CHILDBIRTH EXPECTATIONS AND CHILDBIRTH EXPERIENCES

AMONG THAI PREGNANT WOMEN

By

Kamonthip Tanglakmankhong

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APPROVED:

Nancy A. Perrin, PhD, Dissertation Chair

Carol L. Howe, DNSc, CNM, FACNM, DPNAP, Committee Member

Cathy L. Emeis, PhD, CNM, Committee Member

Karen B. Eden, PhD, Committee Member

Michael R. Bleich, PhD, RN, MPH, FAAN, Dean, School of Nursing

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ABSTRACT

TITLE: Childbirth Expectations and Childbirth Experiences among Thai pregnant Women

AUTHOR: Kamonthip Tanglakmankhong

APPROVED:

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Nancy A. Perrin, PhD.

Purposes: To explore if women's expectations of childbirth in Thailand are being met and to examine the relative importance of self-efficacy for childbirth, fear of childbirth, and the match between expectations and experiences in predicting satisfaction with the childbirth experience**.**

Background: Since the 1980's Thailand has made a major shift from home births to hospital births. While this change has been accompanied by decrease in Thailand's maternal mortality ratio from 374.3 per 100,000 in 1962 to 9.8 in 2006 and its infant mortality ratio from 84.3 per 1,000 to 11.3, the childbirth experience has also been altered significantly. Satisfaction with labor and birth in Thai hospitals and its associated factors have not been fully explored. Prior studies have focused on positive/negative experiences; however, one important factor may be the match between what a woman expects and what actually happens during childbirth.

Methods: A longitudinal study of 195 pregnant women with a singleton fetus was conducted in Thailand. During their third trimester (32-42 weeks gestation) women were asked about their expectations for 36 possible events during labor and delivery, self-efficacy and fear of childbirth. Two days after giving birth, women were asked about their experiences with the 36 events during childbirth and their satisfaction with the process. Women's expectations and actual experiences were compared to determine

fulfilled expectations (percent of the items that they expected that actually happened), unmet expectations (percent of the items that they expected that did not happen), unexpected experiences (percent of items that they did not expect that actually happened), and null experiences (percent of items that they did not expect that did not happen).

Results: On average, 73% of the items women expected actually happened during childbirth (fulfilled expectations) while 27% of the items did not happen (unmet expectations). While, 38% of the items women did not expect actually happened during childbirth (unexpected experiences) and 62% of these items did not happen (null experiences). Nearly one-third of the women expected to, but did not get medication to reduce pain (37.6%) or have a relative by their side during labor (30.3%). Regression analysis found that the match between expectations and experiences accounted for 17.4% of the variance in satisfaction with the childbirth. Fulfilled expectations (β=.37, p<.001) was the strongest predictor of satisfaction followed by lower education (β=-.17, p=.007), higher self-efficacy (β=.17, p=.011), and attending childbirth class (β=.14, p=.026). Fear of childbirth was related to satisfaction (r=-.14, p<.05) but not after controlling for the match between expectations and experiences and self-efficacy.

Implications: Results suggest that aligning women's expectations about childbirth with the actual labor and delivery experience could improve women's satisfaction with the childbirth process. For Thai women, there are areas such as receiving pain medication and having a relative present during labor and delivery where unmet expectations are more common. This research could inform the development of interventions that help women meet the challenges of childbirth with realistic expectations and help the health system identify areas where women's expectations are not being met.

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CHAPTER 1

INTRODUCTION

In developing countries such as Thailand, hospital based maternity care is considered to be a major contributor in the reduction of maternal and neonatal deaths and disabilities. Maternity care is a part of Thailand's universal coverage program that is free of charge and available at all levels of the health care system (National Health Security Office, 2007). Thailand is one of the most successful countries in South East Asia in reducing its maternal mortality rate from 374.3 per 100,000 live births in 1962 to 9.8 in 2006, and its infant mortality rate from 84.3 per 1,000 live births in 1964 to 11.3 in 2006 (Wibulpolprasert, Sirilak, Ekachampaka, Wattanamano, & Taverat, 2008). Due to the increasing attention to reducing maternal and neonatal mortality in the past decade, governmental health authorities in Thailand recommended that all Thai women give birth in a hospital with a well-trained birth attendant. Statistics show a significant increase in deliveries by doctors, nurses, and midwives in Thailand from 64 percent in 1995 to 99 percent in 2005 (Sauvarin, 2006)

