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RESEARCH

Development and Validation of the Self-Efficacy Regarding Vaginal Birth Scale

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ABSTRACT

Objectives: The purpose of this study was to develop a scale to measure self-efficacy regarding a vaginal birth (SEVB) during pregnancy and to assess its reliability and validity among nulliparous Chinese women.

Design: A panel study.

Setting: Five hospitals in Northern Taiwan.

Participants: The analysis included 700 (second trimester), 637 (third trimester), and 585 (before birth) women who did not have medical indications for cesarean births at the indicated time points.

Methods: The SEVB scale was used to measure the level of confidence in ability to carry the pregnancy to term and give birth vaginally. The scale included nine items, and each was scored on a numeric rating scale from 0 to 10. A higher score indicated a higher level of self-efficacy.

Results: Factor analysis confirmed the one-factor structure, which explained 62.77% and 67.08% of the variance, with Cronbach's alphas for the scale of 0.93 and 0.94 during the second and third trimesters, respectively. The test–retest reliability was 0.73 as determined by the intraclass correlation coefficient. Contrasted group validity supported that those women who preferred cesarean births had significantly lower SEVB scores than women who preferred vaginal births during the second and third trimesters. Those women who tried vaginal births had higher SEVB scores than women who had cesareans without trying vaginal births.

Conclusion: The scale showed acceptable reliability and validity. Health professionals could use the scale to screen women with low self-efficacy during pregnancy and provide appropriate intervention to increase their willingness to try vaginal births.

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The cesarean rate in Taiwan was between 32% and 36% from 2002 through 2015 (Bureau of National Health Insurance, 2015), which is among the highest in the world. Taiwan has a National Health Insurance Scheme (NHIS) that provides coverage for general medical expenses to virtually all of its citizens, including 10 antenatal visits, vaginal birth, and medically indicated cesarean birth. Cesarean births without medical indications are paid by women themselves according to regulations. Almost all births in Taiwan are attended by obstetricians in hospitals. Despite the high rate of cesarean birth in Taiwan, NHIS claims data indicate that only 1.8% of cesarean births are performed at the mother's request without medical indications (NHIS, 2015). There is no gatekeeper system or preoperative/concurrent review for cesarean birth in Taiwan, and obstetrician claims could be inaccurate to prevent nonpayment for cesarean births or loss of patients (Hsu, 2007).

It is believed that a significant proportion of caesarean births in Taiwan are done without medical indication. Researchers reported that approximately 20% of 151 caesarean births at four hospitals in Taipei, Taiwan had no medical indications on the basis of mothers' reports (Chu, Tai, Hsu, Yeh, & Chien, 2010). To control the high cesarean rate in Taiwan, the rate of cesarean birth by institution is listed as a quality indicator for hospital performance and accreditation purposes.

Caesarean birth is believed to be more modern and safer for maternal and child health in Chinese society (Lo, 2003). For obstetricians, natural birth

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is very taxing in terms of time and energy. Under the NHIS in Taiwan, providers receive equal payment for a natural birth and a cesarean birth. In addition, obstetricians may choose a cesarean to ensure the safety of women with slightly concerning symptoms during pregnancy or birth to avoid malpractice suits and/or a high amount of compensation (Han & Lien, 2010).

In a previous qualitative study, researchers suggested that the decision-making process to choose an elective cesarean birth among women centered on controlling the risks of childbirth and ensuring well-being (Huang, Sheu, Tai, Chiang, & Chien, 2013). Pregnant women's beliefs about their ability to cope with childbirth during pregnancy were a determinant in their decisions to have cesarean births. The decision-making process for birth mode among pregnant women started as early as the second trimester, usually before obstetricians discussed the issue with them. Usually in mid-pregnancy, women perceived the threats and fears of childbirth and weighed the risks of birth modes. In late pregnancy, once women decided on cesarean births, their decisions were hard to change. They persuaded stakeholders to agree and gained the required resources for cesarean births (Huang et al., 2013). In a previous study, researchers reported that more than 93% of women who preferred cesarean birth during the second trimester had a cesarean birth (Chu et al., 2010). In Taiwan, obstetricians usually discuss the mode of birth with women after 32 weeks gestation. Even if the obstetrician does not advise in favor of cesarean, a woman can easily find another obstetrician and pay a fee of approximately $400 to have a nonmedically indicated cesarean birth (Bureau of National Health Insurance, 2015).

Once a decision is made to have a cesarean birth, some Chinese women select an auspicious time because of a cultural belief that a person's fate, to a large extent, is determined by the hour, date, and year of birth. Many people believe that an auspicious time of birth has beneficial effects on a child's fate and may also ensure the safety of mothers and children. Therefore, mothers who decide to have a cesarean choose the time and date for the cesarean birth, and obstetricians usually comply. Researchers found that election of an auspicious time for birth was associated with cesarean birth, cesarean birth before 39 weeks gestation, and planned cesarean birth without presence of labor signs (Chien, Lee, Lin, & Tai, 2015; Chu et al., 2015).

The notion of perceived self-efficacy was first proposed by Bandura (Bandura, 1977, 1986). Self-efficacy is defined as a person's own judgment of capability to perform a certain activity to attain a certain outcome (Zulkosky, 2009). Self-efficacy beliefs are significant predictors of choices and behaviors (Bandura, 2004). Previous researchers reported that women with low self-efficacy measured by the Childbirth Self-Efficacy Inventory (CBSEI) experience more fear in giving birth and losing control during birth (Lowe, 2000). The CBSEI is meant to be applied in late pregnancy to estimate women's confidence in applying certain behaviors during labor to cope with childbirth. The CBSEI is designed for women with normal pregnancies that end in normal labor and birth (Ip, Chan, & Chien, 2005; Khorsandi et al., 2008); it is not intended to be used among women who plan to have cesareans without experiencing childbirth. There is no established self-efficacy scale suitable for women in their second trimester of pregnancy or women who prefer cesarean births during pregnancy.

Traditional Chinese culture often classifies a woman's body as good or bad for childbirth and refers to the general reproductive functioning of a woman based on her body size, body shape, and physical constitution (Wang et al., 2010). In Chinese culture, a vaginal birth involves not only a woman's ability to cope with childbirth but also her body size/shape and general reproductive functioning (Huang et al., 2013). The reproductive functioning of a woman includes the ability to conceive, carry a pregnancy to term, and deliver vaginally. In addition, researchers reported that informal tragic birth stories caused negative ideas about vaginal births among pregnant women (Carlsson, Ziegert, & Nissen, 2014; Huang et al., 2013). Women then turned to elective cesarean births as a solution (Huang et al., 2013). Therefore, low self-efficacy regarding a vaginal birth during pregnancy could predict cesarean births without medical reasons in a context where cesarean is loosely regulated.

If providers can screen women with low self-efficacy during pregnancy early using an instrument to measure general self-efficacy beliefs regarding a vaginal birth, interventions to increase

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