Research Update

Cesarean Birth from Three Research Perspectives

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Abstract

Issues surrounding cesarean birth are of interest to researchers from varied disciplines and nations. In this column, three studies that examine aspects of cesarean birth are reviewed. One study presented a review of 11 studies and found differences in the perceptions of white and minority mothers toward labor, vaginal birth, and cesarean birth. In a second study on infant outcomes, Japanese researchers found differences in transient tachypnea in infants born in the first half of the 37th week gestation and those born in the second half of the 37th week and the 38th week of gestation. In a third study conducted in Norway, researchers found more complications when cesarean birth occurred at advanced dilation. The three studies' implications for childbirth educators are discussed.

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Issues surrounding cesarean birth are of interest to both perinatal researchers and childbirth educators throughout the world. This column presents a review of three studies that examined cesarean birth from the perspective of mothers, pediatricians, and obstetricians.

Subsequent Births after Cesarean: Mothers' Perspectives

Why might a woman choose, or not choose, a vaginal birth after a previous cesarean birth? Researchers from the Oregon Health and Science University in Portland, Oregon, noted conflicting evidence on the safety of

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vaginal birth after a cesarean and, thus, systematically reviewed 11 studies published between 1980 and 2002 and containing original patient data on women's birth preferences (Eden, Hashima, Osterweil, Nygren, & Guise, 2004). Seven studies provided complete reporting of patient eligibility and were the focus of this paper. In six of these seven studies, mothers reported they desired a vaginal birth because their recovery period would be brief and they wanted to return quickly to caring for their other children. In 4 of the 11 studies, safety for the mother and infant was cited as a reason for choosing vaginal birth after a previous cesarean. Thirty-nine percent of minority women said their health-care provider was an important influence on their birth choice, in contrast to 19% of white women who named their provider as a main influence. Minority women were more likely to perceive labor as "a painful necessary evil that does not relate to one's intrinsic worth" (p. 54), while white women described labor as "a once-in-a-lifetime experience not to be missed" (p. 54).

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In the review by Eden and colleagues (2004), the different perspectives between white and minority women are interesting. Socioeconomic status indicators were similar, but white women had more general education and childbirth education than minority women. Forty-three percent of minority women attended a childbirth class during their first pregnancy compared to 81% of white women ($p < .0001$). Minority women were also less likely to have been advised that a vaginal birth was possible after a cesarean birth. Identifying differences in cultural perspectives is an important contribution of this paper, and one that should concern all childbirth educators.

Neonatal Outcome after Elective Cesarean: Pediatricians' Perspectives

A study in Japan raised the question of the effect on neonatal outcomes when an elective cesarean takes place prior to the completion of the 37th week of gestation (Yamazaki et al., 2003). In this study, the authors examined the health of infants in the neonatal period (from birth to 28 days). Eighty-one infants were born in the first half of the 37th week of gestation and 15 were born from the latter half of the 37th week through the 38th week. All of the infants were singletons. Women with placenta previa and medical complications of pregnancy were not included because of the possibility these conditions could affect infant health. The estimate of gestational age was based on ultrasound in the first trimester.

In the total group of 96 infants, 25 (26%) had significant clinical symptoms. The most common complication was evidence of breathing difficulties (transient tachypnea of the newborn). A statistically significant difference in breathing difficulty occurred in the group of infants born in the first half of the 37th week when compared with the group born in the second half of the

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37th week and the 38th week. This finding was consistent with those in studies by van den Berg, van Elburg, van Geijn, and Fetter (2001) and by Morrison, Rennie, and Milton (1995). Planned cesareans have the risk of birthing infants earlier than if labor had begun spontaneously. Researchers believe that, physiologically, labor and vaginal birth enhance neonatal lung adaptation through a catecholamine surge that stimulates the reabsorption of fetal lung fluid and the release of surfactant. Although some studies have suggested that an increased incidence of hypoglycemia also occurs in infants born in the 37th week of gestation, no significant difference was found in the study by Yamazaki and colleagues (2003).

While transient tachypnea is not permanent and is rarely life threatening, it can interfere with early breastfeeding and, in some birth sites, may result in the baby being kept in the hospital nursery for observation rather than with the mother.

Complications of Cesarean Births: Obstetricians' Perspectives

Cesarean birth rates in Norway increased from 12.6% in 1990 to 13.4% during the period when Renate and colleagues (2004) conducted their study, December 1998 to July 1999. In this prospective population-based study of 2,751 cesarean deliveries, 21.4% of women had one or more complications. When surgery occurred at 9 to 10 cm dilatation, the complication rate was more than twice as high as when it occurred at 0 cm (32.6% vs. 16.8%; $p < .001$). Complications were 16.3% for planned cesareans and 24.1% for unplanned cesareans. The authors considered this rate minimal because only short-term complications were included. In addition to cervical dilatation, independent risk factors for complications were general anesthesia, low gestational age, and fetal macrosomia.

One might argue that cesarean birth at advanced dilatation was more likely the result of an emergency and, thus, created higher rates of complications. However, when degree of emergency, duration of labor, and rupture of membranes were entered into the analysis with cervical dilatation, the independent factor was cervical dilatation. Renate and colleagues (2004) suggested that "the high number of cesarean deliveries that were performed late in the second stage of labor may indicate that obstetricians tend to choose abdominal delivery when vaginal delivery could be an option" (p.433).

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Some Questions for Childbirth Educators

With more than one in four women in the United States and high numbers of women in other developed countries having cesarean births, the three studies reviewed

here provide some useful information for incorporation into childbirth education classes. Do educators provide opportunities for participants to share their perspectives about cesarean birth? Do they include information about vaginal birth after cesarean when they talk about cesarean birth in their classes? If women are considering an elective cesarean, do educators provide information about possible complications, including transient tachypnea as described in the paper by Yamazaki and colleagues? If, as Renate and colleagues suggest, some cesareans at advanced dilatation might well be vaginal births, do childbirth educators help women formulate appropriate questions when a cesarean is suggested?

Additionally, childbirth educators need a far better understanding of the reasons minority women do not attend childbirth classes. In the near future, demographers predict the current majority population will become a minority population, while minority groups will combine to be the majority population. Educators need to plan now to serve this population in ways that are culturally sensitive to their needs.

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