Thailand is now struggling with a high caesarean section rate. A national survey in Thailand reported that vaginal birth decreased every year while the caesarean section rate increased gradually from 15.2% in 1990 to a peak of 22.4% in 1996 (Piya Hanvoravongchai, Letiendumring, Teerawattananon, & Tangcharoensathien, 2000). Since the 1997 economic recession in Thailand, the caesarean section rate has remained stable at around 20% (Teerawattananon, Tangcharoensathien, Srirattana, & Tipayasoti, 2003). This rate exceeds the World Health Organization (WHO) recommended caesarean

section rate of no more than 5 -15 percent (Chalmers, Mangiaterra, & Porter, 2001). While rates lower than 5 percent indicate a lack of access to adequate medical care and facilities, rates higher than 15 percent indicate that too many unnecessary caesarean sections are being performed (Althabe & Belizin, 2006). These preventable caesarean sections bring a host of new problems. They increase postpartum risks of cardiac arrest, wound hematoma, hysterectomy, major puerperal infection, anesthetic complication, venous thromboembolism and hemorrhage requiring hysterectomy (Liu, et al., 2007). Also, compared with vaginal deliveries, women who have caesarean sections have higher risks of maternal and neonatal morbidity and mortality, longer stays in the hospital (Liu, et al., 2007; Villar, et al., 2006) and lower satisfaction with their birth experiences (Marut & Mercer, 1979; Waldenstrom., 1999).

Although hospital based maternity care has brought great improvements in developing countries, this progress can introduce additional problems. The experiences of giving birth in the hospital are very different from home birth; especially in the alignment of women's expectations and experiences with childbirth and psychosocial support. When women gave birth at home, they had support from their families helping them to be comfortable in labor and birth in the familiar environment of their own home. Conversely, most delivery units in public hospitals in Thailand do not allow family members to be present at the birth (Chunuan, Kala, & Kochapakdee, 2004). Women must cope with their birth experiences alone in an unfamiliar environment, undergoing various obstetric interventions in wards with several other women in labor. This situation, coupled with the fact that it is difficult to tell a woman exactly when spontaneous labor will occur, how long it will last, or what she will experience during its course, creates

uncertainty and raises doubts (Lowe., 1993, 2000). Although, Thailand has greatly reduced maternal and neonatal mortality and morbidity and women are having safe deliveries and healthy babies, it is still questionable whether Thai women are satisfied with their childbirth process during labor and birth in the hospital. Likewise, the factors associated with their satisfaction have not been determined.

Many studies have found that women will have a positive experience or feel satisfied with the childbirth experiences if their expectations are met during the actual childbirth event (Goodman, Mackey, & Tavakoli, 2004; Green, 1993). Unmet expectations will result in negative experiences (Soet, Brack, & Dilorio, 2003). Research about childbirth experiences cites expectations about childbirth as a major determining factor of maternal satisfaction with childbirth. Having expectations met has been found to improve satisfaction with birth experiences (Bryanton, Gagnon, Johnston, & Hatem, 2008; Christiaens & Bracke, 2007; Goodman, et al., 2004; Green, 1993; Slade, MacPherson, Hume, & Maresh, 1993).

Other factors that have been found to predict childbirth satisfaction are self-efficacy and fear (Christiaens & Bracke, 2007; Waldenstrom, Hildingsson, & Ryding, 2006). Lowe's studies indicate that doubts and uncertainties about giving birth decrease a woman's self-efficacy and increase her fear during labor and birth process (Lowe., 1993, 2000). Fear is one of the emotions that can negatively affect a person's belief in his/her ability to cope with threatening situations (Bandura, 1977). Indeed, research in United States has shown that women's higher self-efficacy in abilities to cope with childbirth is associated with lower fear of childbirth (Kish, 2003; Lowe., 2000). In addition to reducing perceived self-efficacy, the fear of child birth has other adverse affects on

childbirth. Fear has been recognized in several studies as a reason for the increase in the number of women requesting elective caesarean section (McCourt, et al., 2007b) in Canada (Bryanton, Gagnon, Johnston, et al., 2008), Finland (Melender, 2002a; Saisto & Halmesmaki, 2007), Hong Kong (Tsui, et al., 2006), Norway (Nerum, Halvorsen, Sorlie, & Oian, 2006), and Sweden (Waldenstrom, et al., 2006)

