FACTORS PREDICTING CHILDBIRTH SELF-EFFICACY AMONG LOW-RISK PARTURIENTS DURING LATENT PHASE OF LABOR

MAO LI

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE MASTER DEGREE OF NURSING SCIENCE
(INTERNATIONAL PROGRAM)
IN MATERNITY NURSING AND MIDWIFERY PATHWAY
FACULTY OF NURSING
BURAPHA UNIVERSITY
2022

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MAO LI : FACTORS PREDICTING CHILDBIRTH SELF-EFFICACY AMONG LOW-RISK PARTURIENTS DURING LATENT PHASE OF LABOR. ADVISORY COMMITTEE: PORNCHAI JULLAMATE, Ph.D., CHINTANA WACHARASIN, Ph.D. 2022.

Childbirth self-efficacy (CBSE) is a vital psychological characteristic for parturients to cope with natural vaginal labor and acquire childbirth satisfaction. Understanding the predictors of CBSE is important for both nurse-midwives and parturients. The purposes of the study were to describe CBSE and to identify factors explaining CBSE including parity, childbirth knowledge, birth companion, professional support, and fear of childbirth among Chinese low-risk parturients. A convenient sampling method was used to recruit 122 parturients from the labor room in the first affiliated hospital of Wenzhou medical university, China. Five instruments were used for data collection, including demographic and obstetrical questionnaire, childbirth knowledge questionnaire, professional support questionnaire, childbirth attitude questionnaire, and the 32-item childbirth self-efficacy inventory, which yielded reliability of 0.702, 0.802, 0.884, and 0.945, respectively. Data were analyzed by descriptive statistics, Pearson product-moment correlation, Spearman's Rho, and Standard multiple linear regression analysis.

The results of this study showed the mean score of CBSE was 225.89 (SD = 47.86) out of 320, which showed maternal CBSE at a relative lower edge of high level. Only three factors combined could explain 30.3% of variance in CBSE, which were professional support (β = .366, p < .001), childbirth knowledge (β = .236, p < .01), and parity (β = .166, p < .05) respectively.

The findings highlighted the significant evidence for future interventions that could focus on these explaining factors to enhance CBSE among low-risk parturients.

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Mao Li

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CHAPTER 1
INTRODUCTION

Background and significance of the study

Childbirth, as a stressful event in life, leads women to confront dramatic biological and psychological challenges. It involves a long process, intense labor pain, physical discomfort, and arisen negative emotions during the labor progress. Women's ability to manage childbirth is the primary area of labor experience, which could positively or negatively affect their perception of childbirth and is mostly reflected in the decision of delivery mode. Over the decades, the rate of cesarean section (CS) has been highly concerned by global countries. In China, the vaginal birth rate has dramatically declined from 95% during the 1950s-1970s (Liu, & Dai, 2015) to 60% in 2015-2016 (Zhang et al., 2022), whilst the CS rate climbed up to 41.6% (Boerma, 2018) that far beyond the maximum threshold of around 15% recommended by the World Health Organization [WHO] (2018a). As the major contributor of the high CS rate, cesarean section on maternal request (CSMR) has become an important public health problem across regions in China (Zhang et al., 2022), which accounted for nearly 10%-23.2% of all CS (Zhao, Gao, Sun, Yu, & Lin, 2020). Among the escalating CSMR, a study including 39 hospitals in 14 provinces of China reported nearly 14.3% occurred during intrapartum (Hou et al., 2017). Multiple drivers of excessive CS in absence of medical indications found were women, communities, health professionals, and organizational factors, among which maternal negative and wrong perceptions are the most important force to raise their preference for CS (Betrán, 2018).

The perceptions towards delivery mode change in maternal preference over time during the perinatal period, especially occurred during late pregnancy and labor. In China, although most women do not initially want to delivery surgically, majority of them are ultimately delivered by CS (Ji, Jiang, Yang, Qian, & Tang, 2015). The study also showed the preference for CS increased from 10% during pregnancy to 28% after birth, indicating that childbirth is a suffering experience (Li, Liabsuetrakul, & Stray-Pedersen, 2014). Labor pain is deemed as one of the most severe types of

pain experienced by humans, and women actually experience higher than expected levels of pain during childbirth (Ngai, 2020). While epidural analgesia has been widely implemented during labor, it lower maternal somatic pain and fear to some degree but also increases relevant complications, such as fever, instrumental delivery, prolonged second stage, early postpartum hemorrhage (Srebnik et al., 2020). It was not actually associated with maternal positive experience and satisfaction with childbirth (Whitburn, Jones, Davey, & McDonald, 2019). In such a medicalized context, women are losing self-confidence in their ability to give birth naturally, conceptualized childbirth self-efficacy (CBSE). It combined with a poor environment of quality care and education, which lead these women to search for a “safe and painless” way to survive, thus choose CS.

Childbirth self-efficacy (CBSE) refers to the maternal capability of using the required strategies, such as some relaxation, breathing, or distractive skills to cope with labor pain effectively (Lowe, 1991) by ensuring women view difficult tasks as challenges rather than threats (Sánchez-Cunqueiro, 2018). Bandura (1977) showed SE played a vital role in the psychosocial determinants of biological function and guides behavior, thus health status, which is postulated to mediate health in two important ways: using health-promoting behaviors and activation of the physiological stress response (Bandura, 1998). In the stressful childbirth process, it assists women to explore their wisdom and infinite power dwelling within them to confront labor and have a better transition from pregnancy to motherhood (Lowe, 1991).

As a natural delivery mode, vaginal birth (VB) starts with regular uterine contraction and slowly dilated cervix progression, the prolonged pain from mild to intensity is suffering, especially during the latent phase of first stage labor. It is generally considerably longer and less predictable according to the rate of cervical change than is observed in the active phase, which can last up to 20 hours and 14 hours in nulliparous and multiparous women, respectively (Hutchison, 2021). The rate of cesarean section in the latent phase of labor was reported to be soared compared with in the active phase of labor (Iobst et al., 2019), however, few studies referred to the prevalence of CSMR during the latent phase of labor. In China, maternal requests for CS during intrapartum were mostly rejected by obstetricians as “pain could not be an excuse for CS” to control the CSMR rate these decades (Wang, 2017), the domain

of maternal psychological changes towards labor suffering, especially maternal CBSE change during the latent phase of labor tend to be ignored. The study showed maternal psychological stress was peaked at this preparatory latent phase (Miller et al., 2019), whose confidence in their coping ability is a crucial asset to lead women to insist on and manage the subsequent birth progress.

In previous studies, maternal CBSE was proved to be beneficial in the whole perinatal period. During pregnancy, the majority of them face inconsistent physical and psycho-social conditions that make them vulnerable, then involve in psychological distress (Rasaily, 2017). Increased CBSE can decrease negative emotions, such as anxiety (Mudra et al., 2020), fear (Salomonsson, Gullberg, Alehagen, & Wijma, 2013), and depression (Duncan et al., 2017), resulting in a better psychosocial adaptation to pregnancy (Hui et al., 2012). During labor, CBSE is associated with confidence in using various strategies to cope with labor pain effectively (e.g., relaxation, breathing, or distractive skills) (Lowe, 1991), relieving subjective pain, and decreasing maternal request for pain medication (Carlsson, Ziegert, & Nissen, 2015; Duncan et al., 2017; Gao, Ip, & Sun, 2011). Higher CBSE could also lead women to cooperate with professionals' advice, and behave themselves appropriately, which can contribute to a better experience of labor (Leap, Sandall, Buckland, & Huber, 2010) and have higher childbirth satisfaction (Sánchez-Cunqueiro, 2018).

From the literature review, it was found that many factors related to CBSE, including age, income, religion, health status, delivery intentions, previous experience, knowledge, support, negative emotions (Attanasio, McPherson, & Kozhimannil, 2014; Ghasemi, Rayyani, & Farokhzadian, 2019; Larsen & Plog, 2012; Neerland, Avery, Saftner, & Gurvich, 2019; Schwartz et al., 2015; Yuksel, 2019). Based on Lowe's CBSE theory, the study chose several factors that were highly correlated with CBSE and focused on most studies. These include parity, childbirth knowledge, birth companion, professional support, and fear of childbirth.

Parity was shown as the positive predictor of parturients' CBSE. Studies found that multiparous women occupied nearly 18%- 49%, who owned previous VB experience had a higher level of CBSE (Hou, He, Sun, & Yang, 2017; Neerland et al., 2019; Soh, Razak, Cheng, & Lau, 2020). With three-child allowed since 2021 in

China, multiparous women are also an important population need pay attention to. Past vaginal birth experiences are unique events that helped women go through the labor process, and equipped them with relevant individual coping strategies for themselves that increase CBSE. However, some researchers yielded different results of no significant association between nulliparous and multiparous with CBSE (Attanasio et al., 2014; Cunqueiro, 2017). Thus, these inconsistent results should be explored.

To the knowledge of childbirth, it was shown that closely associated with CBSE. Acquiring more childbirth knowledge, such as normal progress of labor, distinguishing of labor symptoms, psychological preparation for pain level, and non-pharmacological coping skills for labor pain (including relaxation techniques, breathing rhythm, distraction strategies) are positively correlated with CBSE (Hou, He, Sun, & Yang, 2017; Howarth & Swain, 2019; Rahimparvar, 2012; Schwartz et al., 2015). Accumulating experimental studies indicated that improving maternal knowledge to prepare for labor through antenatal class (El-Kurdy, Hassan, Hassan, & El-Nemer, 2017; Howarth & Swain, 2019; Larsen & Plog, 2012), yoga class, booklet or e-learning (Abbasi, Sakineh, & Mojgan, 2018), and couple counseling (Ahmadi, 2018) would enhance CBSE during late pregnancy and labor, however, antenatal class and midwife clinics consultation is not prevalent in China, maternal childbirth knowledge level is a concerning factor.

Birth companion as special continuing support from people with intimate nature of the relationship could affect CBSE. When admitted to the hospital, an unfamiliar environment, birth companion could create a sense of security and leaves women far away from loneliness (Lunda, Minnie, & Benade, 2018). Generally, husbands, family members, or friends, especially females with birth experience are preferred to keep present during childbirth. Doula with abundant birth experience were few in China, most of the positions were replaced by medical staff, thus it is not included in the scope. Family can offer physical and psychological support, and also can establish communication channels with midwives. Thus, they distract women from labor pain, then lead them to focus on professional instructions (Lunda et al., 2018). Supportive partners were indicated to be an irreplaceable role contributing to greatly increasing maternal self-efficacy during pregnancy and childbirth (Attanasio et

al., 2014; Larsen & Plog, 2012; Salomonsson et al., 2013; Schwartz et al., 2015). Hence, birth companion was positively correlated with CBSE.

Apart from a preference for birth companion by intimate family members, sufficient support from professionals also make a difference in women's confidence during childbirth. Supportive birth care involves the provision of physical support, emotional support, information, and advocacy. Continuous supportive care from professional staff may enhance their feeling of control and confidence in their strength to overcome labor pain and give birth (Bohren, Hofmeyr, Sakala, Fukuzawa, & Cuthbert, 2017; Sadeghi Tejdano, 2016). A study revealed a significant positive correlation between the source of labor support from professionals with confidence for VB (Neerland et al., 2019). Furthermore, communication methods through encouragement, reassurance, pep talk, coaching, and staff attitude, including respect, empathy, and understanding could increase women's CBSE to be able to cope with labor effectively (Salomonsson & Berterö, 2013). Thus, sufficient support from professionals received seems to have a positive correlation with CBSE. Since the ratio of Chinese midwives and nurses to parturients is quite low, continuous supportive care is rarely implemented during labor, the factor is worth to be explored.

Fear of childbirth (FOC) is also presented to be correlated with CBSE. The prevalence of FOC is nearly 10%-30%, thereinto, 4.8%-11% of women suffer from severe FOC (Qiu et al., 2019). The content of FOC may include pain, unknown, loss of control, and having an impaired or stillborn child (Liu, Gao, & Li, 2014). Women with high FOC scores tend to have lower level of CBSE (Carlsson et al., 2015; Gao, Liu, Fu, & Xie, 2015; Liu et al., 2014; Salomonsson & Berterö, 2013; Salomonsson et al., 2013). In addition, researchers pointed out that FOC was the strongest predictor of CBSE (Salomonsson et al., 2013). So, FOC is negatively associated with CBSE.

With increasing evidence of positive effects of CBSE, measuring women's CBSE and exploring its predictors have been given wide attention. The majority of studies primarily focused on homogenous samples of pregnant women (Carlsson et al., 2015; Liu, Jang, & Yang, 2014; Salomonsson et al., 2013; Schwartz et al., 2015), but no research examines affecting factors of CBSE in parturients during the latent phase, especially whom feel realistic prolonged labor pain that might interfere dynamic change of CBSE. Moreover, previous studies mostly pay attention to

nulliparous (Carlsson et al., 2015). In China, the one-child policy had implemented until 2015, few studies involved multiparous women in study. With the subsequent three-child policy conducted since 2021, the number of multiparous women are increasing and would also lead them to be a key population. Moreover, no study exploring all these factors together predicts maternal CBSE. Therefore, it is crucial to study predictors of CBSE in Chinese low-risk parturients during the latent phase. The finding of the study will add to the knowledge of CBSE and its predicting factors which can be used to develop intervention programs to enhance CBSE for parturients and finally will promote their positive childbirth experience.

Research objectives

1. To describe childbirth self-efficacy among Chinese low-risk parturients during the latent phase of labor.

2. To identify selected explaining factors of CBSE among Chinese low-risk parturients during their latent phase of labor which includes parity, childbirth knowledge, birth companion, professional support, and fear of childbirth.

Research hypothesis

Parity, childbirth knowledge, birth companion, professional support, and fear of childbirth combined could explain CBSE among Chinese low-risk parturients during their latent phase of labor.

Conceptual framework

The conceptual framework of this study was based on Lowe's childbirth self-efficacy theory and literature review. Childbirth self-efficacy (CBSE) was defined as maternal confidence in their ability to use required coping strategies to cope with labor pain and face childbirth more effectively. Self-efficacy was divided into two sub-concepts including outcome expectancy and efficacy expectancy. Outcome expectancy refers to one's belief that certain behavior will lead to a certain outcome in specific areas, whereas efficacy expectancy is an individual appraisal of one's ability to conduct the behavior. In childbirth, non-confidence in their ability to cope with labor pain and suspecting the outcome of conducting specific skills could both hinder

women to perform well during labor. In the conceptual model, there are four sources of information forming and affecting maternal CBSE. The main and major influential one is performance accomplishment, which refers to past mastery experience. The second source is the vicarious experience from a witness or provided by others. The third one is verbal persuasion, and the last source is a maternal somatic and emotional reaction (Lowe, 1991).

In this study, the factors were summarized from Lowe's SE theory and literature review, parity was classified as the source of performance accomplishment, while fear of childbirth belonged as the last source (emotional reaction). Childbirth knowledge, birth companion, and professional support were factors from empirical evidence. It was hypothesized that fear of childbirth was negatively affected by CBSE, whereas others were positively affected by CBSE. A diagram of study conceptual framework was shown in Figure 1.

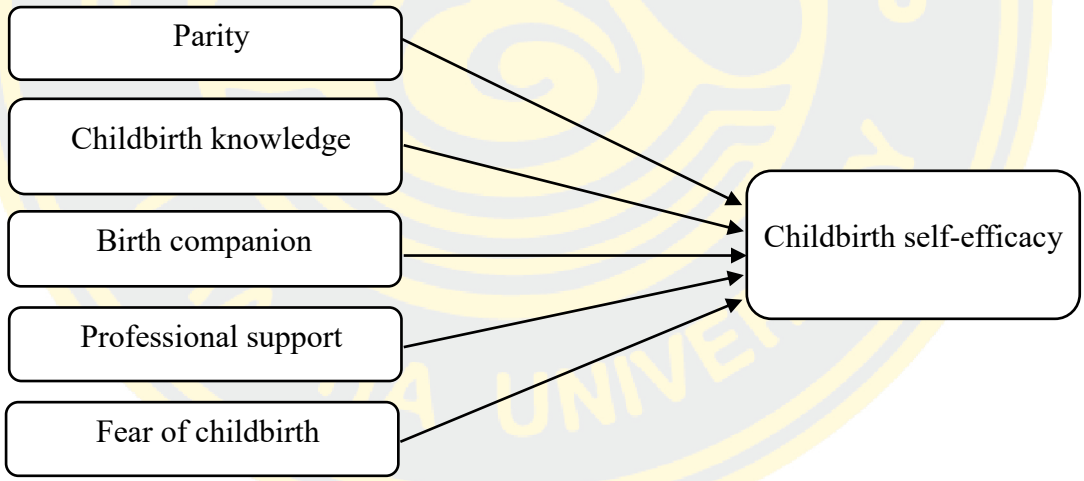

Figure 1 Conceptual framework

Scope of the study

This study examined selected factors including parity, childbirth knowledge, birth companion, professional support, and fear of childbirth predicting CBSE among Chinese low-risk parturients during the latent phase of labor. Data was collected in the first affiliated hospital of Wenzhou Medical University in Wenzhou, China from August to September 2021.

Definition of terms

Parity is defined as a number of vaginal births without obstetrical instruments used such as forceps extraction or vacuum extraction. Data were collected in the maternal medical records.

Childbirth knowledge was defined as comprehension of the women regarding vaginal birth, including labor progress, coping with labor pain, and delivery cognition. It was measured by a self-report questionnaire developed by the researcher based on the literature review.

Birth companion refers to having family members accompany women during labor. It was measured by a self-report questionnaire developed by the researcher.

Professional support was defined as the degree of parturients acquiring support from healthcare professionals during labor, such as midwives and doctors. Supportive care involves the provision of physical support, emotional support, information support, and advocacy. It was measured by the support part of the Chinese version of the Support and Control in Birth (C-SCIB) scale (Liu, Lu, Gau, and Liu (2020).

