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Quality Improvement Report

Doulas in the Operating Room: An Innovative Approach to Supporting Skin-to-Skin Care During Cesarean Birth

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Introduction: Skin-to-skin care (SSC) immediately after birth is recommended for all women and their newborns. Barriers to SSC after cesarean birth lead to delays in initiation of this practice. The purpose of this quality improvement project was to implement an innovative approach with volunteer doulas to support initiation of SSC after cesarean for all clients.

Process: Volunteer doulas in a well-established hospital-based program within an academic health center were trained to provide care during scheduled cesarean births in the operating and recovery rooms. Data on rate and time of SSC and client and nurse satisfaction were collected for a 12-week period.

Outcomes: Sixty-six women received doula-supported care in the operating room. All medically stable woman-newborn couplets with complete data (N = 58) initiated SSC in the operating room and were included in the data analysis. Forty-eight women completed a feedback survey after birth. Scores indicated that clients agreed or strongly agreed that the doula was an important part of the birth experience. Feedback from labor and delivery nurses indicated highly positive attitudes about the importance of SSC and the presence of volunteer doulas. All nurses surveyed who had participated in doula care (n = 20) agreed or strongly agreed that they were satisfied with the doulas and that the doulas were prepared for this role.

Discussion: This project demonstrates that volunteer doulas can be prepared to provide supportive care to clients during and immediately after cesarean birth. Doulas can play an integral role in supporting the initiation of SSC after cesarean birth and are perceived as an important member of the maternity health care team by clients and nurses.

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INTRODUCTION

Skin-to-skin care (SSC) is recommended by the World Health Organization and the American Academy of Pediatrics for all women and newborns, regardless of newborn-feeding method or type of birth. These recommendations state that for all stable women and their newborns, SSC should begin immediately after birth and continue through at least the first hour of life.[1,2] Studies have shown that SSC helps stabilize newborn body temperature[3] and is associated with less hypoglycemia.[4] Evidence also suggests that SSC may reduce the incidence of postpartum hemorrhage.[5] After cesarean birth, SSC is associated with improved breastfeeding success and increased bonding and maternal satisfaction.[6–8] There are significant emotional and psychological implications for initiating SSC. Studies demonstrate the importance of SSC in parent-newborn bonding and confirmation of the parents' identity as mother or father.[4,9]

Women giving birth by cesarean are likely to experience a delay in the initiation of SSC.[10] Efforts to provide a more client-centered approach to cesarean birth are needed to support women and families during this pivotal life experience. Several practice models for SSC in the operating room have been initiated recently and are associated with high levels of client satisfaction.[11–15] A recent study interviewed women who experienced SSC after cesarean birth and revealed the significant impact of this initial contact. Women described having their newborns with them for SSC in the operating room as calming and relaxing, and it allowed them to tune out the operating room environment.[16]

This quality improvement project took place at a major academic health center in which labor and delivery unit staff had initiated the practice of SSC in the operating room. However, implementation of this practice was inconsistent and often interrupted. Observations by the authors and personal communication revealed that the largest perceived barrier to consistent SSC in the operating room was lack of sufficient staff. Although many nurses were committed to initiating SSC in the operating room, they were challenged to assist women and newborns with maintaining SSC. Furthermore, there were often not enough staff present to safely transfer the woman and newborn from the operating room table to the postanesthesia care unit (PACU) and still maintain SSC.

The primary purpose of this quality improvement project was to implement an innovative approach with volunteer doulas to support initiation of SSC after cesarean for all clients by providing specially trained volunteer doulas to provide nonclinical support to women and newborns in the operating and recovery rooms. Birth doulas provide continuous physical, emotional, and informational support to individuals before, during, and just after childbirth.[17] In addition to improved physiologic birth outcomes, women who experience

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Quick Points

- ✦ Initiation of skin-to-skin care in the operating room is challenging because of competing responsibilities among staff.
- ✦ This quality improvement project introduced specially trained doulas into the operating room to provide support to women during cesarean birth.
- ✦ Skin-to-skin care was successfully initiated in all stable woman-newborn couplets who experienced doula support in the operating room.
- ✦ Doulas may play a significant role in increasing rates of skin-to-skin care in the operating room.

continuous support have reported less dissatisfaction associated with their childbirth.[18] The main outcomes evaluated were rate and time of initiation of SSC after implementation of doula support and client and nurse satisfaction with doula support.