Gaps in Knowledge

Although expectations have been studied previously, the match between childbirth expectations and childbirth experiences has not been fully explored. Several studies have explored whether overall expectations of childbirth were met, but women in these studies were asked only during the postpartum period about their childbirth experiences (Christiaens & Bracke, 2007; Goodman, et al., 2004; Soet, et al., 2003). The results would be more accurate if measurement of childbirth expectations were assessed before birth and subsequently compared with actual experiences after birth. Although no research has examined the match between expectations and experiences in the area of childbirth, a study of social support for breast cancer (Reynolds & Perrin, 2004) demonstrated the importance of the match between the type of support women wanted and received. This match was found to improve psychosocial adjustment. The four different types of social support-- positive congruent support, support commission, support omission, and null support-- can fully capture the individual differences in desired and received support. It follows that the match and mismatch between what a woman expects to happen during childbirth and what she actually experiences may influence her satisfaction with the childbirth process. Therefore, assessing a woman's expectations and her actual childbirth experiences as well as her satisfaction with the

childbirth may help us better understand the role of expectations and experiences in satisfaction with childbirth.

While most research is focused on having expectations met or not met, it is also important to understand the role of an unexpected experience. The mismatch of expectations and experiences may indicate that women are not prepared appropriately for labor and birth. In addition, the relative importance of the match between expectations and experience, self-efficacy, and fear in predicting satisfaction with childbirth has not been explored.

Significance to Nursing

Since nurses play an important role in supporting women during labor and birth in the hospital, if nurses know what a woman values and expects about labor and birth, as well as understanding the role of self-efficacy and fear in satisfaction with childbirth, they could better prepare women appropriately for childbirth. To advance the nursing science of measuring the childbirth expectations and experiences, this study used a new measure to explore the details of the matches and mismatches between childbirth expectations and childbirth experiences and associated satisfaction based on the information from pregnant women.

There are a few published studies about childbirth experiences in Thailand, all of which use qualitative methods with small sample sizes (Liamputtong, 2004, 2005; Riewpaiboon, Chuengsatiansup, Gilson, & Tangcharoensathien, 2005).This study took a quantitative approach using a longitudinal prospective design from the third trimester of pregnancy through the postpartum period. The results of the study provided clear

evidence of the relationship between expectations and experiences as well as determined the most predictive factors for satisfaction with the childbirth experiences. Findings from the research will help the Thai health care providers to prepare women better for childbirth, possibly through education classes, and provide Thai health care officials with important information about how the childbirth process in Thai hospitals could be changed to improve women's satisfaction. It is hoped that this research will help Thai women meet the challenges of childbirth with realistic expectations and be more satisfied with their childbirth experiences.

Purpose of the Study

The purposes of this study were to explore whether matches and mismatches of a woman's expectations in the third trimester and her experiences during childbirth are predictive of satisfaction with the childbirth experience. In addition, the study sought to determine the ability of multiple factors – self-efficacy, fear, the match between expectation and experience about childbirth – to predict satisfaction in the childbirth experience and overall satisfaction of childbirth**.** The study addressed the following three specific aims.

Specific aim 1: to determine the degree to which women's expectations about childbirth during the third trimester actually happened during childbirth

Research question:

- How often does what a woman expects about her upcoming childbirth actually happen during childbirth?

- How often does what a woman expects about her upcoming childbirth **not** actually happen during childbirth?
- How often does what a woman **not** expect about her upcoming childbirth actually happen during childbirth?
- How often does what a woman **not** expect about her upcoming childbirth **not** actually happen during childbirth?

Specific aim 2: To determine if the match or mismatch between a woman's expectations and her experiences during childbirth predict satisfaction with the childbirth experience.

Hypothesis

- Fulfilled expectations (expected events that occurred during childbirth) are positively associated with the level of satisfaction with the childbirth experience.

Research question

- What is the relationship between unexpected experiences (unexpected events that occurred during childbirth) and the level of satisfaction with childbirth experiences?

Specific aim 3 : To examine the ability of multiple factors – the match between expectation and experience about childbirth, self-efficacy, and fear – to predict satisfaction with the childbirth experience and overall childbirth satisfaction**.**

Research question

- Are the fulfilled expectations and unexpected experiences more predictive of satisfaction with childbirth experiences than self-efficacy and fear?