Fear of childbirth was defined as a feeling of afraid that women experience associated with labor and childbirth. It consisted of four dimensions including fear of child's health, fear of losing self-control during birth, fear of pain and injury, and fear of medical interventions and the environment. FOC was measured by the Chinese version of the childbirth attitude questionnaire scale translated by Wei (2016)

Childbirth Self-Efficacy was defined as maternal confidence in her ability to use required behavior (such as breathing, relaxation, and distractive skills) to cope with labor pain and confront the labor process effectively. It included outcome expectancy (OE) and efficacy expectancy (EE) for active labor and the second stage of labor. OE referred to an individual's appraisal that the required behavior can decrease pain level and have the benefit to the labor process. EE referred to an individual's belief in oneself that can behave successfully to cope with labor pain. It was measured by the Chinese version of the short-form Childbirth Self-Efficacy Inventory (Ip, Chung, & Tang, 2008).

Low-risk parturients was defined as the population who were between 37 to 42 weeks gestation with no maternal and fetal complications that influence normal childbirth (such as placenta previa, pre-eclampsia, contraindication for vaginal delivery, etc.), and also no history of previous cesarean section.

CHAPTER 2
LITERATURE REVIEW

The study examined factors (parity, childbirth knowledge, birth companion, professional support, and fear of childbirth) predicting childbirth self-efficacy (CBSE). Therefore, this chapter illuminated the contents from the literature review as the followings.

1. Situation of delivery mode globally and in China
2. Concept of childbirth
   2.1 Childbirth process
   2.2 Perception of labor pain
3. Concept of CBSE
   3.1 Introduction of CBSE
   3.2 Source of CBSE
   3.3 Effect of CBSE
4. Factors influencing CBSE
   4.1 Parity
   4.2 Childbirth knowledge
   4.3 Birth companion
   4.4 Professional support
   4.5 Fear of childbirth
5. Summary

Situation of delivery mode globally and in China

Childbirth, which many views as sacred, is a significant event that guarantees the continuation and evolution of the human species. Generally, birth could be divided into two categories, vaginal birth, and cesarean section. It is well-known that cesarean section has an irreplaceable role in the rapid resolution of parturition under certain medical conditions, however, the unnecessary cesarean section has limited significance in benefiting maternal and infant physical health, in some ways, it might pose potential risks instead (Betrán, 2016).

In the past two decades, the striking upward trend of the cesareans section (CS) rate has been a concern public health issue worldwide, especially in the high- and middle-income countries (Betran et al., 2016). In 2015, data from 169 countries showed that, out of 140.6 million live birth, around 21.1% of babies were birthed through CS, which nearly doubled in 15 years (12.1%), and was predicted to reach 28.5% in 2030 (Boerma, 2018). The differences in CS rate among national regions were tenfold, which varies from the lowest 4.1% in the regions of West and Central Africa to the highest of 44.3% in Latin America and the Caribbean. Large persistent disparities in the CS rate are mostly due to poor women in low- and middle-income countries do not have sufficient access to CS, however, massive overuse of CS was prevalent in many countries among wealthier women (Boerma, 2018). Countries including Turkey (50% of births), Chile (45%), Italy (36%), the USA (32%) and Australia (28.8%) (OECD, 2015) were all well above the level of 10%-15% recommended by the World Health Organization (Betrán, 2016). Over the 24-year study period (1990–2014), an average of 12.4% of CS risen rate, with annual increasing rate of 4.4%. The lowest (1.8%) and highest (6.4%) annual increase rates were observed in North America and Asia, respectively (Betran et al., 2016).

One of the countries with the largest growth rate in Asia was China. In the 1950s-70s, the natural birth rate was higher than 95%, but with the progress of medical treatment, improvement of material living standards, and especially the one-child policy implemented in the 1970s, the cesarean section rate has soared to 30%-40% in the 1980s and peaked at 40%-60% in the 1990s-2010s (Liu, & Dai, 2015; Zeng & Hesketh, 2016; Zhang, & Hou, 2018). As introduced of the two- and three-child policies since 2015 and 2021, the characteristics of pregnant women have changed, multiparous women are further increasing (Liang et al., 2018). Besides, patient-control epidural analgesia was widely used in most high-income cities, the CS rate has declined to some degree, reaching an overall hospital-based rate of 41.1% in 2016, which varies from 28.8% in the south to 43.2% in southwest (Zhang et al., 2022). However, the proportion of spontaneous vaginal delivery was around merely 33.5%-47.1% (Hou et al., 2017). As a microcosm of the global CS rate, Chinese regions with uneven development showed huge differences. Poor remote regions have no access to CS resources that influence maternal and fetus health, but developed

cities are bothered by the overuse of CS.

Cesarean section on maternal request (CSMR) appears to be a major contributor to driving the increased CS rate (Zhang et al., 2022). Guideline on CSMR from the United States of America (USA) (Gynecologists, 2013) defines CSMR as a primary pre-labor cesarean section on maternal request without maternal or fetal indication. In China, the definition of CSMR is less clear but most studies use the term CS on maternal request or CS on "social factors" variably for non-indicated CS. A systematic review of 39 hospitals across 14 provinces in China reported the CSMR rate ranged from 6.15% in northwest regions to 34% in central regions, the highest hospital even arrived to 56.3% of all CS (Zhang, & Hou, 2018). Thereinto, maternal requests during intrapartum accounted for 14.3%, while in eastern, and western regions occupied 9.9% and 32% respectively (Hou et al., 2017).

Unnecessary CS could lead to added morbidity for both women and infants in short- and long-term consequences. Short-term risks in women include postpartum infection (Otkjaer, Jorgensen, Clausen, & Krebs, 2019), hemorrhage, injury of urogenital or gastrointestinal organs, deep venous thromboembolism (Karlstrom, Lindgren, & Hildingsson, 2013; Souza, 2010; Stjernholm, Petersson, & Eneroth, 2010), admission to ICU, or even death (Souza, 2010);. For long-term effects of CS in women, it involves uterine rupture, placentation problems, blood transfusions, hysterectomy in subsequent pregnancies (Ecker, 2013; Lumbiganon et al., 2010; Marshall, Fu, & Guise, 2011). According to infants, short-term risks from CS include respiratory distress, hypoglycemia (Karlstrom et al., 2013), low Apgar score, and fetal injury (Stinson, Payne, & Keelan, 2018). Long-term risks of CS to children consist of immunological disorders (e.g., allergy or asthma), metabolic conditions (e.g., type 1 diabetes, obesity) (Stinson et al., 2018), psychopathology (Huang, 2019), and cognitive development problems (Polidano, Zhu, & Bornstein, 2017).

The increasing CSMR rate is a multifactorial phenomenon. It may be concluded into several aspects, including childbearing women, families, communities, and the society; health professionals and healthcare systems, financing and culture (Betrán, 2018). The study showed women did not initially want to deliver surgically, but a majority of them choose CS ultimately. This change mostly occurred during late pregnancy or labor (Ji et al., 2015). The majority decisions of requiring CS among

healthy parturients are driven by maternal factors, who generally fear childbirth (particularly fear of pain), view CS as a convenience, bear the stress of substantial work or family responsibility, perceived CS as “safe and painless”, judge their poor health status with advanced age (Betrán, 2018). In a medicalized context, maternal complex psychological aspects, biomedical impact, and poor support during labor might lead women to lose confidence in the ability to have a natural birth and surrender their authority to professionals, thus “choose” CS (Schantz et al., 2019).

Concept of childbirth

1. Childbirth process

Normal childbirth is defined as pregnant women ranging from 37-42 weeks of gestation, whose fetuses are in the vertex position, have spontaneous onset of labor, and both women and babies are in good conditions after delivery (Yang, 2020). It is commonly divided into three stages. The first stage of labor starts from the onset of true labor to a fully dilated cervix (0-10cm), the significant signs are regular and stronger uterine contraction (last more than 30 seconds and intermission of 5-6 min) with the advent of cervical effacement and dilatation as well as fetus descending. The second stage of labor is from a fully dilated cervix to the complete expulsion of an infant. The third stage of labor is after the complete expulsion of an infant to the complete expulsion of the placenta.

The first stage of labor is further divided into a latent phase and an active phase. In 1954, Friedman created a widely accepted labor curve to assess and manage labor progression in clinics. He described the latent phase of labor from 0 cm -3 cm of cervical dilatation, at which point the slope of the curve increased with the more rapid cervical change in the active phase of 4 cm – 10 cm (Friedman, 1954). However, more recent studies show this curve may no longer be suitable for today’s maternal conditions and labor patterns, thus, normal labor progression is proposed by new guidelines (World Health Organization, 2018b; Yang, 2020).

To give the full trial of natural vaginal birth for women and reduce unnecessary obstetrical interventions (including CS) on labor arrest, one of the biggest changes in the new guideline is that the duration of the first stage of labor is permitted to be longer, especially latent phase. New guideline indicates 5 cm of cervical

dilatation is used to distinguish two phases for the latent phase progresses more slowly than that described by Friedman, whilst normal duration of the latent phase is no consensus in worldwide (Angeby, Wilde-Larsson, Hildingsson, & Sandin-Bojo, 2018; Obstetricians & Gynecologists, 2014; Rhoades & Cahill, 2017) but generally described as less than 20 hours for primiparous women and 14 hours for multiparous women in China (Yang, 2020). Moreover, a prolonged but progressing slowly latent phase even with more than 24 hours is no longer an indication for CS (Yang, 2020).

The latent phase of labor is generally considerably longer and less predictable according to the rate of cervical change than is observed in the active phase. Before the cervical fully dilatated, women need to bear the suffering process as the wait was long, as well as women acquired less attention during this period due to the low midwife-patient ratio in most Chinese hospitals. The longer latent phase permitted is associated with lasting negative emotions during labor. Miller et al. (2019) tested 6 points from intrapartum to postpartum, which shows that psychological stress was peaked in the latent phase among both nulliparous and multiparous, while there was dropped a little in the active phase. The prolonged latent phase of labor leads to lower maternal control of labor, and also women may feel less safe during the labor environment since in this period they are more likely to be left alone and receive less continuous care in the labor room (Angeby, Sandin-Bojo, Persenius, & Wilde-Larsson, 2019). Moreover, under recent state policy in China, physicians mostly deny the requests for CS on maternal requests during intrapartum, particularly as they do not view pain as a reasonable indication for a cesarean section to control the CSMR rate to some degree, but there is still non-indication cesarean section prevalent during intrapartum from eastern to western in China (Hou et al., 2017). Also, studies show that negative labor experience (Ulfsdottir et al., 2014) and inconsistent results of CS rate (Angeby et al., 2018; Grobman et al., 2018) are related to the long duration of latent phase that may result from the negative psychological or physical and emotional exhaustion of women influence the oxytocin system through neuro-psycho-social pathway proposed by Olza et al. (2020). Thus, higher positive psychological aspects would be more important during the latent phase of labor for it could conquer negative emotions and uncomfortable brought by the long duration of the latent phase.

2. Perception of labor pain

Pain is defined as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage” by the International Association for the Study of Pain (Merskey, 1979). Different from common pain, labor pain is considered to have at least 2 dimensions, sensory and affective or distress components (Lowe, 2002). Williams and Craig (2016) updated the definition of labor pain as “a distressing experience associated with actual or potential tissue damage with sensory, emotional, cognitive and social components.

The primary focus is often the physical transmission of pain stimuli. Labor pain is one of the most severe types of pain women would endure in comparison to other painful experiments (Hulsbosch, Nyklicek, Potharst, Boekhorst, & Pop, 2020). It originates from different sites during childbirth. In the first stage of labor, the stronger feeling of visceral or cramp-like pain comes from the distension of uterine tissues and dilatation of the cervix. It is transmitted via spinal nerves T10-L1, which represents in the abdominal wall, lumbosacral region, iliac crests, gluteal areas, and thighs (Jones, 2012). In the second stage of labor, pain emerges from bulging of vaginal, perineum, and pelvic floor, which is transmitted by pudendal nerves, entering the spinal cord via nerve roots S2- S4. The feeling of pain is described as a combination of cervical stretching, visceral pain from uterine contractions, and distension of vaginal and perineal tissues, accompanied by strong urge to push due to fetus pressure on rectum (Jones, 2012). As the pain intensity rises, the labor is seen to progress normally.

Despite labor pain being associated with the same fundamental physiological process, not all women experience it the same way. It is a complex phenomenon also involving emotional and cognitive components, which with an ability to command attention and dominate other cognitive processes (Lowe, 2002). Maternal assessment of labor pain varies from excruciating to pleasurable in different individuals or on different occasions. Women view labor pain as productive and purposeful, those with positive cognitions and emotions could manage the pain well, requesting minimal assistance and reporting positive experiences; Alternatively, women with negative cognitions and emotions are more likely to interpret pain as threatening, who do not cope well and request intervention to avoid or alleviate the

pain (Whitburn et al., 2019). With the dynamic change throughout labor, personal belief, cognitive attributions, and social environment have a strong influence in shaping women's perception of pain (Whitburn, Jones, Davey, & Small, 2017). Thus, for caregivers, giving parturients the confidence to acknowledge their pain experienced as a sign of progression and to support them to respond by working with the pain, reinforces a meaning of labor pain that is distinct and unique.

Concept of CBSE

1. Introduction of CBSE

SE has been studied widely in the field of obstetrics, including childbirth SE, breastfeeding SE, and parenting SE. Unlike other stressful events, childbirth itself could be considered a stressful event, not least due to the high intensity of labor pain, but also unfamiliar and technological environment, prolonged process, and unknown health professionals, which all lead women at risk of emotional anxiety and stress. Thus, childbirth self-efficacy (CBSE) is relatively significant for the beginning transition of maternal role.

The concept of SE was raised originally by Bandura (1977), a well-known psychologist. Traceback to the 1970s, Bandura had found cognitive mechanisms played an major intermediary role between knowledge acquisition and behavior regulation, through which how people judge their ability and how this judgment affects their motivation and behavior (Bandura, 1977). He developed an initial framework of social cognitive theory, in which self-efficacy was the crucial concept (Bandura, Taylor, Williams, Mefford & Barchas, 1985).

To apply the concept of self-efficacy in the fields of childbirth, Manning and Wright (1983) initially examined the relationship between EE & OE and maternal persistence of labor pain among 52 primiparous women, which revealed EE and OE were related to the endurance of pain control without medication during childbirth, and EE is a predictor better than OE and other five predictors (social desirability, locus of control, past use of pain medication, pain control technique training and practice). Subsequently, several studies suggested an inverse relationship between maternal confidence for birth and labor pain (Crowe, 1989; Lowe, 1989). Lowe (1989) further explored nine predictors of labor pain perception among 134 low-risk

women, which were age, parity, childbirth preparation, state anxiety, fear of pain, concern of labor outcome, cervical dilatation, frequency of uterine contraction, and confidence. Maternal confidence for childbirth was the most significant predictor of all components that explained more than 30% variance in labor pain.

To conceptualize the confidence for childbirth, Lowe (1991) consummates Bandura's self-efficacy in the fields of birth. She defines childbirth self-efficacy as women's confidence in their capability to use required skills or strategies to cope with labor, and confidence in those skills would bring them to overcome their childbirth circumstances. Similar to Bandura's self-efficacy theory, there is the distinction between the two components of CBSE. OE in childbirth refers while EE in childbirth as maternal belief in her ability to perform these skills during labor (Lowe, 1991). For instance, a pregnant woman with high OE and EE who believes that strategies of coping with labor pain are helpful, and firmly believes her ability to cope with labor pain, will insist to practice relaxation strategies longer. Nevertheless, a woman with high OE but low EE, who has serious doubt about capability to relax will quit and abandon relaxation techniques more easily during labor. Thus, once acquiring the corresponding perception and skills, SE becomes the decisive factor in behavior.

2. Sources of CBSE

CBSE is the dynamic perception of one's ability, which changes with experience and updated knowledge. Bandura (1977) concludes that four primary origins of information could form perceived SE, which developed into the fields of childbirth by Lowe (1991).

2.1 Performance accomplishment is the most potent source of SE. It refers to individuals' previous mastery experience, such as multiparas with experience of birth expressed higher confidence during labor than primiparas, or nulliparas' SE could be reinforced by the significant pain experiment on other occasions.

2.2 Vicarious experience is defined that people gaining indirect experience from others' achievement of the task, like observing other women during childbirth, or through films, books, even hearing others recall their experience.

2.3 Verbal persuasion or social influence is belief and available suggestion to encourage, persuade, evaluate, and support people to appropriate behave healthily. For instance, learning the childbirth process and specific coping skills

during class or persuasion by childbirth educators could infuse them with confidence.

2.4 Somatic and emotional status are an individual's physiological response and psychosomatic reaction. Somatic responses such as rapid heart rate, nausea, fatigue, or pain as well as emotional status, like anxiety, stress, and fear may undermine self-efficacy and influence performance.

3. Effects of CBSE

CBSE affects delivery mode chosen, the pain-relief method used, and childbirth satisfaction.

3.1 CBSE and delivery mode

Regarding the mode of delivery chosen, Zhang et al. (2018) conducted a longitudinal study among 1,211 nulliparous pregnant women, investigating related factors associated with an actual delivery mode in the context of China's two-child policy. They found that lower scores of intrapartum CBSE significantly account for higher odds of having an actual cesarean delivery. Similarly, Sun et al. (2020) explored the factors related to women's preference for a cesarean section in a cross-section analysis of 1853 pregnant women, who have indicated low scores of CBSE were more likely to prefer CS. Other studies in Iran (Zamani-Alavijeh, Araban, Hassanzadeh, & Makhouli, 2018) and Australia (D'Cruz, 2014) also showed CBSE exerts an important role in preferring or choosing delivery mode.

3.2 CBSE and pain

For the pain-relief method used, pharmacological methods for pain-relief are requested more frequently among women with lower confidence for childbirth (Carlsson et al., 2015; Neerland et al., 2019). Epidural analgesia (EDA) and intramuscular pethidine are widely required and effective pharmacological interventions in the clinic (Sprawson, 2017). However, it is not recommended to apply on routine unless requested by women due to its side effects and risks, such as increasing rate of nausea, drowsy, fever, urinary retention, instrumental vaginal birth, and CS (Burchell, 2016; Jones, 2012).

