical Center, n.d.) The values of this organization include respect, excellence, attitude, compassion, and holistic care. The DNP scholarly project was consistent with the mission and vision statements of the hospital in which it took place and these statements were taken into consideration when the SSB intervention was
designed. Fitting into the organizational structure includes a complex association with
the mission, vision, and values (Waxman, 2013, p. 234). SSB is a healthy intervention
that promotes attachment. All of these values were consistent with this interventional
project as it was conducted within the organization, the Affordable Care Act, and the
global health measures of Healthy People 2010.

In order to provide best practice nursing care, changes were needed in the
maternal nursing area. All nurses from labor and delivery, neonatal intensive care, and
post-partum were invited to join the Mother-Baby Task Force. This group included two
head nurses, a nursing educator, nurse’s aides, and eight staff nurses from a variety of
shifts. The primary investigator, a CRNA (Certified Registered Nurse Anesthetist), was
part of this group and presented a plan to promote SSB intervention. The members of the
group provided suggestions, and the goals of the task force were agreed upon by means
of consensus. The objectives of this group were to:

- observe proper documentation when transitioning the mother/baby couplet during
  the first two hours of life,
- review transitional process issues and determine which revisions were needed,
- ensure adequate staffing to allow time for all parts of the transitional process
  including SSB and breastfeeding assistance,
- allow reporting and suggestions from the Mother-Baby Task Force members,
- address physicians’ concerns and barriers obstructing care, and
• exceed the Healthy People 2010 goal of 75% of mothers initiating breastfeeding and decrease their formula supplementation rate to less that 20% at discharge (United States Breastfeeding Committee, 2010, p. 1).

The task force evaluated the potential benefits of the proposed SSB intervention for the mother/baby couplet and the process the staff could use to successfully promote early SSB. All labor and delivery staff members were given the opportunity to orient themselves with each phase of the transition process. They were also taught the meaning of the Golden Hour and its benefits to the mother/baby couplet. The task force held monthly meetings to review ideas. All participation was voluntary and the group was motivated to improve the quality of care, and to remain up-to-date on maternal nursing evidence-based initiatives for their patients. The outcome goal of the SSB program was for 100% of mothers to be offered SSB following cesarean section deliveries.

The bedside nurses were provided with SSB education and were given a handout (Appendix B) for their patients to help teach them about the concept of the Golden Hour. After the education materials were distributed and discussed, a short quiz was administered to the nurses to ensure they fully understood these concepts. Each of the quiz questions was designed to cover the most important concepts—predominantly questions related to the safe positioning of the infant during SSB. This encouraged the staff to become familiar with all components of SSB including specific information detailing exactly how to position the infant on the mother’s bare chest in the operating room without interrupting the surgical field. The benefit of giving staff extensive information on SSB and the Golden Hour was that the bedside nurse would be in a
position to answer any additional questions or concerns expressed by the study participants. Anesthesia providers and obstetricians were also given an evidence-based educational information sheet detailing the benefits of SSB, and stressing the importance of SSB to the mother/baby couplet.

The study participants were pregnant women 18 years of age or older who had just delivered a baby by scheduled cesarean section. The primary investigator recorded maternal vital signs before and after the SSB intervention was initiated to evaluate maternal anxiety and the effects of the release of maternal oxytocin. A maternal satisfaction questionnaire was also administered. The data analysis provided information about the effects of SSB on the mother and infant. The transition nurse monitored the baby throughout the SSB intervention in the operating room.

Materials

The supplies and equipment required to record maternal vital signs for this study included an EKG heart monitor, a blood pressure cuff, and a pulse oximeter. The same equipment was used for every patient, and cleaned between patients. An automatic vital sign recording device with print capabilities was used in the operating room. Blankets from the warming table were placed over the back of the infants when they were skin-to-skin with their mothers. Knit hats were used to promote normothermia. Educational materials in the form of pamphlets and hand-outs (Appendix B) were given to the mother during her initial assessment and check-in; this provided the mothers with an opportunity to review the information, ask questions, and make an informed decision as to whether they wanted to participate in the SSB intervention.
**Procedure**