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

This chapter provides background in seven areas important for this study. The first section will address maternity care in Thailand. The second and third sections will discuss literature related to childbirth expectations and childbirth experiences. Next, the fourth section will talk about the match between childbirth expectations and childbirth experiences. The fifth and sixth section will focus on childbirth self- efficacy and childbirth fear. The last section will be about the other factors which involve childbirth experiences.

1. Maternity Care in Thailand

In Thailand's public hospitals, funded by the country's universal health coverage, nurses or midwives provide antenatal care, spontaneous delivery, and postpartum care. Obstetricians, on the other hand, generally remain in charge of only high-risk pregnancies or complicated labor cases (National Health Security Office, 2007). Women may choose, however, to have their own private obstetricians for antenatal care in private clinics and then give birth in public hospitals. These women are required to pay an additional "*gratitude fee"* to the physicians who provide private care during pregnancy and delivery (Hanvoravongchai, Letiendumrong, Teerawattananon, & Tangcharoensathien, 2000).Usually, the women who have their own private physicians have more options or more control over their own care during labor and birth. For example, they may choose the place of birth, type of delivery, and method of pain relief. Some may even select the

date of their delivery if they choose a caesarean section. The ability of these particular women to influence their childbirth experiences may result in distinctly different experiences within the same hospital (Chunuan, Vanaleesin, Morkruengsai, & Thitimapong, 2007). This system leads to unequal access to resources, and causes the women who do not have their own private physicians to feel uncertainty about the quality of their care.

Due to the increasing attention on reducing maternal and neonatal mortality and the westernization of maternity care in Thai society, childbirth has become representative of the phenomenon of medicalization (Liamputtong, 2005; Liamputtong, Yimyam, Parisunyakul, Baosoung, & Sansiriphun, 2005; Whittaker, 1999). Childbirth is seen as a medical problem that can be best managed by medical professionals such as doctors or nurses in the hospital setting. Routine hospital procedures such as vaginal examinations every 2- 4 hours, electronic fetal monitors, confinement to bed, controlled pushing efforts, giving birth in the lithotomy position with legs strapped to metal stirrups and use of episiotomy are applied to all women. Some women receive intravenous fluids while oral food and fluids are withheld during active labor in order to assure that women are prepared for caesarean section if an emergency arises. All these procedures, often unnecessary, reinforce the role of women as patients.

One study about childbirth in a public hospital in Thailand found that women paid for private care as a means to achieve interpersonal trust with their physicians because they otherwise felt powerless and lacked confidence to voice their needs (Riewpaiboon, et al., 2005). Some women feel more assured about giving birth in the hospital by trying to choose a city hospital, accessing private care, and actively seeking medical technology,

especially caesarean section, as a way to have or exert control over the birth experience (Liamputtong, 2005; Riewpaiboon, et al., 2005; Whittaker, 1999). Not surprisingly, private practice by public obstetricians has been found to be a strong determinant of caesarean section rate in Thailand (Hanvoravongchai, et al., 2000; Hanvoravongchai., Letiendumring., Teerawattananon., & Tangcharoensathien., 2000).

A national survey about the pattern of hospital delivery in Thailand reported the caesarean section rate increased gradually from 14.8% in 1990 to 22.9% in 1996. After the economic recession in Thailand in 1997, the caesarean section rate remains stable around 20% (Teerawattananon, et al., 2003). However, the rate varies by region. In 1996, the rate in Bangkok, the capital of Thailand, was 29.02%, nearly twice that of Thailand's poorest Northeast region (15.41%) (Hanvoravongchai, et al., 2000). During the last 5 years, the caesarean section rate at Udonthani Hospital, one of the major public hospitals in Northeast region of Thailand, increased significantly from 29.30% in 2003 to 40.81% in 2008 (Udonthani Hospital Annual Report, 2009). Many studies confirm that unnecessary caesarean sections increase health care costs and lead to avoidable complications without improving birth outcomes (Althabe & Belizin, 2006; Liu, et al., 2007; Villar, et al., 2006). Since maternity care in Thailand is a part of the universal coverage program provided by government agencies, promoting natural childbirth in Thai women will help decrease health care costs and the likelihood risks of maternal and neonatal mortality and morbidity.