Non-pharmacological methods are more recommended to be the first choice, including self-copying methods (breath technique, relaxation technique, hypnosis, distraction skills), biofeedback, immersion in water, aromatherapy, acupuncture, and massage which are available for women to choose initiatively with

few adverse effects and costs (Jones, 2012). Other terms similar to self-copying methods are “psychological therapies” or “cognitive therapies” shown in a review that reveals self-copying strategies could reduce the perceived pain levels and increase pain tolerance (Escott, Slade, & Spiby, 2009). However, fewer women do implement the coping strategies during labor though they had trained in the antenatal class. Evidence suggests one's coping self-efficacy can mediate the effectiveness of implementing specific coping strategies in practice (Escott et al., 2009). Sánchez-Cunqueiro (2018) recruited 278 low-risk pregnant women to determine the relationship between self-efficacy expectancies, coping behavior strategies, and satisfaction of childbirth experience through a quantitative observational design study. Researchers indicated pregnant women with larger scores of CBSE implemented more coping behaviors for a longer duration during active labor. Another randomized controlled trial of the birth ball program among Taiwanese women by Gao et al. (2011), in which data collected when cervical dilations were four and eight centimeters identified the 30%-40% mediating effects of CBSE on the relationship between birth ball exercise training and labor pain. Mothers in the experimental group showed higher CBSE scores with a lower rate of epidural analgesia requested and cesarean section rate.

3.3 CBSE and childbirth satisfaction

According to childbirth satisfaction, accumulating evidence showed that positive attitudes and locus of control are associated with the satisfactory experience of childbirth (Cunqueiro, 2017; Sánchez-Cunqueiro, 2018). Sánchez-Cunqueiro (2018) found that women using all their strength to maintain control for physiological vaginal birth led them to gain a sense of achievement and a better childbirth experience, even in the case of difficult birth with instrumental and medical assistance. Fair and Morrison (2012) explored the relationships of three variables (perceptions of prenatal control, expectations for childbirth, and experienced control) with birth satisfaction. They revealed that women’s experienced control was the only significant predictor of birth satisfaction.

Factors influencing CBSE

CBSE is a paramount cognitive aspect associated with vaginal childbirth. From the literature review, CBSE was related to several factors, including maternal socio-demographic and obstetrical factors, psychological factors, childbirth knowledge, and support, however, the study found five factors that were most important and highly related to CBSE, which were parity, childbirth knowledge, birth companion, professional support, and fear of childbirth.

1. Parity

Parity refers to the number of birth times, including the birth experience through vaginal and cesarean section. However, in this study, parity is defined as the maternal previous number of natural birth times, who owned successful experience of coping with labor. It stands for the performance achievement mentioned in Lowe's SE theory (Lowe, 1991). Performance accomplishments are individual previous mastery experience (Bandura, 1994). In general, people perceiving successful experiences through their perseverant effort are more realistic to rise sense of SE and enhance belief in their ability in subsequent activities in same situation (Maddux, 1995). Failed experiences can reduce an individual's efficacy which may lead to avoidant behavior, especially in the early stage of SE development. Prior natural birth experiences are unique events for multiparous women who have a perception of initial labor pain and psychological expectations of childbirth progress. The value of experience could equip women with their effective coping strategy, which mostly enhanced their efficacy expectancy, thus significantly influencing their CBSE.

Soh et al. (2020) examined relationships between one of the selected factors especially parity with CBSE among 205 multi-ethnic pregnant women in Singapore. The results highlight that parity was a significant factor positively affecting CBSE. Multiparous women were likely to gain higher CBSE. On the other hand, confronting unfamiliar birth environments and labor progress, nulliparous women felt lower confidence for upcoming births. Neerland et al. (2019) compared prenatal confidence for physiologic birth between multiparas and nulliparas. It was indicated that multiparous women had higher prenatal confidence for physiologic birth compared to nulliparous women. Schwartz et al. (2015) explored factors associated with CBSE among 1,410 pregnant women. It resulted that parity was a significant element for

maternal EE but not significant for maternal OE. Hence, mastering birth experience will build people with performance accomplishments that positively influences CBSE. Moreover, in China, with three children allowed in a family since 2021, the number of multiparous women is increasing that should be mostly paid attention to, thus this factor is a significant one to be explored.

2. Childbirth knowledge

Childbirth knowledge involved with conceptions towards delivery modes, labor progress, and coping strategies that are acquired from antenatal classes, yoga classes, media, books, or seminars is usually available by women. It could be conceptualized in theory as the “secondary performance achievement” from labor rehearsal in a professional organization or particular situations, or some consider it as a “vicarious experience” acquired from successful cases. Evidence explicitly documented a positive correlation between maternal childbirth knowledge and CBSE. Yuksel (2019) conducted a cross-sectional study of 258 Turkish pregnant women, which was identified as significantly associated with childbirth self-efficacy. Besides, Schwartz et al. (2015) examined factors related to CBSE in Australian nulliparous and multiparous women, which also indicated that women who acquired more childbirth knowledge had higher CBSE.

Also, several experimental studies had been successfully trialed to enhance maternal confidence by researchers, who developed antenatal education for pregnant women through various methods. Howarth and Swain (2019) implemented a 40-hours education program for birth preparation among nulliparous pregnant women in New Zealand, which showed that after the program, women’s CBSE was strengthened. In Iran, Ahmadi (2018) emphasized that problem-solving approaches for couples represented a better acceptance of childbirth knowledge, and changeable attitudes in both women and spouses, whilst their CBSE increased. Other experimental or quasi-experimental studies mentioned childbirth knowledge interventions, which contents include nutrition, physiological and psychological changes during pregnancy (Serçekuş & Başkale, 2016), distinguishment of false and true labor (Rahimparvar, 2012), coping strategies for decreasing labor pain (e.g., relaxation techniques, respiratory skills, massage, and music therapy) (Byrne, Hauck, Fisher, Bayes, & Schutze, 2014; Larsen & Plog, 2012; Rahimparvar, 2012; Serçekuş & Başkale, 2016),

and positions practice (Sun, Hung, Chang, & Kuo, 2010), which showed that the knowledge was significantly related to maternal CBSE. Hence, a higher degree of childbirth knowledge the women master, the stronger of CBSE would be. However, in China, prenatal education about childbirth knowledge is not prevalent in most regions. Besides, the education resources are distributed unevenly, especially in the rural regions (Fu, 2014), thus the childbirth knowledge women own is considered a significant aspect in related studies.

3. Birth companion

Birth companion refers to the important and special one who was selected to company with women during the labor process, including husband, mothers, sisters, friends, and doula. In China, the role of a doula is mostly replaced by professionals, thus, a doula is not concluded in the study. The birth companion could not only provide life care during the labor but also persuade, and encourage women to insist on the suffering process, which is conceptualized as “verbal persuasion” in the theory (Lowe, 1991). Labor support person and social support are key ingredients in maternal positive labor outcomes, especially a primary support person (expectant father), who is an intimate person to better comfort and support women physically and emotionally in an unfamiliar environment and painful labor process. A secondary analysis of data as a part of the Birth Emotions – Looking to Improve Expectant Fear Study was performed to reveal factors associated with CBSE in Australia. A single item question was used to measure women’s perceived partner support during pregnancy, data analysis demonstrated an unexpected result that multiparous women reported lower CBSE levels when they lack partner support, whereas no significant association among nulliparous women (Schwartz et al., 2015). Ou (2010) conducted an experimental study to examine the impact of family support on Chinese pregnant women’s CBSE. It showed that family support was positively related to women’s CBSE. Although most research focused on social support during pregnancy, limited study was concerned with family support during labor. Attanasio et al. (2014) explored relationships among related factors and maternal confidence in childbirth in 1,573 American parturients. It was found that nulliparous women have higher odds of birth confidence with partner support during labor while multiparous women showed no significant difference. Most evidence showed that a birth companion could be a

force to enhance maternal CBSE.

4. Professional support

Professional support is viewed as coaching, consulting of informational and emotional support by professionals during labor, which also could be conceptualized as “verbal persuasion” in theory (Lowe, 1991). Although maintaining a calm environment and giving verbal support were family members’ most confident to complete, however, the skill of helping women to decrease pain and cope with unexpected circumstances leads them to feel least confident (Larsen & Plog, 2012). Hence, professional information and care seem crucial for women to rely on (Schwartz et al., 2015). In a qualitative descriptive methodological study, Leap et al. (2010) took an in-depth interview with 10 women who reflected on their experiences of continuity of care with Albany midwives, which suggested midwife-led continuity models from pregnancy to labor process would significant strengthen maternal confidence with a trusting relationship of a midwife. An intervention review also revealed continuous professional support was most effective at reducing cesarean section and promoting the willingness for spontaneous vaginal birth (Bohren et al., 2017). Salomonsson and Berterö (2013) applied semi-structured interviews in a qualitative study to test maternal CBSE towards upcoming childbirth in the context of severe fear of childbirth, it was concluded that support from partners and medical professionals was mentioned to be a vital domain associated with CBSE. Labor professional support through pep talks, encouragement, provision of instructions, and information could equip women with motivation, and guide them to cope with labor just like “the leader of a session at a gym”. A systematic review of prenatal care approaches to strengthening maternal confidence for physiologic birth revealed three key dimensions of support from professionals for women to build confidence, including information gaining, participation in decision making, and a respectful partnership (Avery, Saftner, Larson, & Weinfurter, 2014). Besides, the midwife as the top source of information was mentioned to help women to gain the greatest satisfaction and family members better accompany women during labor (Avery et al., 2014; Larsen & Plog, 2012). In China, with the low ratio of midwife-parturients in most hospitals, maternal perceived support level is highlighted as an important source to increase CBSE.

5. Fear of childbirth

Emotional status also makes a difference to strengthen or impair SE in Bandura's SE theory (Bandura, 1994). Among negative emotions, fear of childbirth (FOC), particularly fear of labor pain was documented as the strongest emotion associated with maternal SE. It was reported that the prevalence of fear of childbirth accounted for 10%-30%, among which 4.8%-11% were severe level (Qiu et al., 2019). Women with severe fear are more likely to view labor pain as a threatening obstacle and experience more intense pain than actual feelings (Haines, 2012; Whitburn et al., 2019). What's worse, they are more frequently request interventions for avoiding or alleviating the pain (Veringa, Buitendijk, de Miranda, de Wolf, & Spinhoven, 2011) and generally have a poor adaptation to labor experience (Carvalho, Zheng, & Aiono-Le Tagaloa, 2014; Rysewyk, 2019; Sitras, Saltyte Benth, & Eberhard-Gran, 2017). However, when women feel confident during labor, their sense of control over pain would enhance. Thus, their perceived pain and FOC were decreased (Byrne et al., 2014; Toohill, 2014). On the other hand, high aversive emotional arousal tends to diminish SE in turn (Gao et al., 2015). CBSE, as a modifiable and positive psychological status, has been linked with FOC (Carlsson et al., 2015; Gao et al., 2015; Gourouniti et al., 2015; Lazolglu, 2018; Qiu et al., 2019; Salomonsson & Berterö, 2013; Salomonsson et al., 2013; Schwartz et al., 2015).

O'Connell, Leahy-Warren, Khashan, Kenny, and O'Neill (2017) found that the prevalence of FOC was high among countries. In an earlier study by Lowe (2000), she examined the association of CBSE and FOC in 280 predominantly white and well-educated nulliparous women during pregnancy. She found that high fear level was negatively correlated to lower EE but not OE. Further several types of research affirmed the results, vary from China (Gao et al., 2015; Qiu et al., 2019), Australia (Schwartz et al., 2015), Greek (Gourounti et al., 2015), Turkey (Lazolglu, 2018) and Sweden (Carlsson et al., 2015; Salomonsson & Berterö, 2013; Salomonsson et al., 2013).

Salomonsson et al. (2013) explored the association of CBSE with FOC in a cross-sectional study with a large sample of 1,000 pregnant nulliparous women. They reported that women with severe FOC tend to have low CBSE and FOC was a predictor of CBSE. Gao et al. (2015) investigated predictors of fear among 353

Chinese low-risk pregnant women. It yields a significant and direct association between both OE and EE with FOC. However, the best-fit regression model revealed that four variables without CBSE (including age, state anxiety, and trait anxiety, and previous miscarriage) explained 28% of the variance in FOC.

Summary

With the risen rate of CSMR, maternal psychology has been focused especially on the positive modifiable variable as CBSE. Through the literature review, the relationship between factors and CBSE was explored, few studies examine CBSE among both nulliparous and multiparous women in China. Besides, the majority of studies implemented during the pregnant period but ignored the most important childbirth period, the realistic pain circumstance might destroy maternal dynamic CBSE, also, lacking sufficient support could lead women to lose the confidence of natural delivery but choose CS as a “safe and painless” method. Furthermore, in the Covid-19 pandemic context, maternal fear of childbirth might increase to some degree, which should be highlighted.

Therefore, it was necessary to explore the selected factors (parity, childbirth knowledge, birth companion, professional support, and FOC), which was showed a higher correlation with CBSE to predict it among low-risk parturients during the latent phase of labor in China. The results of the study would provide scientific evidence for practice and research in obstetrical nursing to decrease the rate of CSMR and increase maternal satisfaction with childbirth.

CHAPTER 3
RESEARCH METHODOLOGY

This chapter introduced research design, population and sample, setting of the study, instruments, human rights protection, process of data collection, and statistical methods for data analysis.

Research design

A predictive correlational design was employed to investigate whether parity, childbirth knowledge, birth companion, professional support, and fear of childbirth were the predictors of CBSE in Chinese low-risk parturients during the latent phase of labor.

Population and sample

Population

The target population of this study was low-risk parturients during labor admitted to labor room.

Sample

The samples were low-risk parturients admitted to labor room of the tertial general hospital in Wenzhou, China.

The inclusion criteria of participants included

1. Age ≥ 18 years old

2. Being in the latent phase of labor and having 2 to 5 cm of cervical dilatation

3. Pain score of NRS was less than 4 points.

4. No maternal and fetal complications that influence normal childbirth (such as placenta previa, pre-eclampsia, contraindication for vaginal delivery, etc.)

5. No history of mental health disorders

6. Able to read, speak, and write Chinese fluently

Sample size

Sample size calculation was conducted by the G*Power 3.1 version. Given

the researcher aimed to examine the 5 predictors of childbirth self-efficacy, thus the linear multiple regression was chosen as a type of statistical test in the G*Power program with an alpha of .05, a power of .90, and a medium effect size of 0.15 (Tabachnick, Fidell, & Ullman, 2007). The required sample size was 116 participants. In this study, 5% of the sample size (6 participants) was added in case of incomplete data collection. Therefore, 122 participants were needed in total.

Sampling method

The convenience sampling method was used to recruit participants during the latent phase of labor. In the labor room, the researcher invited all parturients who met eligibility criteria from medical records to participate in the study. The researcher explained the purpose and process of the study, highlighting the principles of confidentiality, anonymity, and the right to withdraw from the study. They were also asked to sign a consent form. About 3 to 5 participants were recruited each day. The researcher collected data until the required sample size was obtained.

Research setting

Wenzhou is one of the regional central cities in Zhejiang province, it has a population of approximately 9.3 million. The study was conducted in the first affiliated hospital of Wenzhou Medical University. It is the largest general hospital in service 300 thousands of people in the south of Zhejiang province. It covers a land area of 355,000 square meters and owns more than 6000 medical staffs and 3,500 beds. The obstetrical department in the hospital has 4 wards with more than 70 medical staffs and 100 beds, where there are 25 delivery beds and two operating rooms in the labor room.

The birth rate was around 5,000 babies per year, among which the vaginal birth rate accounts for around 64% in 2019. The labor room provides service for all pregnant women with any symptoms (such as bloody show, uterine contraction, rupture of membranes) or needs obstetrical interventions (such as oxytocin induction). It is available for patient-controlled epidural analgesia, and family or doula accompany at any time according to parturients' preference, generally when the cervical dilatation is more than 2cm.

According to maternal childbirth preparation education, the hospital has set

up midwife consulting clinics in the outpatient building to face-to-face educate women one by one who is referred by doctors. Women and their companies would attend the midwife clinics of their wishes and need. The discussions mainly involved the advantages and disadvantages of CS and VB, advocating vaginal delivery, nutrition for pregnancy, coping with childbirth, labor wish (birth companion, epidural analgesia, episiotomy, etc.), and breastfeeding. Moreover, some of the educational contents such as breastfeeding will be displayed on TV in the hall every day and nurses would organize a class on ward once a week for inpatients. Taking the situation of Covid-19 spreading in China, the online class has been held and the QR code is provided in the midwife clinics for maternal learning as their wish.

Research instruments

Data were collected by five self-report questionnaires, including a demographic and obstetrical questionnaire, a childbirth knowledge questionnaire, a professional support questionnaire, a fear of childbirth questionnaire, and a childbirth self-efficacy inventory short-form scale. Details of questionnaires are shown as follows:

1. Demographic and obstetrical questionnaire

The demographic and obstetrical questionnaire was developed by the researcher. The demographic part contains women's date of birth, height, pre-pregnant/ current weight, marital status, residence, educational level, occupation, religion, annual household income, payment methods of medical expenses.

The obstetrical part contains a history of dysmenorrhea, unplanned pregnancy, childbirth class/ midwife clinics, and birth companion. Additionally, other data was filled by the researcher from the medical record, including numbers of pregnancy, vaginal birth, miscarriage; gestational week, current cervical dilatation, current pain score, and current received medical intervention.

2. Childbirth knowledge questionnaire

Childbirth knowledge questionnaire was developed by the researcher based on the literature review. It consists of 16 items containing three dimensions of delivery mode conception (item 1-6), labor progress (item 7-11), and coping strategies (item 12-16). Each right answer accounts for 1 point, while a wrong or unsure answer

is given 0 points. Thus, possible scores range from 0 to 16 points. A higher score corresponds to higher childbirth knowledge.