A convenience sample was used, with mothers scheduled for cesarean section deliveries being asked by the primary investigator if they would be interested in participating in the study. Each patient was given a Golden Hour handout (Appendix B) detailing the significance of the Golden Hour and SSB, and was encouraged to ask any questions she had about the content matter. Prior to the mother’s delivery day, the definitions of these terms were explained again in Mercy Medical Center’s centering teaching area. The centering sessions bring together groups of expectant mothers with coinciding due dates to receive pregnancy-related teaching sessions. When mothers arrived for delivery, teaching was repeated and mothers were allowed to choose or decline the SSB intervention. If the mother chose SSB and fit the study criteria, she was entered into the study.

A consistent procedure for the DNP scholarly project was designed. The primary investigator evaluated the expectant mothers’ vital signs upon their arrival in the operating room; this procedure was repeated just prior to the SSB intervention and three minutes after SSB was initiated. Within four hours after surgery, the investigator administered a maternal satisfaction questionnaire. If the mother had received pain medication during the cesarean section, the investigator administered the maternal questionnaire 180 minutes after surgery, as the half-life of pain medication is 144 minutes. The data collected from each enrolled patient included the mother’s age, type of delivery, number of pregnancies, whether or not the infant was placed skin-to-skin, and
maternal vital signs before and after SSB. Data was also recorded as to whether or not the infant began breastfeeding within the first hour.

The maternal satisfaction questionnaire included the following questions for the mother to answer:

1) Are you breast or bottle feeding?
2) Have you ever done skin-to skin bonding before?
3) Did you enjoy the skin-to-skin bonding intervention?
4) Would you recommend this intervention to a friend?
5) Would you choose to do skin-to-skin bonding again?

The structured maternal satisfaction interview consisted of five-questions developed to evaluate maternal satisfaction with the SSB intervention. The intention of the interview was to be short so as not to overwhelm the mother after surgery. Every effort was made to allow the interview to be completed and to minimize the risk of subjects withdrawing from the interview (Terry, 2012, p. 141). The investigator took care to ask the same questions in the same manner with each participant.

Protection of Human Participants

The Institutional Review Board (IRB) meeting occurred on May 2, 2012 at Mercy Medical Center. The IRB team approved this project proposal (Appendix C) and requested that the investigator present the results of the study in May 2013. An IRB application was approved by the Kent State University IRB committee (Appendix D). After careful review and agreements between the institutions, the Mercy Medical Center IRB agreed to serve as the IRB of record. Consistent with federal IRB regulations, the
IRBs of Mercy Medical Center and Kent State University were to be made aware of any changes or problems that should occur during the study as requested in the joint agreement.

The principle investigator observed all IRB-designated practices throughout the duration of the project. The investigator had completed the Collaborative Institutional Training Initiative (CITI) with a focus on biomedical IRB research training as well as the Human Participant Protection Training course. The data collection tools did not identify the patient by name so as to maintain confidentiality; instead, study numbers (sequentially, from 1–18) were assigned to the enrollees as they signed up for the study. Until this study began, SSB had been offered to all vaginal delivery mothers at Mercy Medical Center for at least an hour after delivery, but not to cesarean section mothers. Therefore, no IRB consent was required as the intervention has already been deemed current hospital practice.

**Budget**

The establishment of new interventions often incurs additional costs for the organization. Despite these new costs, the patients participating in the study were not charged for the SSB intervention they received. Equipment costs were also absorbed by the organization. The cost to the institution for the educational handout that was distributed to study members was 10 cents per copy based on charges quoted by Kinkos, a local office store. This rate included paper, ink, printer use, and electricity. A multipurpose computer on wheels –approved for use in the operating room –was also purchased by the hospital. Out of the general maternity operating budget, new
monitoring equipment was also purchased for use with all patients, regardless of whether they chose the SSB intervention. Nursing time was another cost associated with the SSB intervention. It was estimated that fifteen minutes of nursing time in the operating room was used to ensure infant safety, explain breastfeeding procedures to the new mother, and monitor the SSB intervention. Using the hourly nursing rate of $40 as a benchmark, the nursing time was broken down into four fifteen-minute units of approximately $10 each: This resulted in a cost of $10 per SSB study patient. Financial considerations, such as determining whether this intervention could generate revenue, and developing a workable budget were important sustainability issues. Such issues would need to be addressed and evaluated should this program be implemented by another institution in the future.
Chapter IV: Results

This study examined the overall effects of SSB and maternal satisfaction on the mother/baby couplet during scheduled cesarean sections. The results that follow assess the contributions of this study to nursing science.