PROCESS

Setting

The project took place on a 15-bed labor and delivery unit within a public academic health center in the southeastern United States. The unit serves a diverse client population, including low-risk women and those with considerable risk factors. High-risk maternity clients are transferred to this tertiary care setting from around the state for specialized care. The maternity care providers caring for clients on the unit include certified nurse-midwives, obstetricians, maternal-fetal medicine specialists, and family medicine physicians. There are 3 unit-dedicated operating suites and 2 PACU beds. Approximately 3800 births per year take place on this unit, with a cesarean rate of about 30% of all births. The health center is a Baby-Friendly designated facility[1] and is well known in the community for being an innovative, client-centered environment for birthing. The health center has a well-established hospital-based volunteer birth doula program (Birth Partners).

Key Stakeholders Engaged

Stakeholders were involved in this intervention from the start of its development. The project lead engaged in discussion with the labor and delivery management team regarding the steps needed to initiate and sustain the project. The first step included securing approval from the Women's Hospital director. Further discussions with nursing staff, maternity care and anesthesia providers, and members of the doula team occurred at staff meetings, individual meetings, and through email correspondence. Key stakeholders on the unit were informally interviewed. Nurse champions agreed to help develop and offer hands-on simulation training for the doulas in the operating room environment, which provided opportunities to discuss the sterile field, sharing the small space at the patient's side with anesthesia providers, and other potential challenges. The staff's readiness to embrace SSC in the operating room as a practice change as well as the doula program's positive regard within the health system provided the necessary foundation for acceptance of this innovation. The intervention was endorsed by stakeholders, the health center's nursing quality and research department approved the project proposal, and the institutional review board confirmed it as exempt from review.

Intervention

The project used a postimplementation review design. The purpose of postimplementation reviews are to determine 1) if the aims were met, 2) what might be done differently to continue to improve the intervention in the future, and 3) if there are lessons learned that can be applied to this and future projects.[19] The project included 2 phases. Phase one occurred before the practice change was implemented and included engagement with stakeholders, surveying the labor and delivery nursing staff (all day-shift nurses [N = 35] were invited) about their perceptions of the proposed practice change, and educating staff and maternity care providers about the practice change. The project lead provided information to nurse managers and maternity care providers regarding the planned intervention, which they shared with their teams. Managers made suggestions regarding the timing of doula shifts for the operating room and provided feedback on the planned client and family information before it went to print. All nurses and maternity care providers on the unit received information about the practice change through email, staff meeting announcements, and personal communication.

While the nurses and maternity care providers were learning about the practice change, Birth Partners volunteer doulas participated in a hands-on 4-hour training course focused on the care of clients experiencing cesarean birth. This course was offered by the project lead, program intern, and a labor and delivery nurse and included a birth simulation on the unit. Training included information about appropriate locations for doulas in the operating room, safe newborn positioning, and breastfeeding initiation. Simulations were also conducted for a cesarean birth and subsequent transfer to the PACU.

The second phase included implementing the practice change and collecting outcome data on SSC rate and time of initiation for 12 weeks. Note that because SSC was not part of the documentation template in the electronic health record prior to this project, it was left to each nurse to document if SSC was initiated and any details related to time of initiation or length of SSC. Therefore, it was not possible to collect data with any accuracy on rates or specifics of SSC before the implementation of this project.