Its psychometric properties, validity, and reliability were explored. Validity was examined by three Chinese experts, who were all majoring in midwifery. Their education levels were higher than bachelor's degrees and professional titles at the intermediate level or above. Then, it was calculated by content validity index (CVI), both item-level CVI (I-CVI) and scale-level CVI (S-CVI). I-CVI was calculated as the number of experts giving a rating of "very relevant" (1- completely irrelevant, 2- a little relevant, 3- relevant, 4- very relevant) for each item divided by the total number of experts. Values range from 0 to 1, whilst 0.75 is the cut line. I-CVI > 0.75, the item is relevant; between 0.70 and 0.79, the item needs to be revised, and if the value is below 0.70 the item should be eliminated (Rodrigues, Adachi, Beattie, & MacDermid, 2017). Also, S-CVI was computed by using the number of items in a tool that have achieved a rating of "very relevant". To calculate S-CVI, the universal agreement (UA) among experts (S-CVI/ UA) was computed by adding all items with I-CVI rating of 3 or 4 divided by the total number of items. S-CVI/UA ≥ 0.8 has excellent content validity (Rodrigues et al., 2017). Through the feedback from the 3 experts, the I-CVI values ranged from 0.67 to 1, while one item (item 15) valued 0.67 and others were all arrived at 1, meanwhile the S-CVI/ UA valued 0.94.

3. Professional support questionnaire

Professional support questionnaire is a part of support and control questionnaire designed firstly by Ford, Ayers, and Wright (2009), which involved three dimensions in maternal internal control, external control, and acquiring support from medical staffs including midwives and doctors in labor. It contains a total 33 items, but this study has taken the part of support as the scale to measure maternal perception of professional support. The support part consisted of 12 items and Likert scale of 5 levels including strongly disagreement (1 point), disagreement (2 points), unsure (3 points), agreement (4 points), strongly agreement (5 points) was used to measure the maternal perceived level of professional support. However, three items (item 7, 8, 12) were reverse scored. The possible sum of scores ranges from 12-60. Higher scores indicated higher support. Liu et al. (2020) has developed the scale of the Chinese version through the translation and back translation by 6 experts, which

showed good reliability, stability, and validity. Its overall Cronbach's α and Pearson's correlation coefficient values were 0.81 and 0.96, among which the support dimension was 0.88 and 0.97 respectively, and the test-retest reliability is around 0.99 for support dimension. According to validity, the I-CVI (0.99) and S-CVI (0.99) were both above 0.78 and 0.80, which suggested a good content validity.

4. Fear of childbirth questionnaire

Fear of childbirth was measured by the childbirth attitude questionnaire (CAQ), which was developed by Areskog, Kjessler, and Uddenberg (1982), then translated into the Chinese version by Wei (2016). CAQ is a 16-item scale with a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). The Chinese version of CAQ was used to study 351 Chinese pregnant women (Wei, 2016). Construct validity was performed by confirmatory factors analysis that extracted four subscales were extracted. It explained 63.2% of the variance. Its Cronbach's alpha coefficient was 0.91 and test-retest reliability was 0.803. However, the sixteenth item "Overall, I would rate my anxiety about childbirth as 1 (no anxiety), 2 (low anxiety),3 (moderate anxiety), 4 (high anxiety)" was deleted in this study due to its meanings and pattern were distinct from all other 15 items. The possible sum of scores of 15 items ranges from 15-60. Higher scores indicated higher fear of childbirth.

5. The Chinese short form of 32-item Childbirth Self-Efficacy Inventory (CBSEI-C32)

Childbirth Self-Efficacy Inventory was developed by Lowe (1993). It was a 62-item Likert-type scale for measuring maternal confidence and coping ability during the antenatal and postnatal period. Subsequently, Ip et al. (2008) developed a short form (32 items) of the Childbirth Self-Efficacy Inventory to evaluate the level of maternal labor-related SE among Hong Kong women. The short form also has two parallel subscales including outcome expectancy (OE) and efficacy expectancy (EE), in which each subscale contains 16 items. The OE-16 subscale measures behavior that a woman believes will be benefit for her during labor, while the EE-16 subscale assesses maternal confidence to perform those behaviors during labor. For both subscales, a 10-point Likert scale will be rated. For OE-16 subscale, the meanings of rating are 1 (not at all helpful) to 10 (very helpful). For EE-16 subscale, the meanings of rating are 1 (not at all sure) to 10 (very sure). Each subscale has possible scores

ranging from 16 to 160. A high score means high OE or EE for childbirth. Each subscale has possible scores ranging from 16 to 160. A high score means high OE or EE for childbirth. Later, Gao et al. (2011) validated the short version of the Childbirth Self-Efficacy Inventory (CBSEI-C32) in mainland China. Factor loadings of all items were above 0.4 and supported two factors of OE and EE. Each subscale had Cronbach's alpha values of more than .90.

Reliability of the instruments

In the current study, 30 parturients who were not participants of the study were selected to test the reliability of instruments. The Kuder Richardson-20 (KR-20) of the Childbirth knowledge questionnaire was 0.729, and the Cronbach alpha of SCIB-S, CAQ, and CBSEI-32 were 0.849, 0.873, 0.930, respectively. Thereinto, the subscale of OE and EE were 0.891 and 0.945 respectively.

Human right protection

Before the study, IRB approval was obtained by the Faculty of Nursing, Burapha University (G-HS050/2564), and the first affiliated hospital of Wenzhou Medical University (Protocol code 2021-zz-065). During data collection, all eligible parturients were carefully informed about the purpose and the whole process of data collection, once women had uterine contraction, the researcher would suspend for a little while until they stop contraction. Individuals' right to refuse and withdraw from the study anytime was highlighted. Once participants were willing to take part in the study, they were required to sign the consent form before data collection. All information of participants was used for study, keep confidential, and will be destroyed after publication. Results of the study were illustrated in overview data, nothing will be linked to individual participants. Anyway, if participants would like to know the study results, they were welcome to contact the researcher.

Process of data collection

The data collection procedures in this study were conducted by the researcher as follows:

1. After acquiring permission of the Burapha University Ethics Committee on Human Research and the institutional review board (IRB) of the first affiliated hospital of Wenzhou Medical University, the researcher contacted the director of the hospital, head nurse, and nurse staff of the labor room to introduce briefly about the purpose and process of study and asked for their cooperation of data collection.

2. Consideration of the situation of COVID-19 in China, the researcher and participants were all following the hospital rules of pandemic prevention, displaying the screen passcode, screening body temperature (below 37.3°C), and wearing masks all the time.

3. For the pilot study, the researcher selected 30 clients with the same characteristics to follow the inclusion criteria in the labor room to test the psychometric property of the instruments. The reliability of these instruments measured by Cronbach's α coefficients were all more than 0.8 (existing instrument) and 0.7 (self-reported instrument). After that, the researcher reported the results of the trial study and entered into the process of formal research.

4. The researcher arrived at 8:00 AM and left after 4:30 PM every day and found women who met inclusion criteria through the medical record. Then, used the convenience sampling method to recruit participants.

5. Met participants, introduced and informed them about the purpose and process of the study. In addition, human rights protection was explained and highlighted the right to drop out anytime as their wish, whilst assuring them about anonymity and confidentiality. After acquiring informed consent, participants were given consent forms and asked to sign their names and date.

6. Data was collected individually in the labor room, and let down the bed curtains were to keep participants private. Participants were allowed to lie down or sit in bed to complete the questionnaire alone, the process would be suspended for a little while when women had uterine contractions. During the process, women were allowed to assess their pain level anytime and could exit the study when their perceived pain score was ≥ 4. The whole process of data collection in each case had taken around 30 minutes, and the researcher checked completion after taking back questionnaires. All public goods were disinfected with alcohol cotton after use.

7. Data collection was collected every day from 1st August to 1st September

2021. About 3-5 participants per day were recruited until reaching the sample size.

Data analysis

In the study, IBM SPSS 25.0 software was used for statistical analysis, the significance level was set to .05.

1. Demographic data and variable description would be analyzed by frequency, percent, range, mean, and standard deviation.

2. The data were tested for normality of the variables, linearity, homoscedasticity, outliers, autocorrelation, and multicollinearity to verify the assumptions of the standard multiple regression model.

3. Predictors of CBSE among parturients during the latent phase of labor were examined by standard multiple linear regression analysis with the “enter” method.

CHAPTER 4
RESULTS

This Chapter presents the analysis results of the study about parturients' childbirth self-efficacy and its predicting factors (parity, birth companion, childbirth knowledge, professional support, and fear of childbirth) among 122 participants who were during latent labor at the first affiliated hospital of Wenzhou Medical University, Wenzhou, China.

The results are divided into 4 parts.

1. Descriptive data of participants' general information
   1.1 Demographic characteristics
   1.2 Obstetrical data
2. Descriptive data of independent variables
3. Descriptive data of dependent variable as childbirth self-efficacy
4. Standard multiple linear regression analysis of factors predicting childbirth self-efficacy

Descriptive data of participants' general information

1. Demographic characteristics

The demographic data including age, pre-pregnancy BMI, weight gain, marital status, residence, education, occupation, religion, household income (thousand yuan), and payment method of medical expense are demonstrated in table 1.

Table 1 Descriptive statistical analysis results of participants' demographics (N = 122)

Demographics	Number (n)	Percent (%)
Age group (years, Range = 15-54, M = 29.55, SD = 5.07)		
18-24	11	9.0
25-34	100	82.0
≥35	11	9.0

Table 1 (Continued)

Demographics	Number (n)	Percent (%)
Pre-pregnant BMI (kg/ m^2)		
(Range = 15.42-30.48, *M* = 20.31, *SD* = 2.93)		
<18.5	35	28.7
18.5-24.9	80	65.6
>24.9	7	5.7
Appropriate weight gain related to criteria		
Yes	47	38.5
No	75	61.5
Marital status		
Married	115	94.3
Single	7	5.7
Residence		
City	33	27.0
Town	61	50.0
Countryside	28	23.0
Education background (years)		
(Range = 6-19, *M* = 14.21, *SD* = 2.48)		
Primary School	1	0.8
Junior School	15	12.3
Senior School	15	12.3
Junior College	52	42.6
Undergraduate degree	37	30.3
Graduate degree	2	1.6
Occupation		
Employed	92	75.4
Unemployed	30	24.5

Table 1 (Continued)

Demographics	Number (n)	Percent (%)
Religion		
Have	45	36.9
Not have	77	63.1
Annual household income (thousand [K] Yuan)		
(Range = 5-500, *M* = 201.6, *SD* = 120.6)		
<80K	13	10.5
80K- <150K	28	23.0
150K- <300K	49	40.2
⩾300K	32	26.3
Payment method of medical expense		
Self-payment	27	22.1
Medical insurance	95	77.9

From table 1, descriptive statistical analysis results of participants' demographics that women's age ranges from 18-54 years old with an average age of 29.55 years old (SD = 5.07). The pre-pregnant mean BMI was 20.31 kg/m^2 (SD = 2.93), of which mostly (65.6%) centered on 18.5-24.9 kg/m^2 and 38.5% of parturients had appropriate weight gain. Almost women were married (94.3%) when half of them (50%) came from the town. Of 122 participants, 73.5% parturients owned a degree higher than junior college, as the mean educational years was 14.21 years (SD = 2.474, range = 6-19). Among the research, 75.4% of women were employed, 63.1% did not have religion, and 77.9% paid medical expenses by medical insurance use, whilst their annual mean household income was 201,600 Yuan (SD = 120,600; range = 5,000-500,000).

2. Obstetrical data

The obstetrical data including gestational age (weeks), pregnancy (times), parity (times), abortion (times), dysmenorrhea, unplanned pregnancy, childbirth class or midwife clinics, birth companion, and medical intervention were all shown in table 2.

Table 2 Descriptive statistical analysis results of obstetrical data (N = 122)

Obstetrical data	Number (n)	Percent (%)
Gestational age (weeks, Range = 37-42, M = 39.66, SD = 1.02)		
<38	7	5.7
38-40	67	54.9
>40	48	39.3
Gravida (Range = 1-6, M = 1.75, SD = 1.00)		
1	66	54.1
2	29	23.8
≥3	27	22.1
Parity (times, Range = 0--3, M = 0.40, SD = 0.63)		
0	81	66.4
1	34	27.9
≥2	7	5.7
Abortion (times, Range = 0-3, M = 0.37, SD = 0.61)		
0	84	68.9
1	32	26.2
≥2	6	4.9
Dysmenorrhea		
Never	37	30.3
Sometimes	66	54.1
Often	13	10.7
Always	6	4.9

Table 2 (Continued)

Obstetrical data	Number (n)	Percent (%)
Unplanned pregnancy		
Yes	48	39.3
No	74	60.7
Attending childbirth Class/ midwife clinics (times, range = 0-20, M = 2.28, SD = 3.71)		
Yes	64	52.5
No	58	47.5
Birth Companion		
Husband	50	41.0
Mother	1	0.8
Mother-in-law	4	3.3
Others	0	0
None	67	54.9
Medical intervention		
Cervical balloon dilator	27	22.1
Oxytocin	60	49.2
Amniotomy	44	36.1
Patient-controlled epidural analgesia	72	59.0
None	25	20.5

In table 2, descriptive statistical analysis results of participants' obstetrical data presented the parturients' mean gestational age was 39.66±1.02 weeks (range = 37-42). Of participants, 54.1% of women were primigravidas, whilst 66.4% were primiparas who would have the current delivery mode as vaginal birth for the first time. More than half (68.9%) of them had no abortion time. As for the frequency of dysmenorrhea before, answering "sometimes" took up nearly 54.1% (n = 66). Most women (60.7%) intended to get pregnant, and 52.7% attended childbirth classes or midwife clinics, whilst the mean time of attending arrived at 2.28 (SD = 3.71). During

labor, 54.9% had no birth companion, husband (41%) was chosen most. 59% had patient-controlled epidural analgesia, and only 20.5% did not receive medical intervention.

Descriptive data of factors

Factors of this study included parity, birth companion, childbirth knowledge, professional support, and fear of childbirth. They were analyzed by descriptive statistics. The results were shown in Table 3.

Table 3 Descriptive statistical analysis results of factors (N = 122)

Independent variables	Number (n)	Percent (%)	Range		M	SD
			Possible	Actual		
Parity			-	0-3	0.40	0.63
0	81	66.4	-	-	-	-
1	34	27.9	-	-	-	-
2	6	4.9	-	-	-	-
3	1	0.8	-	-	-	-
Birth companion			0-1	0-1	0.52	0.50
Yes	55	45.1	-	-	-	-
No	67	54.9	-	-	-	-
Childbirth knowledge	-	-	0-16	3-16	10.02	3.13
Delivery mode			0-6	0-6	3.75	1.52
Labor progress			0-6	0-6	3.97	1.43
Coping with labor			0-4	0-4	2.31	1.13
Professional support	-	-	12-60	34-60	53.12	5.98
Fear of childbirth	-	-	15-60	15-60	38.90	9.25
Mother & Infant's health			5-20	5-20	14.34	3.80
Lose self-control			4-16	4-16	11.21	3.13
Pain			4-16	4-16	10.42	2.91
Unknown intervention & environments			3-12	3-12	5.48	2.12

From Table 3, descriptive statistical analysis results of participants' obstetrical data indicated that 66.4% (n = 81) parturients were primiparous women, whilst multiparous women owned once, twice or third times of vaginal birth occupied 27.9% (n = 34), 4.9% (n = 6) and 0.8% (n = 1), respectively. The mean value of vaginal birth number as 0.40 time (*SD* = 0.63, actual range = 0-3).

The mean of birth companion was 0.52 (*SD* = 0.50, range = 0[No]-1[Yes]), among whom had no one accompanied occupied 54.9%.

Their average childbirth knowledge was 10.02 scores (*SD* = 3.13) out of 16. It is noteworthy that the dimension rated the highest score was labor progress (*M* = 3.97, *SD* = 1.43), followed by the dimensions of delivery mode (*M* = 3.75, *SD* = 1.52) and coping with labor (*M* = 2.31, *SD* = 1.13).

The mean of professional support was 53.12 scores out of 60 (*SD* = 5.98, range = 34-60).

The childbirth fear score ranged from15-60, of which the mean score was 38.90 (*SD* = 9.25). Among the four dimensions, fear for mother and infant's health during labor reported the highest score (14.34 ± 3.80) out of 20. Besides, the mean score of fear for losing self-control was relative higher than fear for pain, which were 11.21 ± 3.12 and 10.42 ± 2.91 out of 16 respectively. The lowest score was domain of fear for unknown, such as hospital environment and medical interventions (*M* = 5.48, *SD* = 2.12).

Descriptive data of childbirth self-efficacy

The study had the dependent variable as childbirth self-efficacy (CBSE) consisting of two subscales: outcome expectancy and efficacy expectancy. This variable and its subscales were analyzed by descriptive statistics. The results are illustrated in Table 4.

Table 4 Descriptive statistical analysis results of childbirth self-efficacy (N = 122)

Dependent variable	Range		M	SD	LEVEL
	Possible	Actual			
Childbirth self-efficacy	32-320	67-320	225.89	47.86	High
- Outcome expectancy	16-160	39-160	122.97	25.58	High
- Efficacy expectancy	16-160	28-160	102.92	28.71	Moderate

In Table 4, the results revealed the possible score of total childbirth self-efficacy scale ranged from 32-320 with actual range from 67 to 320, the mean of CBSE was 225.89 (*SD* = 47.86) when its levels came from a trisection of possible range as 32 to 320 (32-128 = low, 129-224 = moderate, 225-320 = high). For CBSE subscales, parturients had high level of OE (M = 122.97, SD = 25.58, actual range = 39-160) but moderate level of EE (M = 102.92, SD = 28.71, actual range = 28-160). Subscale levels were from a trisection of possible range as 16 to 160 (16-64 = low, 65-112 = moderate, 113-160 = high).

Standard multiple linear regression analysis of factors predicting CBSE

Standard multiple linear regression analysis was conducted to test whether parity, birth companion, childbirth knowledge, professional support, and childbirth fear together could explain CBSE.

However, before using this statistical method, its assumptions were examined.

Assumptions of standard multiple linear regression analysis

1. Normal distribution of variables was examined for the continuous variables by Skewness coefficient, Kurtosis coefficient, and Kolmogorov-Smirnov test. Means, standard deviations, and ranges were used to describing the continuous variables, which was found that childbirth knowledge, fear of childbirth, and childbirth self-efficacy were the normal distribution except for professional support which was a skewed distribution variable. Categories variables, including parity and birth companion, were described by frequencies and percentages.