The first purpose of this study was to demonstrate the effects of the hormone oxytocin on maternal blood pressure and heart rate by comparing two data sets: a pre-test set and a test set. Blood pressure was recorded to show the natural effects of the oxytocin released during SSB. The second purpose of this study was to demonstrate maternal satisfaction with the SSB intervention, as satisfaction with patient care is an important quality indicator for all hospitals. The primary investigator personally observed that all of the mothers participating in the SSB intervention both expressed their satisfaction with the SSB intervention and appeared to have an overall calm demeanor. This study emphasized many of the potential benefits for the mother/baby couplet of removing the delay in bonding that is current practice through the initiation of SSB in the operating room. As previously discussed, the current literature details some of these benefits, including a release of oxytocin which helps contract the uterus and causes a decrease in maternal blood pressure, less infant crying, and improved overall breastfeeding rates (Bystova et al., 2009).

Demographic Data

A convenience sample was utilized: Expectant mothers over the age of 18 who were scheduled for cesarean sections at Mercy Medical Center were given the option of participating in the study. The final sample consisted of 17 SSB participants, with one
mother disqualified due to her infant’s low APGAR scores and nine comparative non-SSB participants. The comparative group mothers were undergoing scheduled cesarean section with another CRNA and were not offered SSB. The mean length of the SSB intervention in the operating room was 9.8 minutes. The vital signs of the comparative group mothers were measured at 10 minutes and again at 13 minutes. The participants ranged in age from 19 to 35, with a mean age of 25.6 years old in the SSB group. Of the subjects who participated in the study, 89% were Caucasian and 11% were Black.

The primary investigator compiled the data in a Microsoft Excel spreadsheet (Appendix E) and analyzed it with Mini Tab Version 16. A pretest-test design was used to compare vital signs data from before and after SSB. The Mann Whitney test was used on the respiratory rate parameter as that parameter did not show normal variation. Using the pre-test and test data sets, a paired t-test was performed on the SSB group to determine whether the results were statistically significant. A two-sample t-test was used with the comparative group.

**Analysis of Research Questions**

The research questions of this study were developed to determine whether SSB should be offered in the operating room as part of regular clinical practice.

The first research question was as follows:

1. Is there a statistically significant difference between blood pressure and heart rate before the initiation of skin-to-skin and three minutes after skin-to-skin initiated?
The data collected from the SSB group’s vital signs were used to answer this question. This quasi-experimental study focused on one group at two different intervals as part of a pretest-test design. The data was analyzed and a simple t-test was performed using Mini Tab. The systolic blood pressure showed a 14.8 mmhg (millimeters of mercury) drop between the two intervals. This was strongly significant \( (p < .001) \). The 95% CI of the SD was from 9.08 to 28.35 for the difference in systolic blood pressure. A significant decrease in respiratory rate was also noted in this group \( (p < .046) \). The other parameters evaluated included diastolic blood pressure, heart rate, and pulse oximetry; these showed no clinically significant changes. The age of the participants also did not correlate with any changes.

As compared to the SSB participants, the nine subjects in the comparison group did not exhibit the same decrease in systolic blood pressure at 10 and 13 minutes post-delivery. In fact, their blood pressures increased by an average of 3.89 mmhg. The other parameters were normally distributed and did not show any clinical significance.

The second research question asked the following:

2. Is there an increase in maternal satisfaction with the skin-to-skin intervention?

The second research question was answered using data from the maternal satisfaction questionnaire that was administered to the all SSB study participants within four hours of their cesarean section, while they were still in the recovery room. Prior to this experience, some mothers had already had cesarean sections; none of them, however, had ever been offered the SSB intervention. It is worth noting that the maternal response to the satisfaction questionnaire was the same for both breastfeeding and bottle-feeding
mothers. The satisfaction questionnaire revealed that 100% of the participating mothers were very satisfied with the opportunity to do skin-to-skin bonding, 100% said they would choose the intervention again, and 100% said they would recommend SSB to a family member or friend.