2. Childbirth Expectations

Maternity care in Thailand, including an increased rate of caesarean section, unequal access to the resources, and an unfamiliar environment in the hospital, raises questions about how women experience the labor and birth process. Research about childbirth experiences cites expectations about childbirth as a major determining factor of maternal satisfaction with childbirth. Having expectations met has been found to improve satisfaction with birth experiences (Bryanton, Gagnon, Johnston, et al., 2008; Christiaens & Bracke, 2007; Goodman, et al., 2004; Slade, et al., 1993).

Press (2002) indicates that expectations are an assumption about performance based on three main sources; 1) past clinical experiences of self and significant others, 2) logic informed by family, community, and cultural values, and 3) custom. Several theories, including the Health Belief Model (Rosenstock, Strecher, & Becker, 1988) and self efficacy theory (Bandura, 1977), have used the concept of expectation to improve understanding of health behavior. In both theories, the concept of expectation is based on the social cognitive theory of Bandura that tends to focus on expectations about one's own ability to perform the behavior needed to influence outcome (Rosenstock, et al., 1988). However, many previous studies have explored the aspects of childbirth expectations that relate to things outside personal control such as pain management, social support, type of birth, or medical intervention (Gibbins & Thomson, 2001; Green, 1993; Ip., Chien, & Chan, 2003). This study will explore both expectation about one's own ability to cope with childbirth (self-efficacy) and about expectations that are outside one's own ability to control the childbirth situation (childbirth expectations).

Several aspects of expectation may help women cope with labor and birth while others may cause fear and decrease their ability to cope (Fenwick, Hauck, Downie, & Butt, 2005; Stolte, 1987). As shown in a study conducted in Hong Kong, the more first time pregnant women have expectations of social support provided by significant others and nurses, the less they have expectations of their own ability to cope with pain (Ip., et al., 2003). Given that first time pregnant women have not had childbirth experiences, they are more likely to expect childbirth experiences based on all possible options.

The difference between expectation and preference

Studies have suggested that the terms "expectation" and "preference" should not be used synonymously. "Expectation" is cognitive and requires some degree of knowledge or previous experience to determine the realistic or practical outcome. "Preference" is motivational and more likely to be an aspiration, value, hope, wish or preferred outcome based on all possible options (Barron, et al., 2007; Hodnett., 2002). Therefore, preference may not be involved in the probable outcome because the most improbable outcome can still be hoped for (Barron, et al., 2007). Although the definitions of expectation and preference are not the same, some aspects of these terms are difficult to differentiate because each woman might have different experiences and information about the availability of maternity care. In fact, some studies of expectation ask about maternal preferences in childbirth (Green, 1993) or ask about patient expectations of their ideal doctor (Brown., Dunn, & Butow, 1997).

3. Childbirth Experiences

Most studies about childbirth experiences are descriptive. Many of them relate or compare expectations with childbirth experiences (Ayers & Pickering, 2005; Green, 1993; Lally., Murtagh, Macphail, & Thomson, 2008). Some analyze associations between multiple variables with satisfaction in childbirth experiences (Brown & Lumley, 1994; Goodman, et al., 2004). Others try to determine the factors that predict the childbirth experiences. (Bryanton, Gagnon, Johnston, et al., 2008; Dannenbring, Stevens, & House, 1997; Soet, et al., 2003; Waldenstrom., 1999). Factors relating to childbirth experiences vary across the studies because of the differences in personnel, policy, and social influences in each setting.

When childbirth experiences are considered in childbirth research, the focus tends to be on management of specific symptoms in labor and birth such as pain, (Capogna, et al., 1996; Green, 1993; Lally., et al., 2008) or fear (Alehagen, Wijma, & Wijma, 2006; Wijma, B.Wijma, & M.Zar, 1998; Wiklund, Edman, Ryding, & Andolf, 2008). Research has often examined whether women's expectations differ from or relate to their subsequent childbirth experiences (Ayers & Pickering, 2005; Gibbins & Thomson, 2001; Green, 1993; Hug, et al., 2008; Soet, et al., 2003; Waldenstrom., 1999). Although the aspects of expectations are different across the studies, the results are consistent in finding a relationship between childbirth expectations and childbirth experiences. Women with positive expectations tend to get what they expect. For example, a woman who expects high levels of control also tends to experience high levels of control during birth (Ayers & Pickering, 2005). On the other hand, if a woman expects the labor to be painful,

she does actually experience more pain in childbirth (Ayers & Pickering, 2005; Green, 1993).