2. Correlation analysis. Pearson's product-moment correlation coefficients was used to test normal distribution and continuous variables, while the skewed distribution variables and categorical variables were tested by Spearman's Rho correlation coefficient. For the strength of the size of correlation coefficients was based on Schober, Boer, and Schwarte (2018). As for correlation analysis showed in table 5, four selected variables met the assumption as having a significant correlation with childbirth self-efficacy ordered by strongest to lowest correlation coefficients are as follows: childbirth knowledge ($r = .41$, $p < .01$), professional support ($r_s = .40$, $p < .01$), parity ($r_s = .23$, $p < .05$), fear of childbirth ($r = -.19$, $p < .05$), except the birth companion that showed no statistically significant correlation with self-efficacy ($r_s = .12$, $p > .05$). For the subscales of CBSE, the selected factors showed significantly moderate and weak related to OE were childbirth knowledge ($r = .50$, $p < .01$), professional support ($r = .44$, $p < .01$). On the other hand, the selected variables had weak correlation with EE were childbirth knowledge ($r = .23$, $p < .01$), professional support ($r = .29$, $p < .01$), parity ($r = .27$, $p < .01$).

Table 5 Correlation coefficients between selected factors with Childbirth Self-efficacy and subscales (Outcome expectancy [OE] & Efficacy Expectancy [EE]) (N = 122)

Variables	**Correlation coefficients**
Childbirth Knowledge	**.41$_r$****
OE	.50**
EE	.23**
Professional Support	**.40$_{rs}$****
OE	.44**
EE	.29**
Parity	**.23$_{rs}$***
OE	.09
EE	.27**
Fear of Childbirth	**-.19$_r$***
OE	-.17
EE	-.16
Birth Companion	.12$_{rs}$
OE	.06
EE	.14

*Notes: *p < .05, **p < .01 (2-tailed)

r = Pearson's product moment correlation, r_s = Spearman's rho correlation

3. Multicollinearity assumption

The presence of severe multicollinearity was assessed by inspecting the variance inflation factor (VIF > 10) associated with each independent variable. There is no multicollinearity was detected (VIF were all near 1.0), no outliers, and the homoscedasticity test yields the *p*-value < .05. The Durbin–Watson statistic can vary between 0 and 4, which has an acceptable range of values from 1.50 to 2.50, with a value of 2.13 meaning that the residuals are uncorrelated.

Results of standard multiple linear regression analysis

Data were calculated by regression analysis with the method of "enter". The R^2 was an indicator of how much variance was explained by the model compared to how much variance was not explained after the model had been fitted. All statistical tests were two-sided and performed at a significance level of .05. Results of regression analysis were displayed in Table 6.

Table 6 Standard multiple linear regression analysis results having DV as CBSE (N = 122)

IV	**B**	**SE**	***β***	***t***	***p-value***	**VIF**	**Durbin-Watson**
(Constant)	46.28	37.85		1.22	.224		2.113
Professional support	2.93	.67	.366	4.40	.000	1.204	
Childbirth knowledge	3.61	1.30	.236	2.77	.006	1.257	
Parity	12.69	6.07	.166	2.09	.039	1.090	
Fear of childbirth	-.54	.41	-.104	-1.31	.195	1.109	
Birth companion	6.93	7.66	.073	.90	.368	1.119	
R^2 = 0.332, R^2(adj) = 0.303, $F_{(5,116)}$ = 11.531, p = 0.000							

From Table 6, the standard multiple linear regression analysis results pointed out that all IV (i.e., parity, birth companion, childbirth knowledge, professional support, and childbirth fear) explained 30.3% of the variance in CBSE among the parturients during the latent phase of labor (R^2 adjusted = 0.303, $F_{(5,116)}$ = 11.531, $p < .001$). However, only three predictors, including professional support, childbirth knowledge, and parity were significant predictors, except two other variables, which were fear of childbirth and birth companion. Professional support presented the best predictor ($\beta = .366$, $p < .001$), followed with childbirth knowledge ($\beta = .236$, $p < .01$) and parity ($\beta = .166$, $p < .05$), which means higher professional support, gain more childbirth knowledge and multiparous women might lead higher childbirth self-efficacy.

CHAPTER 5
CONCLUSION AND DISCUSSION

This chapter presents the conclusion and discussion of the study about predictors of childbirth self-efficacy among parturients during the latent phase of labor in China. Also, its implication, limitation, and future research recommendations are introduced.

Summary of the findings

The objectives of the predictive correlation study were to describe the level of childbirth self-efficacy among Chinese low-risk parturients during their latent phase of labor and identity the related factors and predictors of numbers of vaginal birth, childbirth knowledge, birth companion, professional support, fear of childbirth that together explain CBSE. The conceptual framework of the study was based on Lowe's childbirth self-efficacy theory (Lowe, 1991) and literature review. Convenient sampling was applied to collect data from 122 participants during the latent phase of labor who visit the labor room of the first affiliated hospital of Wenzhou medical university from August to November 2021 in China. The instruments of the study include the demographic and obstetrical questionnaire, self-reported childbirth knowledge questionnaire, professional support questionnaire, childbirth attitude questionnaire, and 32-item childbirth self-efficacy inventory. The reliability of instruments was tested in the pilot study including 30 cases of low-risk parturients during the latent phase of labor. For childbirth knowledge, the Kuder-Richardson-20 (KR-20) coefficient was reported around .72. The Cronbach's α of professional support questionnaire, childbirth attitude questionnaire, and 32-item childbirth self-efficacy inventory were .846, .851, and .93 respectively. Data were analyzed by descriptive statistics, Pearson's product-moment, Spearman Rho correlation, and Multiple linear regression analysis.

The research found that the parturients' mean reproductive age was 29.55 years old (*SD* = 5.07). Majority of their pre-pregnant BMI was between 18.5-24.9 kg/m^2 (65.6%), and 38.5% gained appropriate weight during pregnancy. Most were

married (94.3%), had no religion (63.1%), and lived in town and countryside (73%). Of the participants, mostly owned educational background was junior college or above (74.5%), full-time employed (75.4%), earned annual household income of ¥150,000- ¥300,000 (23583-47166 USD), and paid medical expenses by medical insurance (77%).

According to the obstetric data of parturients, the mean gestational age was 39.66±1.02 weeks. Over half of them were primiparas (66.4%), had no experience of abortion (68.9%), planned for the pregnancy (60.7%), and had attended childbirth classes or midwife clinics (52.5%). During labor, husband was the priority choice for birth companion (41%), but around 54.9% of women did not have a birth companion.

According to the total score of CBSE, the mean score of 225.89 ± 47.86 out of 320 with higher OE-16 (M = 122.97, SD = 25.58) than EE-16 (M = 102.92, SD = 28.71). Four selected variables had a significant correlation with childbirth self-efficacy from strongest to lowest correlation coefficients are as follows: childbirth knowledge (r = .41, β = .236, $p < .001$) and professional support (r_s = .40, β = .366, $p < .01$), parity (r_s = .23, β = .166, $p < .05$), fear of childbirth (r = -.19, $p < .05$; β = -.104, $p > .05$), except the birth companion (r_s = .12, β = -.073, $p > .05$). The results of multiple linear regression pointed out all of IV (i.e., parity, birth companion, childbirth knowledge, professional support, and childbirth fear) explained 30.3% of variance in maternal CBSE (R^2 = 0.319, $F_{(5,116)}$ = 11.691, p = .000).

Discussion

Childbirth self-efficacy [CBSE]

In the study, the mean score of total CBSE reported among Chinese low-risk parturients was 225.89 (SD = 47.86), which showed in the lowest boundary of high level, containing OE-16 (M = 122.97, SD = 25.58, high level) was higher than EE-16 (M = 102.92, SD = 28.71, moderate level) that is similar with other studies (Gourounti, Kouklaki, & Lykeridou, 2015). It illustrated that parturients could differentiate the concepts of “outcome expectancy” and “efficacy expectancy” whether they were during the pregnancy or in the realistic labor context, which was similar to the original standpoint of W. IP (2005) that women might believe that a certain behavior could lead to a desirable outcome (higher OE) but not actually have

the confidence to exert into practice (lower EE) when they think they cannot perform it.

Compared with studies in other countries, Gourounti, Kouklaki, and Lykeridou, (2015) reported the mean of OE and EE among nulliparous women in Greek was 133.8 (*SD* = 20.5) and 118.1 (*SD* = 27.1). Similar to Lowe (1993), who also presented the OE and EE among England pregnant women were 129.6 (*SD* = 20.6) and 106.6 (*SD* = 26.8), which were both higher than the current study. The explanations for the findings of Chinese CBSE among countries can be enumerated in terms of national culture. Different cultural perceptions and practices in various ethnic groups influence the CBSE. Arising from the Confucian paradigm in China, there is an old saying goes: No posterity is the greatest of the three unfilial acts. Childbirth is not merely a matter of a woman or couple, but also an important event for the entire family. Women were the major ones to be expected to have a responsibility towards the birth event (Soh et al., 2020), who tend to be stressed and confident busting of birth more easily when the setback continues to mount, such as older generations who doubt women's physical conditions, including shorter and vulnerable appearance, some may even exaggerate the vaginal birth risk and highly recognize the benefit and safety of cesarean section, thus affect their attitude towards pregnancy and birth progress (Matinnia et al., 2018). Besides, a long list of inherited Chinese traditional customs set restrictions on physical activities and special diets to safeguard unborn babies from danger. Meanwhile, less exercise and poor health-related quality of life increased their inappropriate weight gain, as there is 61.5% in the current study, which increased perceived stress (Lau, 2012) and lower one's CBSE. Moreover, in the study, around 77% of women came from city and town, the majority were less than 35 years (91%), who are mostly single children born since the one-child policy was introduced in 1980 in China, they tend to be more spoiled, poor living independently ability, fear of suffering and lacking the determination to overcome difficulties alone (Yan, 2011). All the reasons support the lower level of Chinese CBSE, especially the efficacy expectancy than other countries.

However, within China, the mean score of CBSE in Wenzhou showed a relatively high level among several previously published studies in other domestic regions, which was higher than studies in Hongkong (Ip et al., 2008), Sichuan (Ding,

2020) and Hainan (Liu et al., 2014), but lower than one study in Guangzhou (Gao et al., 2011). It was found that policy, age, education background, occupation, and patient-control epidural analgesia receiving might affect CBSE in the current study.

As known, the Chinese two-child policy was implemented after the year 2016, followed by the three-child policy announced in 2021 created a positive influence on CBSE. China advocates raising the fertility rate with attractive welfare in numerous dimensions for the current situations of low birth rate. Huang (2019) compared the non-indication cesarean section rates before and after the two-child policy implemented, which reported that the cesarean section rate due to social factors significantly decreased. Meanwhile, a Study showed that primigravida women with future second-child intention appeared to be significantly higher self-efficacy for vaginal birth than women who had no willingness to have another baby (Hou et al., 2017). Obviously, women might choose delivery mode more seriously when they have more than one birth intention, previous cesarean section would increase the risk for future birth, also limit women's choice of second delivery mode so that they are more willing to persist with spontaneous vaginal birth.

Age might affect CBSE in some degree. 25-29 years old was considered the best reproductive age with a lower rate of labor risk and delivery complications (Cavazos-Rehg et al., 2015). In the current study, the mean age of women is 29.55 (*SD* = 5.07), which is the higher edge of the suggested age. Yuksel (2019) suggested that older pregnant women had significant higher self-efficacy scores. Similar to the study of Larsen and Plog (2012), they also indicated that women with increased age would enhance CBSE after birth class. It is mainly due to the puerpera conditions mature in all aspects than younger women, including physiological and mental conditions, who easily accept unexpected events during labor, tend to be calm down, have better self-control ability, and have good cooperation with the order of medical staff. Moreover, they are more likely to value their pregnancy chance and would be more willing to listen and learn from other experience to increase "vicarious experience", which improve their CBSE during labor.

In addition, other significant factors are education background and childbirth education received. Wenzhou is a coastal city with rapid development and diversity culture. The opportunities of getting educated are higher than general inland. Hou, He,

Sun, & Yang, (2017) indicated that women owned higher education degrees reported positive influence on CBSE. In the study, around 74.5% of women possess junior college and above, which presented a higher education level. Well-educated women are used to focusing more on their health during pregnancy, own better self-learning ability to study relative knowledge actively, and more likely to control emotions or adjust their status well when they feel upset and stressed. They would have the initiative to find more channels to learn about unknown situations, such as attending live birth courses online/offline, hearing about birth experience of others or watching delivery video on social media platforms (eg. TikTok), and consulting doctor/midwife clinics to receive more relative childbirth information, which improves their "vicarious experience" about labor progress and expands knowledge of coping with pain to help them understand their skills well and assess their ability accurately, subsequently increase their confidence and reducing unknown stress (Gourounti, Kouklaki, & Lykeridou, 2015; Rahimparvar, 2012). According to Hou, He, Sun, & Yang, (2017), childbirth knowledge comes from medical staff and publicity materials in hospitals increased one's CBSE. In the study, only 50% reported they had attended birth class online/offline or consulted midwife clinics, compared with the study of Gao et al. (2011), which has 100% of attendants that reported higher OE and EE (OE = 127.56, EE = 124.56) than the current study.

Occupation might be a reason for higher CBSE among participants. Xu (2017) insisted that full-time employed women own higher OE and EE scores compared with women with precarious jobs. In this study, around 75.4% of women were employed, who kept intact social circles that provided social support and worth information from surroundings to enhance their confidence and abundant their knowledge towards childbirth, thus may influence their CBSE. Certainly, parturients working full-time generally possess higher social status, and may have better decision-making ability with lower working intensity and stress during pregnancy, the sense of self-worth in work brought their higher self-esteem and self-control that also related to higher self-efficacy for birth (Cherian & Jacob, 2013)

Patient-control epidural analgesia (PCEA) is considered another factor to increase CBSE. It's prevalent that anesthesiologists are stationed in the delivery room for 24 hours a day in Wenzhou, China, as a maternal high requirement for PCEA

receiving. It could significantly reduce maternal perceived labor pain and anxiety (El-Kurdy et al., 2017; Gao et al., 2011). Similar to the theory of Lowe (1993), who pointed out the physical and emotional status could be the source of CBSE, parturients receiving PCEA might prepare better physical and emotion to confront labor pain to cooperate with medical staff and well-performed during labor, thus, improved CBSE. In the study, there is relative high percentage of participants (59%) chose to have PCEA, which might lead to a maternal higher CBSE.

Factors predicted CBSE among the parturients during latent phase of labor

In the study, positive correlations were found between parity, childbirth knowledge, and professional support with CBSE, when fear of childbirth was reported negatively related to CBSE. Birth companion was showed not significantly related to CBSE. All the variables jointly explained 30.3% variance of CBSE.

1. Parity

Parity was shown to be a significant predictor of CBSE, as the results reported that having more numbers VB times refers to higher CBSE, especially the level of EE. Excluded the influence of previous cesarean section and abortion experience, the results were consistent with other studies in Hongkong (Ip et al., 2008), Singapore (Soh et al., 2020), American (Neerland et al., 2019), and Australia (Schwartz et al., 2015). For Lowe's CBSE theory, the first, as well as the most powerful source, is the performance accomplishment that strongly affects one's efficacy beliefs (Lowe, 1993). Birth experiences are unique events, women acquire intuitive information and direct visceral sense during the "endless" progress, which strongly builds their performance accomplishments, that is coping skills (EE) in the childbearing cycles (Tilden, Caughey, Lee, & Emeis, 2016). With every birth experience, multiparas women cultivated more tactical experience, including physical and mental well preparation to equip them with self-knowledge about what childbirth is and even when or how can they use relative skills to cope with labor progress. Once women own relative strategies and know how they could apply accurately in the field was proved to highly increase their efficacy expectancy. On the contrary, nulliparas

women lack prior mastery experience, even if acquire related information from other approaches that may not be perfect personalization which could be difficult to transform into their practice. However, it was part of inconsistent with the study in Guangzhou (Gao et al., 2011), which stated parity was significantly related to both OE and EE due to its high rate of antenatal class attendance (100%). As for Tshuma et al. (2017), it elaborated that premotivational cognition, such as perceived benefits, severity, and barriers maternal acquired from others could significantly enhance both one's OE and EE. Hou, He, Sun, & Yang, (2017) also reported nulliparous women with next birth intention and multiparous with previous positive experience showed significantly related to higher CBSE, which may indirectly influence maternal OE and EE status.

2. Childbirth knowledge

In this study, the mean score of maternal childbirth knowledge was 10.02 (SD = 3.13) out of 16, among which the highest dimension was labor progress (M = 3.97, SD = 1.43) and the lowest dimension was coping with labor (M = 2.31, SD = 1.13). There was statistically significant correlation between childbirth knowledge and CBSE (r = .41, p < .05), as positive significant high correlation with OE (r = .50, p < .05), and weakly related with EE (r = .23, p < .05). This result supported previous studies (Ahmadi, 2018; El-Kurdy et al., 2017; Howarth & Swain, 2019; Schwartz et al., 2015) that increasing childbirth knowledge was associated with higher CBSE levels. In this study, childbirth knowledge was also showed an important predictor of CBSE (β = .258, p < .05), which was consistent with the hypothesis of the study. Childbirth knowledge contains the essential information as well as coping strategies that women should prepare for the forthcoming birth, especially the nulliparous who had no previous experience. Howarth and Swain (2019) conducted skill-based childbirth and self-directed preparation program for first-time mothers, including breathing exercises, verbal and non-verbal communication exercises, tension-reducing exercises, and body exercises as well as advice about stages, delivery methods, and when to use the skills, which showed greatly improved their self-efficacy and self-control during labor. Besides, as Lowe (1991) stated, the vicarious experience obtained from seeing others perform successfully in a given situation would enhance one's self-efficacy. Avery et al. (2014) found gaining birth

information, accompanied by using the information to participate in care decisions with a trusted provider appears further contribute to enhanced maternal confidence. It is similar to Hou, He, Sun, & Yang, (2017), which indicated that information from medical staff could mainly enhance one's CBSE. Other approaches, such as birth stories from sister (Carlsson et al., 2015), group sessions, Internet (Abbasi, 2018), and antenatal birth rehearsal (Zhang, Xu, Chen, & Zhao, 2016), all of those could complement the vicarious experience, gain support for women to overcome fear and self-doubt, thus increasing maternal CBSE. Hence, childbirth knowledge not only provides parturients the information and skills but also enhanced their vicarious experience and adjusted their emotional and physical status during the knowledge preparation process in pregnancy and labor, consequently it could be a significant predictor of CBSE.