**Descriptive Statistics**

The SSB group was evaluated using a paired t-test, the parameters of which are detailed in Table 1.

Table 1

*T-test Results of Skin-to-Skin Vital Statistics*

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean pre-test</th>
<th>Mean post-test</th>
<th>Mean change</th>
<th>Paired t-test (SSB)</th>
<th>2-sample t (comparison)</th>
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<tr>
<td>Systolic BP</td>
<td>SSB</td>
<td>122.8</td>
<td>108.0</td>
<td>-14.8</td>
<td>&lt;.001</td>
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<tr>
<td>Comparison</td>
<td>120.3</td>
<td>124.2</td>
<td>3.8</td>
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<td>0.001</td>
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<tr>
<td>Diastolic</td>
<td>SSB</td>
<td>60.2</td>
<td>61.1</td>
<td>0.9</td>
<td>0.770</td>
</tr>
<tr>
<td>Comparison</td>
<td>66.1</td>
<td>65.1</td>
<td>-1.0</td>
<td></td>
<td>0.680</td>
</tr>
<tr>
<td>Heart Rate</td>
<td>SSB</td>
<td>98.1</td>
<td>96.2</td>
<td>-1.9</td>
<td>0.386</td>
</tr>
<tr>
<td>Comparison</td>
<td>87.6</td>
<td>87.8</td>
<td>0.2</td>
<td></td>
<td>0.550</td>
</tr>
<tr>
<td>Respiration</td>
<td>SSB</td>
<td>23.7</td>
<td>21.3</td>
<td>-2.3</td>
<td>0.046</td>
</tr>
<tr>
<td>Comparison</td>
<td>20.0</td>
<td>20.0</td>
<td>0.0</td>
<td></td>
<td>.041*</td>
</tr>
<tr>
<td>Oximetry</td>
<td>SSB</td>
<td>99.2</td>
<td>99.4</td>
<td>0.2</td>
<td>0.163</td>
</tr>
<tr>
<td>Comparison</td>
<td>99.2</td>
<td>99.4</td>
<td>0.2</td>
<td></td>
<td>0.962</td>
</tr>
</tbody>
</table>

*Note: The * indicates that the Mann Whitney Test was used.*

As previously described, the systolic blood pressure data set showed statistical significance at \( p < .001 \) with a mean change of 14.8 point drop in systolic blood pressure. The other vital sign parameters described were not statistically significant. The 2-sample t-test was used to evaluate the comparison group. The mean change in the comparison
group—the mothers who did not receive the SSB intervention—was a 3.8 point increase in systolic blood pressure. The Mann Whitney test was used in place of the t-test when evaluating respiration because non-normal data was described.
Chapter V: Discussion

This chapter provides an interpretation and discussion of the study findings and their significance for nursing research and practice. The limitations of this study are presented and specific recommendations are made concerning future research studies which might seek to address the best time to initiate SSB and the potential health benefits are suggested.

A quasi-experimental pretest-test design was used with 17 women who had undergone non-emergency cesarean sections. After delivery, the infants were taken to a warming unit to have their APGAR score and vital signs measured, vitamin K and eye ointment administered, and identification banding completed. Each baby was then placed horizontally across the mother’s chest for SSB while the mother’s incision was being closed. Maternal blood pressure, heart rate, respiratory rate, and pulse oximetry were measured immediately before SSB and three minutes after SSB had begun. Each mother completed a five-question survey reflecting her satisfaction with the SSB experience in the operating room. The systolic blood pressure result was clinically significant from the pre-test to the three-minute test value. Diastolic blood pressure, heart rate, respiratory rate and pulse oximetry values were not clinically significant from pre-test to the three-minute test values.

