Research Summaries for Normal Birth

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ABSTRACT

In this column, the author presents summaries of four research studies that further support the benefits of normal birth. The topics of the studies address midwifery care practices, labor induction and increased medical costs, vaginal birth after cesarean, and labor support from student nurse-doulas.

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STUDY EVALUATES EFFECT OF MIDWIFERY CARE PRACTICES ON LACERATIONS OF THE GENITAL TRACT AT BIRTH

- Albers, L. L., Sedler, K. D., Bedrick, E. J., Teaf, D., & Peralta, P. (2005). Midwifery care measures in the second stage of labor and reduction of genital tract trauma at birth: A randomized trial. *Journal of Midwifery and Women's Health*, 50(5), 365–372.

Summary

This randomized controlled trial compared the effectiveness of two techniques commonly used by midwives to prevent lacerations of the genital tract at birth. The study took place in a large teaching hospital where the episiotomy rate among both physicians and nurse-midwives is <1% and where the midwives' management of the second stage of labor routinely involves constant presence, verbal encouragement, and an emphasis on a slow, controlled birth of the baby's head.

Over 1,200 clients of a large nurse-midwifery service were randomized into three study groups. In one group, the midwife applied warm compresses to the perineum and external genitalia continuously during pushing and fetal descent. In a second group, the midwife performed perineal massage with a water-based lubricant during and between pushes. In the third group (the control group) the midwife did not touch the woman's external genitalia at all until the baby's head crowned. Demographic and clinical variables were similar, and 98% of those enrolled in the study upon hospital admission had spontaneous vaginal births.

Twenty-three percent of all participants had no genital-tract trauma, which is defined as having no tissue separation whatsoever. Only 10 women (0.8%) had episiotomies, most often for severe fetal heart rate abnormalities. Only 14 women (1%) experienced anal-sphincter trauma (a third- or fourth-degree tear), and two women (0.2%) experienced a cervical tear. A remarkably high 73% had no trauma or minor trauma not needing suturing.

No differences were found among the study groups in the likelihood or severity of genital tract trauma. Women's satisfaction with the different approaches was not measured; however, of the 5.8% of births where the assigned care practice was halted at the woman's request, three-fourths were in the "massage with lubricant" group. This suggests that this technique may be less acceptable to women than alternative methods. Nulliparous women and those giving birth to infants weighing $\geq 4,000$ g (about 9 lb) were much more likely to tear. Small but significant increases in the likelihood of tearing were found among non-Hispanic white women and those who were educated beyond high school. Finally, two care practices resulted in significantly fewer tears: birth in a sitting position and birth of the baby's head between (rather than with) contractions.

Significance for Normal Birth

This study compared warm compresses and perineal massage with no measures during second-stage labor to prevent spontaneous lacerations during vaginal birth. Although neither intervention reduced the likelihood or severity of lacerations, this study still provides important evidence and suggests that the care practices that support normal birth may also minimize tearing. Almost 1 in 4 women who participated in this study experienced no genital-tract trauma at all, and nearly half of the participants had trauma that was minor enough not to require suturing. These figures are exceptional when compared with data from studies conducted in settings where medical management is the norm.

An important finding in this well-designed study was that the upright sitting position and birthing the baby's head between contractions appeared to minimize tearing. The continuous support of a patient midwife, the emphasis on the gentle and controlled birth of the baby's head, and the conservative use of episiotomy no doubt contributed to the excellent outcomes. Increasing access to midwifery care and encouraging nonsupine positions (especially sitting) at the time of birth decreases women's risk for genital tract trauma.

LABOR INDUCTION CONTRIBUTES TO INCREASED MEDICAL COSTS

- Allen, V. M., O'Connell, C. M., Farrell, S. A., & Baskett, T. F. (2005). Economic implications of

method of delivery. *American Journal of Obstetrics and Gynecology*, 193, 192–197.