3. Professional support

Professional support was found to be the strongest positive predictor of CBSE during the latent phase of labor. The result was consistent with the majority of studies (Ahmadi L 2018; Avery et al., 2014; Leap et al., 2010; Salomonsson et al., 2013). Professional support could be divided into two dimensions, including information and emotional support. Firstly, information refers to childbirth knowledge, in the study, professional support was found to be correlated with childbirth knowledge. It indicated that women acquired plentiful coping techniques from medical staff that could soon be applied in the context of the latent phase of labor. Practical coping techniques lead to the sense of labor self-management as maternal secondary performance achievement, somehow reduce their somatic arousal and help them keep calm, confidence, and self-control that could affect their CBSE to some degree (Campbell & Nolan, 2019). With professional childbirth information, medical staff could target demonstrate maternal childbirth progress and relative coping strategies in their realistic suffering situation, infiltrate the benefits and severity as well as disabuse barriers of their coping behavior, which greatly enhance maternal the correct understanding of childbirth knowledge gained during pregnancy, also strengthen the maternal conviction of confronting with labor obstacles. Accompanied with abundant case experience, professionals propagandize "successful birth stories" for women in various way that show the courage and infused with a

belief in a normal birth, as a vicarious experience that also inspire their self-efficacy themselves (Campbell & Nolan, 2019; Leap et al., 2010; Lowe, 1993; Sun et al., 2010). In line with Hou, He, Sun, & Yang, (2017), they reported information that came from professionals was much more persuasive power.

Professional emotional support also accounts for a lot in CBSE. From the current results, the lowest mean score was item 11 of "The staff stopped doing something if I asked them to stop", which illustrated women are eager for the high attention from medical staff when they are vulnerable and susceptive during the latent phase of labor. Salomonsson et al. (2013) indicated guidance about what to do and responsibility to professionals were aspects of defining one's self-efficacy. Women recognized the skilled midwives as the best person that know them well, willing to hand over control right and listen to their instructions. Liu, Wang, Yang, & Zhang, (2017) also presented that professional support among the perceived support scope was showed a higher correlation with CBSE, who emphasized professionals were more convinced and reliable when they communicate with parturients using positive language hint. According to Avery et al. (2014), the "respect and collaborative relationship" as well as "continuity of care" from a known midwife could build a special "two-way" relationship of trust between women and midwife that help women pass the perinatal period. Even when the labor presented challenges, recognizing their expertise and the professional role of guidance, women felt "at ease" and "comfortable" and were inspired with their persistent encouragement and reassurance, which significantly linked with the affirmative verbal persuasion and lead to a positive emotional status that consequently growing maternal confidence for physiological labor.

4. Fear of childbirth

The results of the analysis showed that fear of childbirth (FOC) was negatively associated with CBSE. It was similar to most studies that found the relationship between the two variables (Carlsson et al., 2015; Gao et al., 2015; Schwartz et al., 2015), unexpectedly, this study found the FOC that presented at a relative moderate level and could not predict CBSE (β = -.104, p > .05), which rejected with and the hypothesis. In contrary to Qiu et al. (2019) study, which found that FOC was the significant predictor of CBSE. However, it lacks evidence to prove

a cause-and-effect relationship between FOC and CBSE, thus, it was difficult to define if fear comes first or low confidence pre-exists (Schwartz et al., 2015).

A possible reason for the current study is the women with severe FOC were influenced by social surroundings, which in self-efficacy theory terms means that they were prompted by the other sources: performance achievement, vicarious experience, verbal persuasion, and physical status (Lowe, 1993). This study covered more multiparous women (33.6%) who owned previous childbirth experience (performance achievement), higher professional support (vicarious experience & verbal persuasion) and more than half of PDCA received rate (59%) (physical status) that reduce the major fear towards pain. During the latent phase of labor, they witness a wardmate in near hospital beds successfully ended childbirth or share birth stories with joyousness (peer vicarious experience), all of which contributed to making women believe in their coping ability, enhanced their CBSE and cooperate well with instructions of midwives. Meanwhile, in the context of the COVID-19 pandemic in China these years, the risk of virus infection, inconvenience of the medical treatment process as well as restriction of activities outdoors and visitors in hospital might lead to higher maternal negative mental health during pregnancy and childbirth (Mayopoulos et al., 2021). However, there was a consensus that the mode of birth should not be influenced by maternal COVID-19 (Pavlidis et al., 2021), thus it rarely predicted maternal self-efficacy toward upcoming birth.

5. Birth companion

In this study, birth companion was not significantly related to CBSE and could neither predict CBSE, which rejected the hypothesis of the study and was inconsistent with other previous studies' results (Cunqueiro, 2017; Ding, 2020) that demonstrated partner support during labor could significantly increase maternal CBSE. Firstly, the reason might be explained by that there was just a single-choice item for "have a birth companion or not and who are attendants" but not assessed by a comprehensive scale that well represents the concept of maternal perceived effectiveness of companionship. Furthermore, it was found in the study that there were 45.1% of parturients have a birth companion during the latent phase of labor, among which 41% of whom choose a husband as the companion, whilst only 4.1% were mothers-in-law (3.3%) and mothers (0.8%). It was inconsistent with Al-Mandeel

et al. (2013), who suggested mothers (58%) were preferred as the best birth companion during labor. Zhang et al. (2013) also indicated birth attendants who were female elders, such as mothers with the abundant available birth experience, can resonate with parturients in the personal sense, and created a private and safe birth environment for women. Besides, Al-Mandeel et al. (2013) showed women did not prefer a husband due to their insufficient support during labor (35.9%) or the companion may suffer psychological damage upon attending a birth (35.9%). With the absence of birth knowledge and life care experience, the husband might have less relative effective skills to take good care of painful women during labor (Ahmadi, 2018; Hasman, Kjaergaard, & Esbensen, 2014), especially lacking physiological and information support and correct normal labor concept (Zhang et al., 2013). Besides, the frequent obstetrical vaginal examination and bloody scenes might cause the husband's negative emotions, like embarrassment, fear, and helpless that further affect maternal emotion and confidence for natural birth. Additionally, one study presented the relationship between self-efficacy, psychological well-being, and perceived social support by Yuksel (2019), they suggested that not the source of social support but the sufficient level of social support is critical in meeting the expectations of women, which explained that although majority women have birth company, insufficient perceived support from the birth company during labor might interpret the birth company could not predict CBSE.

Interestingly, the current study found a correlation of birth companion and CBSE among nulliparous women, which is consistent with other studies (Attanasio et al., 2014; Sapkota, 2012). One possible interpretation for the result might be primiparous were unfamiliar with the unknown labor progress, environment, and care provider, who are more likely to prefer one intimate companion as a junction to accompany with labor to help decision-making and effectively communicate with medical staff. Multiparous owned birth experience tends to rely more on trusted professionals, who insisted they were more helpful. Otherwise, the study also found the relationship between birth companion and childbirth fear and knowledge, which might illustrate that birth companion might affect CBSE indirectly that needs be further verified.

Implication to nursing practice and education

The finding of the current study might be applied to several areas as follows:

Midwifery practice

Gaining deeper insight into the relationship between predictors of parturients' CBSE during labor could propel theoretical knowledge related to childbirth self-efficacy into clinical implications. It could provide scientific evidence to design a comprehensive interventional program during an antenatal period by targeting parturients unemployed, without PCEA received, poor childbirth knowledge, lacking sufficient professional support, have no birth experience, further improving nursing clinical practice during labor to increase maternal coping self-efficacy for childbirth. Thus, to promote maternal cooperation with medical staff, decrease the rate of cesarean section on maternal request, pharmacological pain-relief requested, and increase maternal satisfaction with vaginal birth in China.

Midwifery administration.

For administrators, it is necessary to distinguish parturients of different levels of CBSE. It was suggested to set criteria for Chinese to divide into three levels, which are low, moderate, and high levels of CBSE. Besides, an assessment of maternal CBSE is recommended to be conducted in prenatal routine screening over the whole pregnancy and labor time, which could avoid maternal preference of CS and provide intervention in time. It could be found that professional support is a significant predictor for CBSE, so higher the ratio of the midwife to parturients, and improve the training system for providing labor support, including information, emotional support, and guidance for every midwife.

Midwifery Education

The study has provided information about the aspects of parity, childbirth knowledge, professional support, fear of childbirth, birth companion, and revealed the relationship between these variables and CBSE, which guided childbirth educators to make up an individual systematic project for developing continuity midwifery care in the perinatal period in China. For women without vaginal birth experience, a vivid birth rehearsal, and visiting the labor room could be an effective educational method. Besides, it could establish a comprehensive childbirth knowledge education, including recognition of delivery mode, labor progress, relative coping strategies through

diverse approaches, such as pregnant preparation classes, social platforms (Tik-Tok, realistic TV programs), or some pop-science articles/videos to propagandize the childbirth knowledge for women. Pay attention to the women with utmost fear of childbirth, providing more midwifery clinical consultation opportunities to solve related concerned problems, subsequently, target interventions refer to maternal poor aspect and prompt parturients to prepare better psychological status towards upcoming birth, which increase maternity care quality and improve birth experiences.

Recommendations for future research

The strength of the study is using the regression coefficient statistics to explore the predictors of childbirth self-efficacy among nulliparous and multiparous women during labor with the reliability and valid instruments in China. However, it also has some limitations. Firstly, it is a predictive correlational study. Given that childbirth self-efficacy may change over the course of a pregnancy, a longitudinal study is needed to explore causal relationships in the future. Secondly, the use of convenience sampling from one tertial hospital may limit the generalizability of the results, which suggested that further study could apply in multiple settings, increasing the samples of low education level, low income, and variety of races. Thirdly, the childbirth knowledge questionnaire was self-reported which might cause the possibility of social desirability bias.

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APPENDIX

APPENDIX A

BUU LETTERS ASKING FOR PERMISSION OF USING INSTRUMENTS OF C-SCIB

MHESI 8137/1097

Graduate School, Burapha University
169 Longhaad Bansaen Rd.
Saensuk, Muang, Chonburi
Thailand, 20131

May 17th, 2021

Dear Shu-Yu Liu,

On behalf of the Graduate School, Burapha University, I would like to request permission for Ms. MAO LI to use a research instrument for conducting research.

Ms. MAO LI ID 62910088, a graduate student of the Master of Nursing Science Program (International Program), Major in Maternity Nursing and Midwifery, Faculty of Nursing, Thailand, was approved her thesis proposal entitled: "Factors Predicting Childbirth Self-Efficacy Among Low-risk Parturients During Latent Phase of Labor", under supervision of Assist. Prof. Dr. Wantana Suppaseemanont as the principle advisor. She proposes to use a research instrument that is "A Chinese Version of the Support and Control in Birth Scale (C-SCIB)" from an article with entitled: "Psychometric Testing of the Support and Control in Birth Scale" by Liu, S.-Y., et al., published in *BioMed Central Pregnancy and Childbirth*, 20(1), 293-303, 2020.

In this regard, you can contact Ms. MAO LI via mobile phone +86-1369-5885-700 or E-mail: 289612022@qq.com

Please do not hesitate to contact me if you need further relevant queries.

Sincerely yours,

(Assoc. Prof. Dr. Nujjaree Chaimongkol)
Dean of Graduate School, Burapha University

Graduate School Office
Tel: +66 3810 2700 ext. 701, 705, 707
E-mail: grd.buu@go.buu.ac.th
http://grd.buu.ac.th

BUU LETTERS ASKING FOR PERMISSION OF USING INSTRUMENTS OF C-CAQ

MHESI 8137/ 1098

Graduate School, Burapha University
169 Longhaad Bansaen Rd.
Saensuk, Muang, Chonburi
Thailand, 20131

May 17th, 2021

Dear Wei Juan,

On behalf of the Graduate School, Burapha University, I would like to request permission for Ms. MAO LI to use a research instrument for conducting research.

Ms. MAO LI ID 62910088, a graduate student of the Master of Nursing Science Program (International Program), Major in Maternity Nursing and Midwifery, Faculty of Nursing, Thailand, was approved her thesis proposal entitled: "Factors Predicting Childbirth Self-Efficacy Among Low-risk Parturients During Latent Phase of Labor", under supervision of Assist. Prof. Dr. Wantana Suppaseemanont as the principle advisor. She proposes to use a research instrument that is "The Chinese Version of the Childbirth Attitude Questionnaire (C-CAQ)" from an article with entitled: "Reliability and Validity Test of the Chinese Version of the Childbirth Attitude Questionnaire" by Juan, W., et al., published in *Journal of Nursing Science (in Chinese)*, 31(2), 81-83, 2016.

In this regard, you can contact Ms. MAO LI via mobile phone +86-1369-5885-700 or E-mail: 289612022@qq.com

Please do not hesitate to contact me if you need further relevant queries.

Sincerely yours,

(Assoc. Prof. Dr. Nujjaree Chaimongkol)
Dean of Graduate School, Burapha University

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BUU LETTERS ASKING FOR PERMISSION OF USING INSTRUMENTS OF C-CBSEI

MHESI 8137/ 1099

Graduate School, Burapha University
169 Longhaad Bansaen Rd.
Saensuk, Muang, Chonburi
Thailand, 20131

May 17th, 2021

Dear Wan-Yim Ip,

On behalf of the Graduate School, Burapha University, I would like to request permission for Ms. MAO LI to use a research instrument for conducting research.

Ms. MAO LI ID 62910088, a graduate student of the Master of Nursing Science Program (International Program), Major in Maternity Nursing and Midwifery, Faculty of Nursing, Thailand, was approved her thesis proposal entitled: "Factors Predicting Childbirth Self-Efficacy Among Low-risk Parturients During Latent Phase of Labor", under supervision of Assist. Prof. Dr. Wantana Suppaseemanont as the principle advisor. She proposes to use a research instrument that is "The Short Form of the Chinese Childbirth Self-Efficacy Inventory" from an article with entitled: "The Chinese Childbirth Self-Efficacy Inventory: The Development of a Short Form" by Ip, W.-Y., et al., published in *Journal of Clinical Nursing*, 17(3), 333-340, 2008.

In this regard, you can contact Ms. MAO LI via mobile phone +86-1369-5885-700 or E-mail: 289612022@qq.com

Please do not hesitate to contact me if you need further relevant queries.

Sincerely yours,

(Assoc. Prof. Dr. Nujjaree Chaimongkol)
Dean of Graduate School, Burapha University

Graduate School Office
Tel: +66 3810 2700 ext. 701, 705, 707
E-mail: grd.buu@go.buu.ac.th
http://grd.buu.ac.th

PERMISSION OF USING INSTRUMENTS MEASURING IV "PROFESSIONAL SUPPORT"

The original version

From "Elizabeth Ford" <E.M.Ford@bsms.ac.uk>

23/3/2021 02:38

Dear Sylvia,

Yes of course, you are welcome to use the questionnaire. If you publish your research could you please cite the article you mention?

With best wishes for your thesis,

Elizabeth.

Dr Elizabeth Ford

Senior Lecturer in Primary Care Research

Department of Primary Care and Public Health

Brighton and Sussex Medical School

The Chinese version

From: meeiling meeiling@ntunhs.edu.tw

3/2/2021 14:12

Sylvia

Please find the attached file is the Chinese version of SCIB questionnaire.

Best wishes for your studies.

Best regards,

Meei-Ling Gau

PERMISSION OF USING INSTRUMENTS MEASURING IV
"CHILDBIRTH ATTITUDE QUESTIONNAIRE"

The Chinese version

From chenxi1105 <chenxi1105@163.com>

3/2/2021 17:57

Sylvia

同意使用 (Chinese)

I approve of your using the questionnaire.

Chenxi

PERMISSION OF USING INSTRUMENTS MEASURING DV "THE SHORT FORM OF CHINESE CHILDBIRTH SELF-EFFICACY INVENTORY"

The Chinese version

From ip2013 <ip2013@cuhk.edu.hk>

9/2/2021 10:53

Dear Sylvia

You are welcome to use the attached scale is for your master study in Burapha University and please make proper acknowledgement of the scale in all our published works.

Regards

Ip Wan Yim

APPENDIX B

Documents related to ethical approval and data collection allowance

สำเนา

ที่ IRB3-091/2564

เอกสารรับรองผลการพิจารณาจริยธรรมการวิจัยในมนุษย์

มหาวิทยาลัยบูรพา

คณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยบูรพา ได้พิจารณาโครงการวิจัย

รหัสโครงการวิจัย : G-HS050/2564

โครงการวิจัยเรื่อง : FACTORS PREDICTING CHILDBIRTH SELF-EFFICACY AMONG LOW-RISK PARTURIENTS DURING LATENT PHASE OF LABOR

หัวหน้าโครงการวิจัย : Ms.MAO LI

หน่วยงานที่สังกัด : คณะพยาบาลศาสตร์

BUU Ethics Committee for Human Research has considered the following research protocol according to the ethical principles of human research in which the researchers respect human's right and honor, do not violate right and safety, and do no harms to the research participants.

Therefore, the research protocol is approved (See attached)

1. Form of Human Research Protocol Submission Version 3 : 21 July 2021
2. Research Protocol Version 1 : 20 May 2021
3. Participant Information Sheet Version 3 : 21 July 2021
4. Informed Consent Form Version 3 : 22 July 2021
5. Research Instruments Version 1 : 20 May 2021
6. Others (if any) Version - : -

วันที่รับรอง : วันที่ 29 เดือน กรกฎาคม พ.ศ. 2564

วันที่หมดอายุ : วันที่ 29 เดือน กรกฎาคม พ.ศ. 2565

ลงนาม *Assistant. Professor Ramom Yampratoom*

(Assistant. Professor Ramom Yampratoom)

Chair of The Burapha University Institutional Review Board

Panel 3 (Clinic / Health Science / Science and Technology)

MHESI 8137/1582

Graduate School, Burapha University
169 Longhaad Bangsaen Rd.
Saensuk, Muang, Chonburi
Thailand, 20131

August 10th, 2021

Dear President of The First Affiliated Hospital of Wenzhou Medical University,

Enclosure: 1. Certificate ethics document of Burapha University
2. Research Instruments (Try out)

On behalf of the Graduate School, Burapha University, I would like to request permission for Ms. MAO LI to collect data for for testing the reliability of the instruments.