These results can be explained by what occurs in the brain during SSB: When a baby is placed on a mother’s chest immediately following birth, the stimulation of sensitive nerves informs the brain to release central oxytocin; this results in a stabilization of vital signs and cardiorespiratory functions (Bystrova et al., 2009, p. 97). When the
medulla oblongata is stimulated by central oxytocin, the brain’s functions switch from being under sympathetic dominance to being under parasympathetic dominance. This change results in a decrease and stabilization in blood pressure.

No previous data was available with which to compare the maternal blood pressure and heart-rate findings before and during SSB while surgical repair was continuing. However, Johnson et al. (2007) evaluated blood pressure rates both before the woman’s partner joined her in the operating room and after the partner had been present in the operating room for the delivery: the results showed that maternal blood pressure decreased over the 45-minute surgical period. Johnson suggested that the decrease was due to lower levels of anxiety that may have resulted from spousal presence and support (Johnson, 2007, p. 573).

Although the results presented here, while seminal, are limited, it still would seem worthwhile to consider carrying out a future study with a larger sample size and this project’s same design. The logical next step for a future study would be to compare the blood pressure and heart rate of mothers who do and who do not receive SSB during surgical repair to determine which situation offers the best results in terms of maternal hemodynamics. Yet another study with additional outcome measures could be focused on maternal pain, respiratory rate, and pulse oximetry. One could also choose to address whether cesarean section mothers regulate their newborns’ body temperature in the chill of the operating room as well as vaginally delivered mothers do, considering that they are under the influence of different medications. Future research would be needed to determine if morbid obesity and macrosomia create limitations or contraindications to
SSB, and at what BMI (body mass index) this intervention would become unrealistic. In addition, it should be noted there is only a limited area in the operating room for free movement before the risk of contamination to the surgical field occurs. Further studies could evaluate the optimal time to initiate SSB, so as to provide maximal health benefits to the mother and her new baby.

Limitations/Obstacles

The results presented here are merely pilot data as the sample size was so small that the assumption of normal distribution of data could not even be met. Furthermore, the study was limited by the fact that the varying amounts of medications the mother was under—epidural or spinal, with or without narcotics—were not taken into account when carrying out the data analysis. With a normally distributed sample size, the measures of these co-variates and the outcome measures can be carried out.

Computerized charting while carrying out SSB in the operating room proved difficult. However, a computer on wheels was obtained to allow the transition nurse to remain with the mother/baby couplet at all times. Anesthesia providers presented another significant barrier as they were responsible for taking care of the mother and expressed concern about the baby bonding with the mother while they were still caring for her. After these issues were expressed, they were discussed at the task force meetings. The first concern was to determine who exactly would be responsible for the baby while it was bonding with its mom. It was determined that the transition nurse would carry this responsibility and should not leave the mother’s bedside throughout this time. Should the mother’s partner or support person be able to take on an active role, the transition nurse
could delegate the role of assisting the mother to this person while she held the baby. A surgical position change was requested to accommodate the SSB intervention. The position change involved asking obstetricians to allow the mother to be in reverse trendelenburg for abdominal closure. This request was granted by the obstetricians.

Infant temperature was another concern that had to be dealt with, as operating rooms are kept cool for a variety of reasons. This issue was resolved by ordering a warm blanket that could fit over the baby’s back during skin-to-skin bonding. In the future, this issue will need to be further addressed and monitored. The importance of maintaining body temperature during SSB is well documented in the literature: During SSB intervention, infant temperature has been shown not only to increase to the thermoneutral range when infants are cool, but also to decrease when infants are too warm (Chiu, Anderson, & Burkhammer, 2005, p. 119). Recent evidence from the Cochrane review has also demonstrated the importance of adequate temperature maintenance during SSB (Moore et al, 2009). Finally, the surgeon’s pace and infant transitional time were also factors affecting the length of SSB after delivery.