Some retrospective studies use only one question during the postpartum period to determine whether or not women's expectations were met and related with childbirth experiences (Bryanton, Gagnon, Hatem, & Johnston, 2008; Christiaens & Bracke, 2007; Goodman, et al., 2004). As in other studies, the results indicated that having expectations met is positively related to satisfaction with childbirth experiences. However, this retrospective approach, asking women one overall question about whether their expectations were met, masks the detail of women's expectations during the childbirth process and provides an incomplete perspective, perhaps resulting in misleading conclusions.

Satisfaction with the childbirth experience

When previous research evaluates satisfaction or perception about childbirth experiences, concerns remain about the accuracy of the results. Women may be reluctant to criticize their health care providers, and having relief at a safe delivery and a healthy baby could cause them to rate their childbirth as positive or satisfying when asked to respond to questions on a rating scale. It is not clear whether women are able to differentiate between the childbirth process and childbirth outcome. Therefore, many studies that evaluate satisfaction with healthcare recommend both using caution with measurement and methodology and avoiding evaluation of overall satisfaction with a single measure (Bramadat & Driedger, 1993; Press, 2002; Redshaw, 2008). A review of issues and concepts of patient satisfaction from over 100 papers indicates that

expectations are the most important factor appearing repeatedly to relate to patient satisfaction (Sitzia & Wood, 1997). It appears that satisfaction can neither be separated from actual maternity care received, nor from the preexisting expectations (Hodnett., 2002; Slade, et al., 1993; Van Teijlingen, et al., 2003)

4. The match between Childbirth Expectations and Childbirth Experiences

Most research has focused on whether an expected event occurred and found that women tend to receive what they expect. If their expectations are positive, they are more likely to have positive childbirth experiences. Conversely, if their expectations are negative, they are more likely to have negative childbirth experiences. This is reflected in the existing instruments that measure expectations and experience in childbirth.

Measurement of childbirth expectations and childbirth experiences

The Expectation and Experience of Birth Scale: EEBS (Slade, et al., 1993)

The EEBS uses the correlation between expectations and experiences on each aspect of childbirth experiences in reporting the results. Ayers and Pickering (2005) applied the EEBS to measure emotions and control, support, appraisal and obstetric factors using a 10 cm visual analogue scale and examined the relationship between expectations and experiences on each aspect. The finding indicates that most aspects of expectation are correlated to experiences, although all of these correlations are low. Findings of Ayers and Pickering (2005) are consistent with the study of Slade et al (1993): a woman who expected positive emotions in labor is more likely to have positive emotions in childbirth. Likewise, a woman who expected negative emotions in labor is more likely to have negative emotions in childbirth.

The Wijma Delivery Expectancy/Experience Questionnaire: W-DEQ (Wijma, et al., 1998)

The W-DEQ has been developed to measure the construct of fear related to childbirth. The W-DEQ is measured 2 times, during pregnancy (W-DEQ version A) and after delivery (W-DEQ version B). The result is calculated based on the relationship between expectations and experiences. The W-DEQ has been used in many studies (Alehagen, et al., 2006; Christiaens & Bracke, 2007; Waldenstrom., 1999; Wiklund, et al., 2008). A study in Sweden examined the relationship between expectations and experiences using the W-DEQ in women with elective caesarean section and compared these with women who had emergency caesarean section or assisted vaginal delivery. The authors report that whether an expectation was positive or negative was associated with whether an experience was positive or negative for those with emergency caesarean section and assisted vaginal delivery. However for mothers with elective caesarean section, there was no significant relationship. The study also indicated that mothers requesting caesarean section had more negative expectations of vaginal delivery, while mothers who had emergency caesarean section and assisted vaginal delivery had more negative childbirth experiences (Wiklund, et al., 2008). In a United States study, the differences between a woman's expectation and her actual experiences using W-DEQ were compared. The finding reports that a woman whose experiences were more negative than her expectations are more likely to experience childbirth as traumatic (Soet, et al., 2003). The W-DEQ tends to measure expectation only in terms of fear or negative emotions.