Summary

In this study, researchers assessed how type of labor (induced or spontaneous) and mode of birth influence the costs of maternity care in a cohort of low-risk, nulliparous, childbearing women. Data were collected from a birth register that included demographic, medical, and obstetric information for all births occurring in the Canadian province of Nova Scotia. The study focused on the low-risk nulliparous women who gave birth at a tertiary-level maternity facility in Halifax County from 1985 to 2002. Costs that were assessed included staff wages, anesthesia and labor induction agents, and supplies such as delivery packs, catheters, and syringes. Costs associated with maternal readmission to the hospital and for intensive care for the mother or infant were also captured. Importantly, the fee for obstetrical care paid to the physicians in this setting is identical regardless of mode of birth. Also, midwifery care is not available to childbearing women in Nova Scotia.

Of the 27,613 births included in the analysis, 5,233 resulted from induced labors. Women with induced labors were twice as likely (27.3% vs. 13.0%) to undergo cesarean birth as the group of women who began labor spontaneously. Additionally, their infants were significantly more likely to require admission to the neonatal intensive care unit compared both with women beginning labor spontaneously and with women undergoing cesarean birth prior to labor. As a result of these and other factors, the average costs associated with induction of labor (\$1,715) were significantly higher than those associated with both spontaneous onset of labor (\$1,474) and cesarean birth without labor (\$1,532). The researchers reported no significant difference between the cost of births resulting from spontaneous labor and those resulting from cesarean birth prior to labor.

When the researchers examined the average costs of different modes of birth independent of type of labor, spontaneous vaginal birth (\$1,340) was significantly less costly than assisted vaginal birth

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(\$1,594), cesarean without labor (\$1,532), and cesarean in labor (\$2,137). These figures are sure to be higher in the United States, where care is more expensive and where financial incentives tend to exist for physicians to perform operative births.

Significance for Normal Birth

In the United States, the liberal use of maternity-care practices when the evidence shows they are harmful puts women and infants at risk and wastes the nation's increasingly scarce health-care resources. Despite the known risks and higher costs, almost 1 in 5 inductions in the United States are done for the convenience of maternity-care providers and/or their clients (Declercq, Sakala, Corry, Applebaum, & Risher, 2002). All citizens pay for these elective inductions through higher insurance premiums, shrinking employee benefits packages, and higher taxes to support the ever-growing number of uninsured people.

Further research is needed to compare the overall costs of medicalized birth with those of normal birth. In the meantime, this study provides important economic data to bolster the already strong case against unnecessary induction of labor.

WOMEN REPORT HIGH SATISFACTION WITH DECISION TO ATTEMPT VBAC REGARDLESS OF MODE OF BIRTH

- Cleary-Goldman, J., Cornelisse, K., Simpson, L. L., & Robinson, J. N. (2005). Previous cesarean delivery: Understanding and satisfaction with mode of delivery in a subsequent pregnancy in patients participating in a formal vaginal birth after cesarean counseling program. *American Journal of Perinatology*, 22(4), 217–221.

Summary

This prospective study evaluated patient satisfaction with the subsequent birth experience in women who had previously given birth by cesarean. The researchers also studied the effect of participation in a formal, one-on-one counseling program on women's understanding of the risks and benefits of a trial of labor. The study took place in a large, tertiary-care hospital where a formal, funded VBAC counseling program was available to all women eligible for a trial of labor after previous cesarean birth.

The study's 95 participating women completed antenatal questionnaires about their previous cesarean births and attended one-on-one VBAC counseling sessions. A second survey, administered immediately postpartum, evaluated the women's recent birth experiences and included seven multiple-choice questions assessing knowledge about the benefits and risks of VBAC. Additional medical and demographic data were obtained by detailed chart review.

Twenty-seven percent of the study participants planned VBACs and gave birth vaginally, while 19% planned VBAC but underwent repeat cesareans in labor. An additional 17% planned VBAC but underwent repeat cesarean births before labor because their obstetricians no longer deemed them medically eligible for trials of labor. Thirty-seven percent of the study participants chose elective repeat cesarean delivery.