**Implications for Nursing Practice**

Leadership and teamwork are essential when attempting to implement evidence-based interventions. Transformational leadership, developed first by Burns (1978), is based on the concept of empowering all team members (including the leader) to work together to achieve a shared goal (Zaccagnini & White, 2011, p. 251): to promote staff involvement and ensure that all members are educated and informed.
Throughout the project, it became clear to the primary investigator that without a policy change, the staff would undoubtedly fall back into their previous routine with regard to SSB following cesarean section deliveries. Signs of this become evident to the investigator in the operating room: the staff expressed their resistance to change by complaining that the SSB intervention was preventing them from completing their charting since they were required to monitor the baby. According to the investigator’s logical reasoning, the lack of a policy change could lead to the staff not choosing to offer this intervention to each parturient simply due to the additional nursing time required, and the overall pressure put on them to complete their work. The idea of implementing a policy change was reviewed at the next planning meeting and unanimously approved.

Healthcare policy, whether created through governmental actions, institutional decision making, or organizational standards, creates a mandate that can facilitate or impede the delivery of healthcare services or the ability of the provider to engage in practice to address healthcare needs (AACN, 2006). As the need arises, the advanced practice nurse must be prepared to intervene and improve patient care practices. A permanent policy change can only go into effect when approved by the nurse manager. As advocates for their patients, the DNP can improve patient care in this complex healthcare environment. This project resulted in the creation of a new evidence-based nursing policy for healthy term infants born in the Labor and Delivery Unit of Mercy Medical Center (see Appendix F). This intervention addressed the DNP Essential V-Healthcare Policy for Advocacy in Healthcare.
Information available on SSB in the literature suggested the need to implement the best evidence for practice. This scholarly project made use of the Factors Influencing Policy Decision Making model to determine the necessity of a policy change within the institution. The extremely complex issue of policy development consists of several phases, known collectively as the policy cycle (Friis & Sellers, 2009, p. 64).

Figure 2.

These policy development phases include the examination of several parameters:

1) Population Health: The population at risk for not receiving health benefits from this positive intervention was the mother/baby couplet delivered by cesarean section.
2) Assessment of potential interventions: Initiating SSB in the operating room after the initial newborn assessment and transitional period was the intervention. When looking at the effectiveness of this option, it was noted that research evidence has shown many benefits such as a reduction in maternal anxiety, an increase in the mother’s positive feeling toward her newborn, and ease of breastfeeding—which alone has another set of positive health benefits (Bystrova et al., 2009, p. 108). A cost-benefit analysis was also carried out.

3) Alternative policy choices: A variety of different policy ideas were presented to the collaborative task force group. Effort was directed at facilitating discussion and gathering different clinical perspectives. Several clinicians wanted to implement SSB in the recovery room, while others wanted to initiate SSB in the operating room. Discussion led to the decision of when to offer the SSB intervention. The group determined that there was no reason to delay SSB in the operating room, unless this was not the mother’s preference. The literature states that, regardless of the type of delivery, SSB should be initiated as soon as possible (Hung & Berg, 2011, p. 324).

4) Policy Implementation: A policy was drafted using evidence-based research and with the goal of distributing it at the next staff meeting. The research was evaluated after being reviewed by the nursing policy committee. The policy was approved with the understanding that it would be put into effect in the near future, at the discretion of the nurse manager.
5) Policy Evaluation: How well the policy is being adhered to will be evaluated by monitoring whether every cesarean section mother is offered SSB in the operating room. It should be noted whether the process is efficient and if the suggested amount of nursing time is indeed being used. If SSB is not done, a reason should be documented on the quality indicator (QI) tracking sheet. These QI tracking sheets should then be evaluated once a month with the results disseminated at monthly staff meetings. A maternal satisfaction questionnaire should also be used to track satisfaction with the intervention.

The principal investigator plans to present the benefits of SSB in an obstetricians’ practice meeting as well as at an anesthesia meeting so that all are educated on this evidence-based practice initiative, and the benefits of the intervention. SSB should be routinely discussed in the hospital’s centering area group discussions. To date, one centering group has had the opportunity to be educated on SSB prior to their delivery date. Providing education on this concept should allow mothers sufficient time to become familiar with, and ask questions about, the SSB intervention.