Ms. MAO LI ID 62910088, a graduate student of the Master of Nursing Science program, major in Maternity Nursing and Midwifery Pathway, Faculty of Nursing, Thailand, was approved her thesis proposal entitled: "Factors Predicting Childbirth Self-Efficacy Among Low-Risk Parturients During Latent Phase of Labor" under supervision of Assist. Prof. Dr. Wantana Suppaseemanont as the principle advisor. She proposes to collect data from 10 low-risk pregnant women who are visiting the Labor Room of The First Affiliated Hospital of Wenzhou Medical University which inclusion criteria of participants in this study includes

1. Be primiparous or multiparous with regular uterine contractions,
2. Be in latent phase of labor having 2 to 5 cm of cervical dilatation,
3. Have numerical rating pain score less than 4 from 10, and
4. Be able to read, speak, and write in Chinese fluently.

The data collection will be carried out from August 16th, 2021 - August 31st, 2021. In this regard, you can contact Ms. MAO LI via mobile phone +86-1369-5885-700 or E-mail: 289612022@qq.com

Please do not hesitate to contact me if you need further relevant queries.

Sincerely yours,

(Assoc. Prof. Dr. Nujjaree Chaimongkol)
Dean of Graduate School, Burapha University

Graduate School Office
Tel: +66 3810 2700 ext. 701, 705, 707
E-mail: grd.buu@go.buu.ac.th
http://grd.buu.ac.th

MHESI 8137/1583

Graduate School, Burapha University
169 Longhaad Bangsaen Rd.
Saensuk, Muang, Chonburi
Thailand, 20131

August 10th, 2021

Dear President of The First Affiliated Hospital of Wenzhou Medical University,

Enclosure: 1. Certificate ethics document of Burapha University
2. Research Instruments

On behalf of the Graduate School, Burapha University, I would like to request permission for Ms. MAO LI to collect data for conducting research.

Ms. MAO LI ID 62910088, a graduate student of the Master of Nursing Science program, major in Maternity Nursing and Midwifery Pathway, Faculty of Nursing, Thailand, was approved her thesis proposal entitled: "Factors Predicting Childbirth Self-Efficacy Among Low-Risk Parturients During Latent Phase of Labor" under supervision of Assist. Prof. Dr. Wantana Suppaseemanont as the principle advisor. She proposes to collect data from 122 low-risk pregnant women who are visiting the Labor Room of The First Affiliated Hospital of Wenzhou Medical University which inclusion criteria of participants in this study includes

1. Be primiparous or multiparous with regular uterine contractions,
2. Be in latent phase of labor having 2 to 5 cm of cervical dilatation,
3. Have numerical rating pain score less than 4 from 10, and
4. Be able to read, speak, and write in Chinese fluently.

The data collection will be carried out from September 1st, 2021 - November 30th, 2021. In this regard, you can contact Ms. MAO LI via mobile phone +86-1369-5885-700 or E-mail: 289612022@qq.com

Please do not hesitate to contact me if you need further relevant queries.

Sincerely yours,

(Assoc. Prof. Dr. Nujjaree Chaimongkol)
Dean of Graduate School, Burapha University

Graduate School Office
Tel: +66 3810 2700 ext. 701, 705, 707
E-mail: grd.buu@go.buu.ac.th
http://grd.buu.ac.th

温州医科大学附属第一医院　　版本日期：2021.4.29v1.1 版

温州医科大学附属第一医院临床研究立项批件

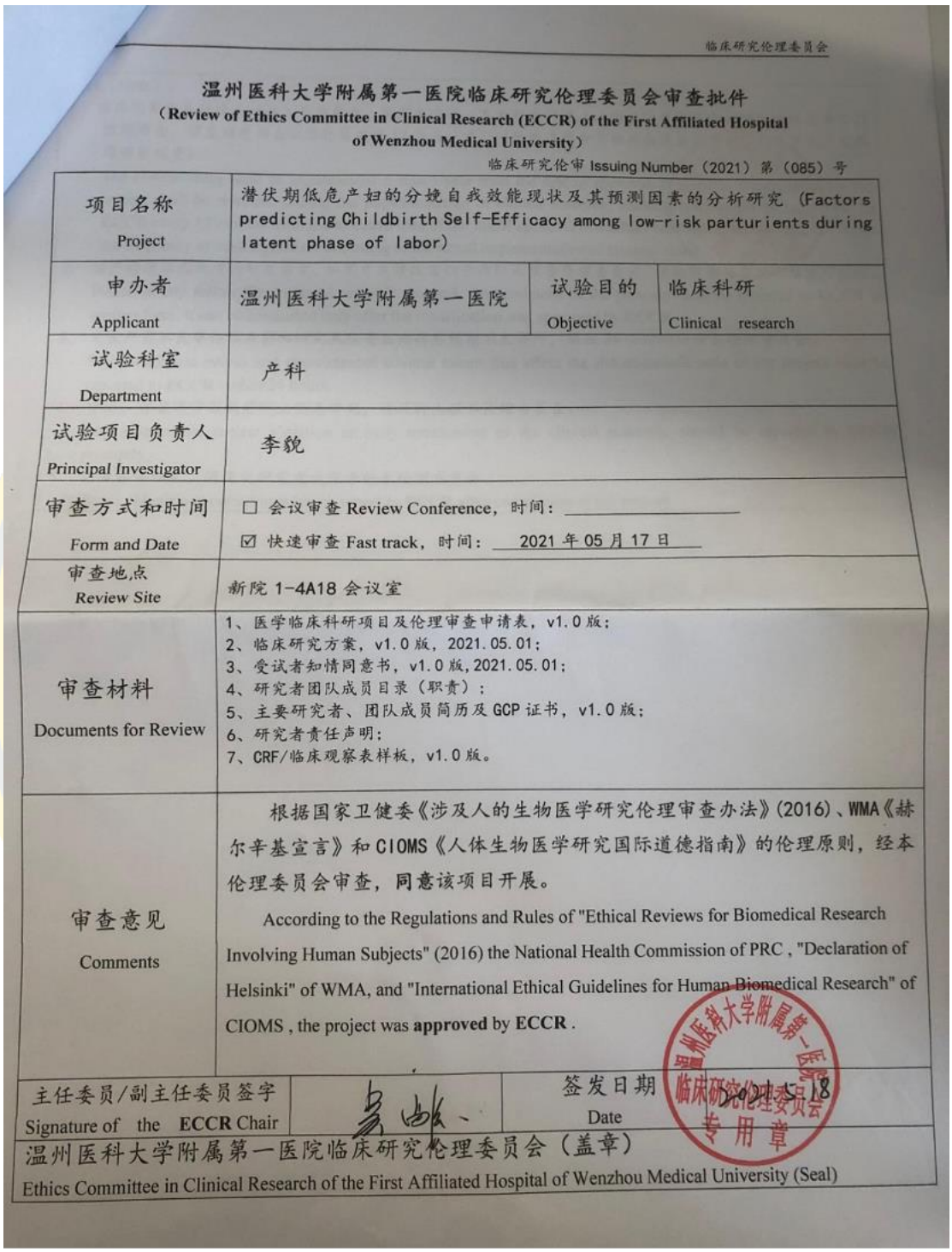
项目名称	潜伏期低危产妇的分娩自我效能现状及其预测因素的分析研究	院内编号	2021-zz-065
项目来源	研究者发起	经费（万）	0 万
研究类型	□回顾性 ☑前瞻性/☑观察性 □干预性	研究目的	□文章发表 □纵向课题 ☑自主研究 □合作课题
负责人	李貌	科室	产科
合作单位	☑否　□是，合作单位名称_____		
审查材料	医学临床科研项目及伦理审查申请表，v1.0 版； 伦理批件 2021-085； 临床研究方案，v1.0 版，2021.05.01； 受试者知情同意书，v1.0 版，2021.05.01； 研究者团队成员目录（职责）； 主要研究者、团队成员简历及 GCP 证书，v1.0 版； 研究者责任声明； CRF/临床观察表样板，v1.0 版。		
审查意见	同意项目开展		
临床研究管理委员会主任		审核日期	2021.5.19

温州医科大学附属第一医院 学科规划与科技处

备注：

1、临床研究科研项目的合同签订参照《温州医科大学附属第一医院临床研究项目管理办法（试行）》，具体经费使用参照《温州医科大学附属第一医院临床研究项目管理办法（试行）》和合同约定执行。

2、临床研究科研项目应按照合同/任务书约定按时完成研究计划，项目完成后，须提交项目完成报告给临床研究管理部门。



临床研究伦理委员会

温州医科大学附属第一医院临床研究伦理委员会审查批件

（Review of Ethics Committee in Clinical Research (ECCR) of the First Affiliated Hospital of Wenzhou Medical University）

临床研究伦审 Issuing Number（2021）第（085）号

项目名称 Project	潜伏期低危产妇的分娩自我效能现状及其预测因素的分析研究（Factors predicting Childbirth Self-Efficacy among low-risk parturients during latent phase of labor）		
申办者 Applicant	温州医科大学附属第一医院	试验目的 Objective	临床科研 Clinical research
试验科室 Department	产科		
试验项目负责人 Principal Investigator	李貌		
审查方式和时间 Form and Date	☐ 会议审查 Review Conference，时间：_____ ☑ 快速审查 Fast track，时间：2021 年 05 月 17 日		
审查地点 Review Site	新院 1-4A18 会议室		
审查材料 Documents for Review	1、医学临床科研项目及伦理审查申请表，v1.0 版； 2、临床研究方案，v1.0 版，2021.05.01； 3、受试者知情同意书，v1.0 版，2021.05.01； 4、研究者团队成员目录（职责）； 5、主要研究者、团队成员简历及 GCP 证书，v1.0 版； 6、研究者责任声明； 7、CRF/临床观察表样板，v1.0 版。		
审查意见 Comments	根据国家卫健委《涉及人的生物医学研究伦理审查办法》(2016)、WMA《赫尔辛基宣言》和 CIOMS《人体生物医学研究国际道德指南》的伦理原则，经本伦理委员会审查，同意该项目开展。 According to the Regulations and Rules of "Ethical Reviews for Biomedical Research Involving Human Subjects" (2016) the National Health Commission of PRC , "Declaration of Helsinki" of WMA, and "International Ethical Guidelines for Human Biomedical Research" of CIOMS , the project was **approved** by **ECCR** .		
主任委员/副主任委员签字 Signature of the ECCR Chair		签发日期 Date	2021.5.18

温州医科大学附属第一医院临床研究伦理委员会（盖章）

Ethics Committee in Clinical Research of the First Affiliated Hospital of Wenzhou Medical University (Seal)

温州医科大学附属第一医院 临床研究伦理委员会 专用章

APPENDIX C

Participant’s information sheet and consent form

PARTICIPANT'S INFORMATION SHEET

BUU IRB approval number: G-HS050/2564

Research project entitled: FACTORS PREDICTING CHILDBIRTH SELF-EFFICACY AMONG LOW-RISK PARTURIENTS DURING LATENT PHASE OF LABOR

Dear participants

I am Ms Mao Li, a postgraduate student at Faculty of Nursing, Burapha University Thailand. My study is "Factors Predicting Childbirth Self-Efficacy (CBSE) among Low-Risk Parturients during Latent Phase of Labor." The objectives are to assess childbirth self-efficacy among Chinese low-risk parturients during latent phase of labor and examine influencing factors of childbirth self-efficacy in Chinese low-risk parturients who are admitted at the First Affiliated Hospital of Wenzhou Medical University in Wenzhou, China.

This is a survey study. Your agreement of participating in this study is voluntary. You will spend approximately 20-30 minutes to answer the questionnaires. During data collection, the researcher will clarify the meaning of questionnaires. Your physical and/or psychosocial identification will not be disclosed. You will not get any direct benefits or participation fee from study participation. However, your given information may be used for developing a caring model or intervention to provide better care to other parturients in near future.

You have the right to end your participation in this study at any time with no necessary to inform the researcher. This does not affect the quality of services you will receive from the labor room. Any information collected from this study will be kept confidentially. A coding number will be assigned to you, and your name will not be used. Findings from the study will be presented as a group of participants and no specific information from any individual participant will be disclosed. All data will be accessible only to the researcher and my thesis advisor, which will be destroyed after study findings are published. You will receive a further explanation of the nature of the study upon its completion if you wish.

The research will be conducted by me, Ms Mao Li, under the supervision of my major thesis-advisor, Assistant Professor Dr Wantana Suppaseemanon. If you have any questions, please contact the researcher via mobile number +8613695885700 or email 289612022@qq.com, and/or my advisor's email address wantanas@buu.ac.th. Also, you could contact Burapha University Institutional Review Board (BUU-IRB) via telephone number +6638102620 or email address buuethics@buu.ac.th. Your cooperation is greatly appreciated. You will be given a copy of this consent form to keep.

Mao Li

INFORMED CONSENT

Research entitled: “Factors Predicting Childbirth Self-Efficacy (CBSE) among Low-Risk Parturients during Latent Phase of Labor”

BUU IRB approval number : G-HS050/2564

Date of data collection August to September, 2021

Before giving my signature below, I have been informed by the researcher, Ms Mao Li, about the purposes, method, procedures, benefits, and possible risks associated with participation in this study thoroughly for which I understood all explanations. I consent voluntarily to participate in this study. I understand that I have the right to leave the study any time I want, without fearing that it might affect the quality of health care services that I will receive from the hospital and labor room.

The researcher, Ms Mao Li, has explained to me that all data and information of the participants will be kept confidentially and only be used for this study. I have read and understood the information related to participation in this study clearly and I am signing this consent form.

Participant: _____

Witness: _____

Date: _____

APPENDIX D

Questionnaires in English and Chinese version

QUETIONNAIRES

Questionnaire number_____

Dear expectant mother,

In order to learn about your psychological health and delivery status during labor, and medical staff can provide you with more targeted services, better protect the health of you and your baby, I hope you can complete the questionnaire with patience. During the filling process, a professional midwife will be there to guide you. At the same time, we will not disclose your personal information to any unrelated persons and organizations. Please answer the following questions according to the actual situation, chose the answer that you think suitable with your conditions, thank you for your cooperation and support!

Mao Li

Questionnaires include four parts (97 items)

Part 1: Demographics and obstetrical questionnaire (21 items)

Part 2: Childbirth knowledge questionnaire (16 items)

Part 3: Professional support in birth (13 items)

Part 4: Fear of childbirth questionnaire (15 items)

Part 5: Childbirth self-efficacy inventory (32 items)

PART 1: DEMOGRAPHIC AND OBSTETRICAL QUESTIONNAIRE

DEMOGRAPHICS QUESTIONNAIRE

Instruction: Please choose the answer by mark ✔ or write down your answers in the blank

1. Date of birth _____ (e.g., 1990.1.1.)
2. Height _____ cm
3. Body weight: Pre-pregnant weight _____ kg, Current weight _____ kg
4. Marital status □ Married □ Single
   □ Divorced □ Widowed
5. Residence □ City □ Town □ Countryside
6. Educational level □ None □ Primary school
   □ Junior school □ Senior school
   □ Junior College □ University □ Above
7. Occupation □ National public servant □ Medical staff □ Teacher
   □ Office clerk □ Self-employed
   □Worker or farmer □ Soldier □ None
8. Religion □Yes, identify_____ (Buddhism/Christianism/Catholicism/others)
   □ No
9. Annual household income _____ ¥
10. Payment method of medical expenses □ Self-paying □ Medical insurance

OBSTETRICAL QUESTIONNAIRE

Instruction: Please choose the answer by mark ✔ or write down your answers in the blank

11. Have you ever had experience of dysmenorrhea?
    □ Never □ Sometimes □ Often □ Always
12. Is this pregnancy is unplanned? □ Yes □ No
13. Have you ever receive childbirth preparation class or been to midwife clinics?
    □ Yes, _____ times □ No

14. Is there anyone who company with you during labor?

□ No

□ Yes, (e.g., husband, mother, mother-in-law, sister, friend, other)

identify _____

RECORD FOR THE RESEARCHER (Item 15-21)

15. Number of pregnancy _____
16. vaginal birth experience _____
17. Number of miscarriage _____
18. Gestational age _____ weeks
19. Current cervical dilatation _____ cm
20. Current pain score_____ (0-10; 0-no pain, 10-the most intense pain)
21. Currently receive medical intervention.

    □ No

    □ Yes, (e.g., balloon dilators, oxytocin induction, amniotomy, patient-controlled epidural analgesia) identify _____

PART 2: CHILDBIRTH KNOWLEDGE QUESTIONNAIRE

Instruction: This questionnaire measures your childbirth-related knowledge. For each item, choose one option depending on your thoughts by mark ✔ in front of that option.