The limitation of the measures of childbirth expectations and childbirth experiences

Several studies generally evaluate the fulfillment of expectations by asking only one overall question about the degree to which expectations are fulfilled or met after childbirth and using it to predict with childbirth experience (Bryanton, Gagnon, Johnston, et al., 2008) or childbirth satisfaction (Christiaens & Bracke, 2007; Goodman, et al., 2004). One study selected various aspects of expectations from the literature and asked women to rate their experiences in each aspect from "about like expected" to "not at all like expected". The results showed that only 27 percent of the women described their overall experience as "about like" expected, while a large number of women (73%) had experiences in labor and birth which differed from what they expected (Stolte, 1987). Possible recall bias is one limitation of Stolte's study as the women were asked to recall their expectations after labor occurred. Many studies exploring the match between expectations and experiences are descriptive and have been focused only on what types of expectations significantly relate to their experiences, or to having or not having an expected event occur. Little is known about the role of unexpected experiences when an unexpected event occurs during childbirth.

Some studies ask a single question about overall perception of birth experience to explain the relationship between expectations /experiences and satisfaction with childbirth. For example, Green's studies (1993) shows that women who expected to avoid pain medications are more likely to do so and were more satisfied with overall birth. However, assessing overall birth experience with only one question may provide misleading conclusions about childbirth experiences; when a woman is satisfied with the

overall childbirth experience, it does not mean that she is satisfied with all aspects of her childbirth process. Exploring the details of the childbirth process that women are not satisfied with may help us identify aspects that we need to pay more attention to in future studies or in prenatal childbirth classes.

Taxonomy of childbirth experiences

Due to the limitation of measures of childbirth expectations and experiences, this study created a new measure based on information from Thai pregnant women. The measure uses Reynolds and Perrin's taxonomy of social support (Reynolds & Perrin, 2004). The taxonomy includes four types of social support based on the match between support that is wanted and received. The four types of social support consist of positive congruent support (wanted and received), support omission (wanted but not received), support commission (not wanted but received) and null support (not wanted and not received). In the taxonomy, items can be either congruent or incongruent depending on what a woman wanted and received.

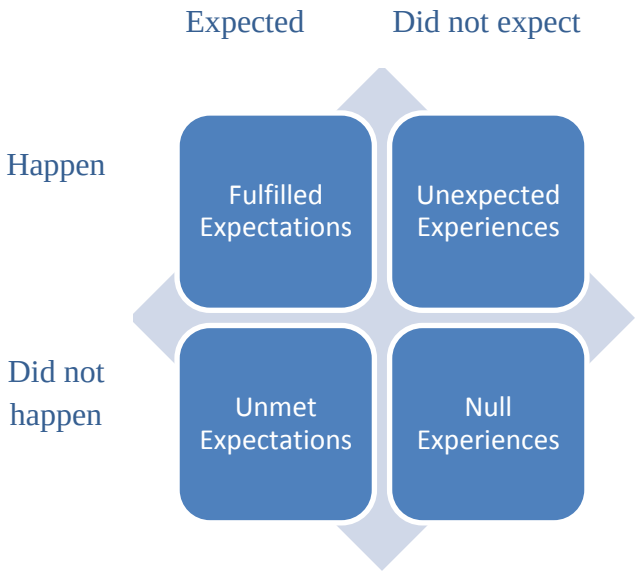
The Reynolds and Perrin's taxonomy of support has been applied in this study as taxonomy of childbirth experience to capture the match between childbirth expectations and childbirth experiences. This expands the measurement of expectations and experiences beyond previous studies which focus only positive/negative experiences or met /unmet expectations. The taxonomy of childbirth experiences is an interaction pattern incorporating both what a woman expected and what a woman experiences about childbirth. The measure used in this study allows four possibilities of the match between

expectations and experiences: fulfilled expectations, unmet expectations, unexpected experiences, and null experiences.

a. ***Fulfilled expectations*** occur when what a woman **expected** about her upcoming childbirth **actually happened** during childbirth
b. ***Unmet expectations*** occur when what a woman **expected** about her upcoming childbirth **did not actually happen** during childbirth.
c. ***Unexpected experiences*** occur when what a woman **did not expect** about her upcoming childbirth **actually happened** during childbirth.
d. ***Null experiences*** occur when what a woman **did not expect** about her upcoming childbirth **did not actually happen** during childbirth.

This taxonomy may help to understand more fully childbirth experiences among Thai pregnant women. A mismatch between expectation and experiences may mean that women are not prepared appropriately for labor and birth.