**Evaluation**

The first purpose of this study was to evaluate the effects of oxytocin on maternal blood pressure following cesarean section delivery. The second purpose was to evaluate maternal satisfaction with the SSB intervention. With the aim of providing women needing cesarean sections with the necessary education resources to understand SSB and obtain its benefits, this study provided insight into the complexity involved in making clinical practice changes in the operating room during cesarean sections. The research
project and all parts of the new SSB policy were continuously evaluated throughout the process giving an impetus to exploring other factors and influences associated with SSB. Changes to the plan if needed would be approved through the IRB before they were implemented. The principal investigator will report to the IRB at its May 2013 meeting.

**Conclusions**

Many professional organizations, including the WHO and the AAP, have published recommendations promoting the benefits of SSB and rooming-in for mothers and their new babies, instead of allowing routine separation (WHO, 2009; APA, 2005). The evidence demonstrates positive outcomes from SSB (Bystrova et al., 2009, p. 109; Moore et al., 2009, p. 10). The results of this study showed that the SSB intervention was beneficial to the mothers who participated and that 100% of mothers were satisfied with the SSB intervention. Collaboration among surgeons, labor nurses, and transitional nurses was necessary. Transformation leadership was demonstrated throughout the SSB project as barriers were encountered and changes implemented. A low-cost, positive health intervention, SSB showed clear benefits when promoted after cesarean section deliveries in the operating room as part of this scholarly project. The role of the DNP leader is immeasurable in the opportunities it offers to affect change and influence nursing policy and clinical practice.
References


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# Appendix A

### Table: Skin-to-Skin Bonding

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Task Name</th>
<th>Start</th>
<th>End</th>
<th>Duration</th>
<th>Complete</th>
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<td>3/3/2012</td>
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<td>1 month</td>
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<td>7/3/2012</td>
<td>1 month</td>
<td>In Progress</td>
</tr>
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<td></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>
The Golden Hour

The biggest challenge for your baby after birth will be learning to control body temperature, heart rate and breathing.

After drying baby, we will place him under your gown so he is resting between your breasts, over your heart. As the baby listens to your heartbeat and recognizes your smell he quickly calms. This is called skin to skin transition.

A decrease in crying lowers his stress level which slows his breathing and heart rate. The warmth of your body will raise his temperature and keep him warm. His blood sugar will be higher because he is not using energy to stay warm or by crying. We would like your baby to remain skin to skin until after the first breastfeeding. Breastfeeding babies tend to nurse better if they are able to nurse in the first hour or so after birth. If you are formula feeding we will keep baby skin to skin for 30-60 min. For mom, immediate skin to skin contact provides a better release of mothering hormones which help to control bleeding after delivery by contracting your uterus. These same mothering hormones improve bonding, giving you quiet first minutes together as a new family.

Here at Mercy we are excited to provide this opportunity for the best progression to life outside of the womb for your baby.
Appendix C

May 8, 2012

Sandra Luna, MSN, CRNA
Anesthesiologist
9633 Marvinville Road
Wooster, OH 44691

In Re: Skin to Skin Bonding and Cesarean Section Delivery

Our Study #201207 Meeting Date: 5/2/2012

Dear Ms. Luna:

This letter will serve as formal notification that the Mercy Medical Center's Institutional Review Board approved the above-referenced study for a period of one year.

As principal investigator for a study involving human participants, you assume certain responsibilities to Mercy Medical Center and the Mercy Medical Center Institutional Review Board, as specifically noted in the New Protocol Checklist附件. You identified this letter as formal notification of IRB approval and may be provided to the sponsor company to verify the approval by the IRB of the above-referenced study. The Mercy Medical Center IRB is accredited with AAIPR4215.

Should you have any questions or if I can be of any further assistance, please feel free to contact me.