Table 1. Women's Experience with Doula Support During Cesarean Birth (N = 48)[a]

Survey Question	Score[b] Mean (SD)
Doula help *before* my cesarean made me feel supported	3.67 (0.88)
Doula help *during* my cesarean made me feel supported	3.68 (0.91)
My doula helped my baby and me with skin to skin in the operating room	3.76 (0.71)
My doula helped my baby and me with skin to skin after surgery in the recovery room	3.50 (0.85)
My doula was an important part of my birth experience	3.48 (0.97)
I will tell my friends and family to ask for a doula when they have a baby	3.56 (0.90)

[a]Of 58 women who experienced doula support during cesarean birth, 48 completed the survey.
[b]Items on the table are the survey questions and were scored on a Likert scale ranging from 0 (strongly disagree) to 4 (strongly agree).

After 12 weeks of the practice change, the labor and delivery nursing staff were surveyed again to be sure that their perceptions were not adversely impacted by the practice change. Clients also completed surveys on their experiences.

The specially trained doulas were available to attend clients scheduled for a planned cesarean birth each weekday morning during the implementation phase. All planned cesarean births at the health center take place during this time. The most common indications for the procedure are previous cesarean birth and fetal malpresentation. All women presenting for a scheduled cesarean were invited to participate in the practice change. Only women whose cesarean births overlapped with doula care of another client in the operating room were not included.

Women initially met their doula when presenting to the labor and delivery unit for preparation on the day of cesarean birth. Clients were invited to assist in the evaluation of this new practice change by answering questions about their prior experience with SSC and doula care. Women were supported by their doula during placement of regional anesthesia and throughout the surgical procedure. When applicable, partners were included in the birth experience.

After the birth, 2 nurses were consistently present through initial assessment of the newborn. After newborn stabilization by the nursing staff, the doula assisted the nurse with safely placing the newborn skin to skin on the woman's chest. The doula remained with the client and ensured continued safe positioning of the newborn and provided comfort measures for the client. At least one nurse remained present in the operating room after the birth and regularly assessed the woman and newborn per unit protocol. There was no change in nurse staffing as a result of doula presence in the operating room.

The doula assisted with transfer to the PACU and stayed with the client through the first hour or more of the newborn's life. During this time, the doula assisted with teaching and supporting safe newborn positioning, SSC, and initiation of breastfeeding. Clients were later visited by a volunteer doula on the first or second postpartum day.

Evaluation

The primary outcome measure was initiation of SSC in the operating room with the expectation that all stable clients achieve this goal. Data collected by the doulas included time of birth, time of initiation of SSC, time of any interruptions in SSC, indications for delays or interruptions, and data related to SSC during transfer to the PACU. Three tools were developed by the authors and used in this project: a data collection tool completed by the volunteer doula, a survey for labor and delivery nurses, and a client feedback survey. The surveys were reviewed by clinical and educational experts for content and face validity. Responses were indicated using a Likert scale from 0 to 4 (= strongly disagree, 1 = disagree, 2 = neutral, 3 = agree, and 4 = strongly agree). The client feedback surveys were collected for 12 weeks after the initiation of the practice change and assessed women's satisfaction with SSC in the operating room and doula support received during their experience. Table 1 includes the survey questions. The preimplementation nurse survey was composed of 6 items. The postimplementation survey included the same 6 items with 4 additional questions that referred to the nurses' perceptions of working with the volunteer doulas in the operating room and PACU. Table 2 includes the nurse survey questions. Outcomes were collected from the labor and delivery nurses before the practice change and again 12 weeks after initiation of the practice change. A mean satisfaction score total was calculated for both the client and the nurse surveys by adding the mean score for each of the 6 items on the survey and averaging the sum.

Data were assessed using IBM SPSS version 24 (IBM Corp., Armonk, NY). Descriptive statistics were used to evaluate the rates of SSC, time of initiation of SSC, types of interruptions, and responses to the client and nurse surveys.