1. In general, hemorrhage rate after cesarean delivery is lower than vaginal delivery. (B)

A. Right B. Wrong C. Unsure

2. In general, infection risk of cesarean delivery is higher than vaginal delivery. (A)

A. Right B. Wrong C. Unsure

3. In general, vaginal birth makes women recover much more rapidly. (A)

A. Right B. Wrong C. Unsure

4. In general, respiratory disorders in infants born by CS are less than vaginal delivery. (B)

A. Right B. Wrong C. Unsure

5. In general, cesarean section is safer for both low-risk mother and infant. (B)

A. Right B. Wrong C. Unsure

6. In general, baby born through cesarean section has better immunity than through vaginal birth. (B)

A. Right B. Wrong C. Unsure

7. Regular and stronger uterine contraction is the main sign of labor. (A)

A. Right B. Wrong C. Unsure

8. More dilatation or thinness of cervix shows progress of labor. (A)

A. Right B. Wrong C. Unsure

9. The 'mucus bloody show' means the cervix begins to dilatate. (A)

A. Right B. Wrong C. Unsure

10. Maternal psychological factors, such as anxiety or fear cannot affect the labor progress. (B)

A. Right B. Wrong C. Unsure

11. During labor period, walking, swaying or remaining upright can speed up labor progress. (A)

A. Right B. Wrong C. Unsure

12. During labor, women should empty bladder every two or three hours. (A)

A. Right B. Wrong C. Unsure

13. During uterine contraction, shouting or holding breath could be benefit for cervical dilatation. (B)

A. Right B. Wrong C. Unsure

14. Adjust breathing rhythm is one of effectiveness ways to cope with labor pain. (A)

A. Right B. Wrong C. Unsure

15. Bodily movement as women wish could help relief labor pain. (A)

A. Right B. Wrong C. Unsure

16. During labor, it is permitted to massage lower back or use hot application at pain areas to reduce the sense of labor pain. (A)

A. Right B. Wrong C. Unsure

Notes: - Three subscales: Delivery mode (item 1-6), labor progress (item 7-12), coping with labor (item 13-16)

- Reversed score items: 1, 4, 5, 6, 10, 13

PART 3: PROFESSIONAL SUPPORT DURING LABOR

Instruction:

The statements given below are the support you may acquiring from medical staff during labor and birth, who are midwives and doctors you met during your labor.

Read each statement and answer if this statement indicates how you feel during labor by mark ✔ in the column most related to your opinion.

There are no right or wrong statements. Do not spend too much time thinking about each item but give the best answer for how you feel.

Each option for answering has meanings as below:

Strongly disagree	=	You strongly disagree with that statement
Disagree	=	You disagree with that statement
Unsure	=	You have no idea about that statement
Agree	=	You agree with that statement
Strongly agree	=	You strongly agree with that statement

	Strongly disagree (1)	Disagree (2)	Unsure (3)	Agree (4)	Strongly agree (5)
1. The staff helped me find energy to continue when I wanted to give up					
2. The staff seemed to know instinctively what I wanted or needed					
3. The staff went out of their way to try to keep me comfortable					
4. The staff encouraged me to try new ways of coping (such as breathing)					
5. The staff realized the pain I was in					
6. The staff encouraged me not to fight against what my body was doing					
7. I felt the staff had their own agenda*					
8. I felt like the staff tried to move things along for their own convenience*					
9. I was given time to ask questions					
10. The staff helped me to try different positions					
11. The staff stopped doing something if I asked them to stop					
12. The staff dismissed things I said to them*					

Notes: * reversed score item

PART 4: THE CHILDBIRTH ATTITUDE QUESTIONNAIRE

Instruction: As the following items are statement according to maternal childbirth attitudes, there are 4-point scale you could choose, tick ✔ at the number that best described your current feelings.

Options for answering have meanings as

Strongly disagree = You strongly disagree with that statement

Disagree = You disagree with that statement

Agree = You agree with that statement

Strongly agree = You strongly agree with that statement

	Strongly disagree	**Disagree**	**Agree**	**Strongly agree**
1. I have fear of losing control of myself at the childbirth	1	2	3	4
2. I am really afraid of giving birth	1	2	3	4
3. I have nightmares about the childbirth	1	2	3	4
4. I have fear of bleeding too much during the childbirth	1	2	3	4
5. I have fear I will not be able to get help during the childbirth	1	2	3	4
6. I have some fear of something being wrong with the baby	1	2	3	4
7. I have fear of painful injections.	1	2	3	4
8. I have fear of being left alone during labor	1	2	3	4
9. I have fear of having to have a caesarean section	1	2	3	4
10. I have fear of being torn with the birth of the baby	1	2	3	4
11. I have fear of the baby being injured during the childbirth	1	2	3	4
12. I have fear of painful labor contractions	1	2	3	4
13. I have difficulty relaxing when thinking of the coming birth	1	2	3	4
14. I have fear of the hospital environment	1	2	3	4
15. I have fear of not getting the kind of care that I want	1	2	3	4

PART 5: THE CHILDBIRTH SELF-EFFICACY INVENTORY

5.1 OUTCOME EXPECTANCY SUBSCALE

Think about how the labor will be and feel when you are having frequent and strong contractions, and when you are pushing your baby out to give birth. For each of the following behaviors, indicate ***how helpful*** you feel the behavior could be helping you cope with the whole labor process by circling a number between **1 (*not at all helpful*)**, and **10 (*very helpful*)**.

	Not at all help									**Completely help**
1. Relax my body	1	2	3	4	5	6	7	8	9	10
2. Get ready for each contraction	1	2	3	4	5	6	7	8	9	10
3. Use breathing during labor contractions	1	2	3	4	5	6	7	8	9	10
4. Keep myself in control	1	2	3	4	5	6	7	8	9	10
5. Think about relaxing	1	2	3	4	5	6	7	8	9	10
6. Concentrate on an object in the room to distract myself	1	2	3	4	5	6	7	8	9	10
7. Keep myself calm	1	2	3	4	5	6	7	8	9	10
8. Concentrate on thinking about the baby	1	2	3	4	5	6	7	8	9	10
9. Stay on top of each contraction	1	2	3	4	5	6	7	8	9	10
10. Think positively	1	2	3	4	5	6	7	8	9	10
11. Not think about the pain	1	2	3	4	5	6	7	8	9	10
12. Tell myself that I can do it	1	2	3	4	5	6	7	8	9	10
13. Think about others in my family	1	2	3	4	5	6	7	8	9	10
14. Concentrate on getting through one contraction at a time	1	2	3	4	5	6	7	8	9	10
15. Focus on the person helping me in labor	1	2	3	4	5	6	7	8	9	10
16. Listen to encouragement from the person helping me	1	2	3	4	5	6	7	8	9	10

5.2 EFFICACY EXPECTANCY SUBSCALE

Think about how the labor will be and feel when you are having frequent and strong contractions, and when you are pushing your baby out to give birth. For each of the following behaviors, indicate how certain you are of ***your ability*** to use the behavior to help you cope with the whole labor process by circling a number between **1 (*not at all sure*)**, and **10 (*completely sure*)**.

	Not at all sure									**Completely sure**
1. Relax my body	1	2	3	4	5	6	7	8	9	10
2. Get ready for each contraction	1	2	3	4	5	6	7	8	9	10
3. Use breathing during labor contractions	1	2	3	4	5	6	7	8	9	10
4. Keep myself in control	1	2	3	4	5	6	7	8	9	10
5. Think about relaxing	1	2	3	4	5	6	7	8	9	10
6. Concentrate on an object in the room to distract myself	1	2	3	4	5	6	7	8	9	10
7. Keep myself calm	1	2	3	4	5	6	7	8	9	10
8. Concentrate on thinking about the baby	1	2	3	4	5	6	7	8	9	10
9. Stay on top of each contraction	1	2	3	4	5	6	7	8	9	10
10. Think positively	1	2	3	4	5	6	7	8	9	10
11. Not think about the pain	1	2	3	4	5	6	7	8	9	10
12. Tell myself that I can do it	1	2	3	4	5	6	7	8	9	10
13. Think about others in my family	1	2	3	4	5	6	7	8	9	10
14. Concentrate on getting through one contraction at a time	1	2	3	4	5	6	7	8	9	10
15. Focus on the person helping me in labor	1	2	3	4	5	6	7	8	9	10
16. Listen to encouragement from the person helping me	1	2	3	4	5	6	7	8	9	10

THANK YOU FOR YOUR PARTICIPATION!

分娩问卷调查表

问卷编号_____

您好！

为了了解您在妊娠过程中的健康状况及分娩情况，从而使医务工作者能够为您提供更针对性的服务，更好地保证您和孩子的健康，提高医疗服务质量。希望您能配合这次调研工作，**对于您提供的个人信息，我们不会透露给任何无关的人员和机构，对您的生活工作不会产生不良的影响**，请认真回答下面的问题，非常感谢您的合作与支持！请在相应的地方填空或适合的答案中打“✓”！

问卷包括四个部分（共97题）

第一部分：一般人口学资料以及产科资料（21题）

第二部分：分娩知识问卷（16题）

第三部分：专业分娩支持（13题）

第四部分：分娩恐惧问卷（15题）

第五部分：分娩自我效能量表（32题）

第一部分：一般情况及产科资料调查表

一般情况调查表：

说明：请在符合你情况处✔, 或在空白处写下您的答案

1. 生日 _____ (如：1990.1.1.)

2. 身高 _____ (厘米)

3. 孕前体重_____ / 现体重 _____ (千克)

4. 婚姻状态 □ 已婚 □ 未婚 □ 离异 □ 寡居

5. 现居住地 □ 城市 □ 城镇 □ 农村

6. 文化程度 □ 无 □ 小学
□ 初中 □ 高中、中专
□ 大专 □ 本科
□ 研究生及以上

7. 职业 □ 公务员及事业单位工作者 □ 医务工作者 □ 教师
□ 公司、企业职员 □ 个体经营者 □ 工人、农民
□ 军人 □ 无业

8. 宗教信仰 □ 有, _____ (佛教/基督教/天主教或其他)
□ 无

9. 家庭年收入 (¥)_____(元)

10. 医疗费用支付方式 □ 自费 □ 医疗保险(先自费后医疗报销, 选择此项)

11. 以往痛经史 □ 从未 □ 偶尔 □ 经常 □ 总是

12. 此次是否为意外怀孕 □ 是 □ 否

13. 是否接受过分娩培训课程或助产士门诊咨询？
□ 是, _____ （次数） □ 否

14. 是否有人陪伴分娩？他/她是你的_____
□ 丈夫 □ 母亲 □ 婆婆 □ 姐姐 □ 朋友 □ 其他_____

15. 怀孕次数 _____

16. 分娩次数 _____

17. 流产次数 _____

18. 孕周 _____

19. 现宫口扩张情况 _____ (cm)

20. 疼痛评分_____ （0-10分）

21. 产程中是否接受过干预手段, 如有, 请在选项中打“✓”

□ 是 _____ 水囊 / 催产素 / 人工破膜 / 分娩镇痛

□ 否

第二部分：分娩知识问卷调查

该问卷主要调查您对于分娩知识的了解程度。对于每个条目的叙述，请根据您的想法选择你认为正确、错误或者不确定的选项，并在该选项前加上✔号。

1. 一般情况下，顺产比剖宫产发生产后出血的概率更高。(B)

A. 对　　B. 错　　C. 不确定

2. 一般情况下，剖宫产比顺产更易发生感染。(A)

A. 对　　B. 错　　C. 不确定

3. 一般情况下，顺产的产妇比剖宫产的恢复更快。 (A)

A. 对　　B. 错　　C. 不确定

4. 一般情况下，剖宫产的婴儿呼吸道疾病发生率比顺产更低。 (B)

A. 对　　B. 错　　C. 不确定

5. 一般情况下，剖宫产比顺产的安全性更高。(A)

A. 对　　B. 错　　C. 不确定

6. 一般情况下，剖宫产的婴儿比顺产的抵抗力更好。 (B)

A. 对　　B. 错　　C. 不确定

7. 规律并且逐渐增强的阵痛感是进入产程的主要标志. (A)

A. 对　　B. 错　　C. 不确定

8.宫颈缩短、宫口扩张意味着产程有所进展。(A)

A. 对　　B. 错　　C. 不确定

9. “见红”是宫口开始扩张的信号。(A)

A. 对　　B. 错　　C. 不确定

10. 产妇的精神心理状态，如焦虑、恐惧会影响产程进展。 (B)

A. 对　　B. 错　　C. 不确定

11. 待产时，通过站立、走路、爬楼梯能帮助加速产程进展。(A)

A. 对　　B. 错　　C. 不确定

12. 产程中，产妇需要至少2-3小时去排尿一次。(A)

A. 对　　B. 错　　C. 不确定

13. 在宫缩时，产妇通过大声喊叫、用力可以促进宫口扩张。(B)

A. 对　　B. 错　　C. 不确定

14. 根据宫缩情况调整呼吸节奏对于减缓宫缩疼痛有帮助。(A)

A. 对　　B. 错　　C. 不确定

15. 产程过程中, 选择自己舒适的姿势能够帮助减轻宫缩疼痛。(A)

A. 对　　B. 错　　C. 不确定

16. 产程中, 可以通过按摩或热敷疼痛区域来减轻疼痛感觉。(A)

A. 对　　B. 错　　C. 不确定

第三部分：专业支持量表

填写说明：请根据下列项目回答自己在待产这段期间的对于医务人员给予你的支持程度的感觉,有五个程度可作选择,在您认为最合适的的感觉及看法选项框内打“✓”,题目没有所谓的正确答案,不要花费过多时间思考,您的第一直觉通常表达您的最初观感。

	非常不同意 1	不同意 2	不确定 3	同意 4	非常同意 5
1. 当我想要放弃时,医护人员能帮我找到持续下去的力量					
2. 医护人员能了解我的期望与需求					
3. 医护人员尽可能的让我保持舒适					
4. 医护人员鼓励我用新的方法来适应（例如：呼吸）					
5. 医护人员能了解我所承受的疼痛					
6. 医护人员鼓励我不要去对抗身体的反应					
7. 我觉得医护人员只是忙自己的事					
8. 我觉得医护人员只是为了自己方便工作					
9. 医护人员有给我时间问问题					
10. 医护人员会帮助我尝试不同的姿势					
11. 医护人员会应我的要求停止正在做的事情					
12. 医护人员不理会我所说的话					

第四部分：分娩态度问卷

以下条目关于你对于分娩的态度,有四个观点可作选择,在你认为最适合你此刻想法的框中打“✓”。各个条目没有正确错误之分, 不要花费过多时间思考, 您的第一直觉通常表达您的最初观感。

	非常不同意	不同意	同意	非常同意
1. 我害怕分娩时失去控制	1	2	3	4
2. 我真的害怕分娩过程	1	2	3	4
3. 我做过关于分娩的噩梦	1	2	3	4
4. 我害怕分娩过程中流血过多	1	2	3	4
5. 我害怕自己在分娩的过程中不知所措	1	2	3	4
6. 我害怕分娩过程中孩子会出现一些意外	1	2	3	4
7. 我害怕注射引起的疼痛	1	2	3	4
8. 我害怕独自面对分娩过程	1	2	3	4
9. 我害怕阴道分娩不顺利, 最后还得进行剖宫产	1	2	3	4
10. 我害怕孩子产出的过程造成产道的撕裂伤	1	2	3	4
11. 我害怕分娩过程中孩子受伤害	1	2	3	4
12. 我害怕子宫收缩引起的疼痛	1	2	3	4
13. 一想到即将来临的分娩, 我就很难放松下来	1	2	3	4
14. 我害怕医院的环境	1	2	3	4
15. 我害怕分娩过程中得不到我想要的照顾	1	2	3	4

分娩自我效能量表

1. 结果预期分量表

你是如何面对分娩过程的？

伴随着频繁宫缩的产程过程中, 就以下提供的方法, 选择并“✓”出它对于你的产程帮助程度。 ***“1”*** 表示***完全没有帮助***, ***“10”*** 表示***非常有帮助***。若你觉得越有帮助, 就请“✓”出越大的数字。

	完全没有帮助									**非常有帮助**
1. 放松自己的身体	1	2	3	4	5	6	7	8	9	10
2. 每次镇痛前做好准备	1	2	3	4	5	6	7	8	9	10
3. 镇痛时做呼吸运动	1	2	3	4	5	6	7	8	9	10
4. 保持自我控制	1	2	3	4	5	6	7	8	9	10
5. 想着放松	1	2	3	4	5	6	7	8	9	10
6. 集中精神于房间某物件上以分散注意力	1	2	3	4	5	6	7	8	9	10
7. 保持自我镇定	1	2	3	4	5	6	7	8	9	10
8. 集中思想于胎儿上	1	2	3	4	5	6	7	8	9	10
9. 每次镇痛都能保持控制能力	1	2	3	4	5	6	7	8	9	10
10. 作正面思想	1	2	3	4	5	6	7	8	9	10
11. 不要想着疼痛	1	2	3	4	5	6	7	8	9	10
12. 告诉自己我能做到	1	2	3	4	5	6	7	8	9	10
13. 想着家人	1	2	3	4	5	6	7	8	9	10
14. 集中精神度过每一次镇痛	1	2	3	4	5	6	7	8	9	10
15. 专注于帮助分娩的人员上	1	2	3	4	5	6	7	8	9	10
16. 聆听帮助者的鼓励	1	2	3	4	5	6	7	8	9	10

2. 效能预期分量表

伴随着频繁宫缩的产程过程中, 就以下提供的方法, 选择并“✓”出你在产程过程中, 能够使用此方法的肯定程度。 ***“1”*** 表示完全不肯定能使用, “10”表示非常肯定能使用。若你能使用下列方法的肯定性越高, 就请“✓”出越大的数字。

	完全不肯定									完全肯定
1. 放松自己的身体	1	2	3	4	5	6	7	8	9	10
2. 每次镇痛前做好准备	1	2	3	4	5	6	7	8	9	10
3. 镇痛时做呼吸运动	1	2	3	4	5	6	7	8	9	10
4. 保持自我控制	1	2	3	4	5	6	7	8	9	10
5. 想着放松	1	2	3	4	5	6	7	8	9	10
6. 集中精神于房间某物件上以分散注意力	1	2	3	4	5	6	7	8	9	10
7. 保持自我镇定	1	2	3	4	5	6	7	8	9	10
8. 集中思想于胎儿上	1	2	3	4	5	6	7	8	9	10
9. 每次镇痛都能保持控制能力	1	2	3	4	5	6	7	8	9	10
10. 作正面思想	1	2	3	4	5	6	7	8	9	10
11. 不要想着疼痛	1	2	3	4	5	6	7	8	9	10
12. 告诉自己我能做到	1	2	3	4	5	6	7	8	9	10
13. 想着家人	1	2	3	4	5	6	7	8	9	10
14. 集中精神度过每一次镇痛	1	2	3	4	5	6	7	8	9	10
15. 专注于帮助分娩的人员上	1	2	3	4	5	6	7	8	9	10
16. 聆听帮助者的鼓励	1	2	3	4	5	6	7	8	9	10

感谢您的参与！

BIOGRAPHY

NAME	Ms. Mao Li
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PRESENT ADDRESS	Nantang Five Group, Lucheng district, Wenzhou city, Zhejiang province, China
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