Sincerely yours,

[Signature]

A. Leslie Aseo
Chairman, IRB

AL Aseo
Appendix D

KENT STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD
APPLICATION FOR APPROVAL TO USE HUMAN RESEARCH SUBJECTS

Move through this document using TAB or mouse. DO NOT USE THE ENTER KEY. Please type all information.
HANDWRITTEN FORMS WILL NOT BE ACCEPTED. To check a box, double-click in the box.
Submit completed form with signatures and all required attachments to the IRB REVIEWER associated with your Department or College, or to Office of Research Safety and Compliance, Research and Graduate Studies, 224 Cartwright Hall, Phone: 330-472-2704.
Project Title: Skin to Skin bonding and Cesarean Section Delivery

Principal Investigator
Name: Monica Lutz
Address: 1300 Mercy Drive
Phone: 330.701.7904
Status: ☑ Doctoral Student
Project:
☑ Faculty Research
☐ Student Dissertation
☐ Student Thesis
☐ Course Requirement: (Course #)
☐ Other: (Specify: )

KSU Faculty Co-Investigator(s) (Use additional sheets if necessary)
Name: NONE except faculty advisor listed below
Address:
Phone:
Status:
☑ Faculty
☑ Doctoral Student
☑ Graduate Student
☑ Undergraduate Student
☑ Other: (Specify: )

Faculty Advisor (If PI is a student)
Name: Dr. Connie Tezie
Address:
Phone: 330-572-8836
Email: ctezie1@kent.edu
Department: Nursing

Protocol Funding: ☑ Net-applicable ☑ Pending ☑ Awarded ☑ Federal ☑ Yes ☑ No
Funding Agency: KSU Sponsored Programs File Number:

Estimated Project Duration: Starting Date: upon approval (But not before approval is obtained) Ending Date: May 30, 2013

IREB Review Determination
☑ Level I – Exempt, Category
☑Level II – Expedited, Category
☑Level III – Full Board review
☑Disapproved
Primary Reviewer Date
Secondary Reviewer Date

IREB Administration Action
☑ Approved Level I – Exempt, Category
☑ Approved Level II – Expedited, Category

Administrator, IRB Date
Chair, IRB Date

Full Board Review Action
☐ Approved ☑ Contingent Approval ☑ Tabled ☑ Disapproved
Meeting Date:

AGENDA Date
Correspondence
☐ E-mail approval
☐ Date
☐ E-mail notice of annual review
☐ Date
## Appendix E

### Skin-to-Skin Bonding and Cesarean

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### Control (not Skin-to-Skin) Cases

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POLICY MANUAL

Title/Description:
Skin-to-skin / Normal Newborn following Vaginal or Cesarean Section Delivery

POLICY:
To provide guidelines for skin-to-skin holding following vaginal or cesarean section delivery. Skin-to-skin for the healthy newborn is an intervention that promotes the health and well-being of both infant and mother.

PURPOSE:
Research findings support the benefits of skin-to-skin holding in the first hours after birth. Some of the benefits for infant and mother are:
A. Infant has improved physiologic stability including faster stabilization of blood sugar, respiration, heart rate and temperature.
B. Breastfeeding initiated sooner.
C. Increased milk production, more successful breastfeeding.
D. Facilitates bonding and attachment.
E. Infants cry less.

SPECIAL CONDITIONS:
Following cesarean section infant will be placed skin-to-skin after uterine closure.

CRITERIA:
Stable temperature and vital signs

PROCEDURE
1. Educate family about skin-to-skin prior to delivery.
   a. Allow the mother to decline skin-to-skin after delivery.
   b. Use the parent handout “Skin-to-skin after delivery”
2. Following vaginal delivery, infant will be placed on mother’s abdomen, dried and stimulated. Infant will then be placed on his abdomen directly on mom’s chest between her breasts. A hat should be placed on infant and a warm blanket across mom and baby.
3.
4. Infant should remain in direct skin-to-skin contact for the first hour after birth or until after the first breast feeding.
   POINT OF INTEREST: If mother is formula feeding, skin-to-skin for the first hour should be encouraged to facilitate neonatal transition.
5. Following cesarean birth, infant will be taken to the warmer until after uterine closure and initial transition.
   a. Infant then will be placed skin-to-skin on mom’s chest with support person assistance.
   b. Transition nurse will monitor and maintain responsibility for baby during skin-to-skin.
   c. Infant will be transferred to recovery room in crib then skin-to-skin can be resumed once mom is in recovery and stable.
   d. Infant will remain skin-to-skin until after the first feeding is complete or for the first hour in recovery room.
   e. If mom is formula feeding, skin-to-skin should still be encouraged.

DOCUMENT:
Document length of time baby is skin-to-skin