OUTCOMES

Demographics and Care in Operating Room and Postanesthesia Care Unit

Sixty-six women experienced doula-supported cesarean birth during the data collection period. The mean (SD) age of women was 32 (5.8) years. The mean (SD) number of previous cesarean births was 1.2 (1.02). Most (92%) of the women had never experienced doula care. However, 45% knew about the role of doulas. Of the 66 participants, 2 were excluded because of lack of sufficient data. Of the 64 woman-newborn couplets for whom there were complete data, 6 did not initiate SSC because of neonatal or maternal instability. In 5 of those cases, newborns were unexpectedly transferred to the neonatal intensive care unit, and in one case, the woman experienced complications that prevented SSC in the operating room.

Table 2. Labor and Delivery Nurses' Experience of Doula Care During Cesarean Birth, Before and After Implementation of Doula-Supported Skin-to-Skin Care

Survey Question	Score[a] Before Implementation (n = 26) Mean (SD)	Score[a] After Implementation (n = 23) Mean (SD)
Skin to skin is a nursing priority when the right resources are present	4.00 (0.00)	3.91 (0.29)
Skin to skin is important to do in the OR	3.58 (0.64)	3.65 (0.57)
Birth Partners volunteer doulas are an important part of the care team on L&D	3.69 (0.47)	3.70 (0.47)
Birth Partners doulas can help nurses by supporting patients	3.88 (0.33)	3.96 (0.21)
Birth Partners doulas can effectively help with skin to skin in the OR	3.58 (0.99)	3.70 (0.64)
Birth Partners doulas can effectively help with skin to skin in the PACU	3.77 (0.51)	3.87 (0.45)
Birth Partners doulas are prepared for supporting patients in the OR[b]	–	3.45 (0.51)
I am satisfied with Birth Partners doula care in the OR[b]	–	3.55 (0.51)
Birth Partners doulas are prepared for supporting patients in the PACU[b]	–	3.65 (0.49)
I am satisfied with Birth Partners doula care in the PACU[b]	–	3.60 (0.50)

Abbreviations: L&D, labor and delivery; OR, operating room; PACU, postanesthesia care unit.
[a]Items on the table are the survey questions and were scored on a Likert scale ranging from 0 (strongly disagree) to 4 (strongly agree).
[b]n = 20. Only 20 nurses had experienced collaborative care with a volunteer doula by the time the survey was done.

All 58 of the medically stable couplets initiated SSC in the operating room. The mean (SD) interval between time of birth to initiation of SSC was 11 (9) minutes. When SSC was interrupted in the operating room, the mean (SD) time of interruption was 24 (21) minutes after birth. The most common reasons for interruption of SSC were transfer to the PACU and maternal request because of nausea. One-third of stable couplets were transferred to the PACU while maintaining SSC on the woman's stretcher. Two-thirds of the stable newborns were transferred to the PACU by bassinette. About half (52%) of the newborns had SSC time with a partner or client's support person at some point during doula care. There were no incidents of clinical oversight or patient harm in any of the cases during this practice change. There were no additional costs to the hospital-based doula program as a result of this project.

Women's Experience

Women's evaluation of doula care in the operating room is included in Table 1. Forty-eight women completed the 6-item survey on the first or second postpartum day. The mean score was 3.61 (possible range 0-4). Most women (42 of 48, 87.5%) agreed or strongly agreed that the doula was an important part of the birth experience.

Labor and Delivery Nurse Feedback

The perceptions of labor and delivery nurses about the importance of SSC and the role of the doula supporting SSC were high before and after the project was implemented. Twenty-six (75%) nurses completed the preimplementation survey, but only 20 (57%) were able to experience collaborative care with a Birth Partners volunteer doula in the operating room by the time of the postimplementation survey (because of morning-only scheduling). Twenty-three (66%) nurses completed the same items in the postimplementation survey (mean scores of 3.75 before and 3.8 after; Table 2). One hundred percent reported that they agreed or strongly agreed that the doulas were prepared to support clients in the operating room and PACU and that they were satisfied with the doulas in both of these sites.