All four groups reported greater patient satisfaction with the current birth than with the primary cesarean birth, with the largest improvement observed in women having planned vaginal births. All of these women rated their postpartum recovery as better than that following their primary cesarean births and stated they would undergo a trial of labor again. Of the women who underwent repeat cesarean birth during labor, 92% were pleased that they had attempted VBAC, with a median score for satisfaction with their decision of 4 on a 5-point scale. Ninety-two percent of all participants scored perfectly on the postpartum test of VBAC risks and benefits.

Significance for Normal Birth

Restrictive hospital policies and physician practices have sharply reduced access to VBAC in recent years; however, even where eligible women have access to this option, many choose elective repeat cesarean birth. Some women may make this choice to avoid feelings of disappointment should a VBAC labor end in another cesarean. The results of this study suggest that fear of an unplanned repeat cesarean need not be a barrier to choosing VBAC. A high proportion (92%) of women who planned VBAC but underwent a cesarean in labor were still satisfied with their decision to attempt VBAC.

Women having planned VBACs gave the highest satisfaction ratings to their birth experience. However, physicians referred only 30% of VBAC-eligible women to the counseling program, and these were disproportionately Hispanic women and clinic

patients. The VBAC rate was a disappointingly low 59%, although VBAC rates over 70% are commonly reported. A more supportive environment for VBAC would have likely resulted in substantially greater numbers of women both planning and having VBACs.

LABOR SUPPORT FROM A STUDENT NURSE-DOULA MAY RESULT IN LOWER USE OF EPIDURAL ANALGESIA

- Van Zandt, S. E., Edwards, L., & Jordan, E. T. (2005). Lower epidural anesthesia use associated with labor support by student nurse doulas: Implications for intrapartal nursing practice. *Complementary Therapies in Clinical Practice*, 11, 153–160.

Summary

In this retrospective pilot study, researchers evaluated the effect on epidural use of labor-support interventions performed by student nurses trained as doulas. Training was provided in an elective, baccalaureate-level course that focused on physical, emotional, and informational labor support rather than on labor and birth nursing care. As part of their training, students were paired with childbearing women who desired doula support and agreed to have a student nurse-doula present at their birth.

The study examined the experiences of 89 women who had vaginal births accompanied by student nurse-doulas during the study period (1999–2002). The doulas collected demographic, medical, and obstetrical data on standardized birth record forms and noted which labor-support interventions they performed. Interventions that are commonly provided by nurses (such as providing a beverage, positioning the woman, or making eye contact) were considered “standard,” while interventions not usually performed by labor and birth nurses in the study settings (such as continuous presence, massage, counter pressure, and use of a birth ball) were considered “complementary.” The total number of interventions in each category provided a cumulative score that reflected the variety of labor-support techniques used by the doula.

Epidural analgesia was used in 67.4% of births. In a statistical model that adjusted for parity (number of previous births) and other confounding

variables, length of labor and number of complementary doula interventions were significantly associated with epidural use. Women with longer labors were 23% more likely to have an epidural than those with shorter labors. Women who had more than five complementary interventions were 38% less likely to use an epidural than those who received five or fewer.

Significance for Normal Birth

While one-on-one nursing care in active labor has not been found to decrease epidural use, the continuous support of a doula—who provides informational, emotional, and physical support throughout labor and birth—has been shown to be beneficial in several randomized controlled trials. This disparity has been blamed on the increasingly technology-intensive environment in which maternity nurses provide care. In this environment, supportive measures such as providing massage and encouraging ambulation are eclipsed by continuous electronic fetal monitoring, medication administration, and management of intravenous lines. In this intriguing pilot study, student nurses received special training to provide complementary interventions intended to support normal birth and enhance the comfort and confidence of the laboring woman. They attended births in the doula role and were not expected to perform nursing tasks or interventions.

In this study, a higher number of complementary interventions provided by the doulas was associated with a lower rate of epidural use. Further research is warranted to determine the nature of the association. It is possible that the student nurses, when given the skills and the freedom to provide such supportive care to laboring women, successfully induced a “doula effect.” Whether this effect will persist after the students enter the work force as maternity nurses remains to be studied.

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