DISCUSSION

This quality improvement project is an example of an innovative approach to support clients during the cesarean birth experience. This project demonstrates that the presence of specially trained doulas may improve initiating SSC during surgical birth and advancing practice toward SSC in the operating room becoming an expected norm for all stable women and newborns. Previous reports have successfully introduced SSC in the operating room; however, doulas have not been included in the care team. Lack of space in the operating room has been reported as a barrier to including doulas in the care team,[20] but this project successfully incorporated the doula at the client's bedside.

Women receiving volunteer doula care as part of their cesarean birth demonstrated high levels of satisfaction with their experience. These positive findings are consistent with previous studies assessing women's experiences with doula support, including during labor and birth[18] and during first-trimester surgical abortion.[21,22] Notably, in this project, clients did not have the opportunity to meet their doula until the morning of the scheduled cesarean, and fewer than half of the clients were aware of the doula role when introduced to the doula. It is possible that satisfaction could be even higher if individuals have an opportunity to develop a rapport with their doula.

This project provided an opportunity for volunteer doulas to closely collaborate with health care professionals, including anesthesia providers and obstetricians. The positive survey results among nurses support previous work demonstrating that labor and delivery nurses who work with doulas more frequently tend to have more favorable views of collaborating

with doulas on client care.[23] The positive perception of doulas that nurses held before the project was implemented also reveals that nursing staff prioritized the practice of SSC after birth when the right resources were present and that they valued SSC in the operating room.

Reports on specific timing related to initiation or interruptions of SSC in the operating room are currently very limited in the literature. Only one previous quality improvement project described timing of SSC and improved rates defined as occurring within the first 30 minutes after birth.[10] Timing of this developing practice, as well as indications for delays and interruptions, are important data that should be documented in the electronic health record and indicate the need to further examine current nursing and maternity care provider practice routines for improvement. Further education of nursing and medical staff is necessary, including how to safely transfer a woman and newborn to the stretcher and PACU without interrupting SSC.

Information gained from this project provides important evidence to inform next steps in the process of sustainability of the practice change. Offering training to doula volunteers on a regular basis will be key to the success of the intervention. It is vital that doulas be well prepared and available when scheduled for shifts in the operating room. Doula accountability to the program will be fundamental to the success and sustainability of this practice change. In addition, continuing to provide opportunities for communication between the doula program staff and members of the health care team is a vital component to ensure ongoing success and collaboration between doulas and other members of the care team.

Future studies to support such efforts could explore additional benefits of including doulas in the maternal care team for women experiencing cesarean birth. Benefits may include improved maternal and neonatal health outcomes and potential health care cost savings. Such data may be instrumental to securing reimbursement for doula services by third-party payers and would result in the increased accessibility of this unique care.[24,25] Work is needed to explore the potentially significant impact doulas may have on advancing evidence-based birthing practice and interprofessional approaches to health care. Additional research is needed to explore improved health outcomes and health care cost savings associated with doula-supported birth.

Limitations of this project include implementation in only one academic health center and the lack of specific data related to baseline SSC rates because documentation was not required prior to the initiation of this project. Moving forward, the current study provides a solid benchmark for future improvement at this facility.

CONCLUSION

SSC is the best practice for all women and newborns regardless of mode of birth. The operating room is a particularly task-oriented client care environment. The presence of a health care worker whose unique focus is to comfort and support the client is especially valuable in this birthing environment. Doulas provide an opportunity for clients and partners to focus on the birth of the newborn rather than the cesarean surgery. Labor and delivery nurses and clients both provided positive feedback regarding their experience with doula-supported cesarean birth. This project demonstrated that doulas can be trained to play a significant role in supporting this client-centered care practice for individuals experiencing cesarean birth.

AUTHORS

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CONFLICT OF INTEREST

The authors have no conflicts of interest to disclose.

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