Figure 1*:* Taxonomy of childbirth experiences



Examining a woman's expectations promotes understanding of what a woman values and expects about childbirth. It also provides an important foundation for examining a woman's experiences based on her expectations (Redman & Lynn, 2005). The information about childbirth expectations should be more accurate if it comes from women's perspectives. In addition, assessing how satisfied women are with the match between their expectations and their actual childbirth experiences facilitate better understanding of the relationship between expectations and experiences. Some mismatches between expectations and experiences may lead to greater dissatisfaction than other types of mismatches. It is important to assess satisfaction with specific aspects of childbirth experiences because people may be satisfied with the birth outcome but dissatisfied with some aspect of childbirth process.

5. Childbirth Self-efficacy

Self-efficacy is a primary concept of social learning theory that has been defined as "people's judgments of their capacities to organize and execute courses of action required to attain designated types of performance" (Bandura., 1986, p. 391).The initial understanding of self-efficacy required the ability to distinguish between outcome expectation and self-efficacy expectation. According to Bandura (2000), people act on their beliefs about what they can do (efficacy expectation), as well as on their beliefs about the likely outcome of performance (outcome expectation). Bandura (1977) stated that efficacy expectation and outcome expectation are not the same because people can believe that a certain behavior will produce a desired outcome, but if they think that they cannot perform that behavior, such information may not influence their behavior.

The role of self-efficacy in childbirth is of interest worldwide. Lowe (1991) defined self-efficacy in childbirth as confidence in the ability to cope with labor and birth. A woman may develop her confidence from four sources: successful experience coping with childbirth (mastery experience), experiencing vicarious childbirth through films, books, informal discussion or observation (vicarious experience), confidence building discussion with a childbirth educator (verbal persuasion), and autonomic responses of fear when a woman thinks of labor (emotional arousal) (Bandura, 1977; Lowe., 1991).

Lowe (1993) developed the Childbirth Self-Efficacy inventory (CBSEI) to measure the ability of women to cope with labor and birth. The CBSEI is based on Bandura's self-efficacy theory and his measurement guideline. The instrument measures both outcome expectancies and self-efficacy expectancies for coping with a childbirth experience in the first and second stages of labor (Lowe., 1993). The CBSEI has been psychometrically tested in the United States. (Lowe, 1993, 2000) and replicated in other countries such as Australia (Drummond & Rickwood, 1997) and Northern Ireland (Sinclair & O'Boyle, 1999). It has been successfully translated into Chinese and found to be psychometrically sound (Ip, Chan, & Chien, 2005; Ip, Chung, & Tang, 2008). Multiple studies have supported the reliability and validity of the CBSEI. Since several studies found that self-efficacy is an important factor in predicting childbirth experiences (Soet, Brack, & Dilorio, 2003) and satisfaction in childbirth (Christiaens & Bracke, 2007), this study will examine the relationship between self-efficacy and satisfaction with childbirth experiences among Thai pregnant women.

The CBSEI has been translated into Thai, and content validity tested with seven experts and psychometrically tested with 148 healthy pregnant women who were in their

third trimester at antenatal clinic, Udonthani hospital, Thailand (Tanglakmankhong, Perrin, & Lowe, 2010). Cronbach's alpha ranged from .89 to .93 for the subscales of the CBSEI. The contrasting group and criterion-related validity were consistent with self-efficacy theory of Bandura and the findings of Lowe (1993; 2000). Self-efficacy expectancies for women with prior childbirth experiences were significantly higher than those who were pregnant for the first time for both active (p=.012) and second stage of labor (p=.015). Self-efficacy expectancies also had an inverse relationship with fear of childbirth (r=-0.22, p<.01). The non-significant paired t-test among subscales indicated that women responded to the items of the Thai CBSEI in the same manner across the stages of labor. However, within second stage labor, outcome expectancy was significantly higher than self-efficacy expectancy. Within active labor, outcome and self-efficacy expectancy did not differ. Therefore, it might be appropriate for Thai women to use the CBSEI only in the second stage where they can differentiate outcome and self-efficacy expectancy.

6. Childbirth Fear

Fear of childbirth may occur at several levels among pregnant women. If it is too high, it can negatively affect a woman's decision and perception about childbirth experiences (Waldenstrom, et al., 2006). Childbirth fear has been recognized in many studies as a reason for the increase in the number of women requesting elective caesarean section (McCourt, et al., 2007a; Melender, 2002a, 2002b; Saisto & Halmesmaki, 2007; Waldenstrom, et al., 2006). A study in Hong Kong found that fear of vaginal birth is the most important reason why women changed their preferred mode of delivery from vaginal birth to elective caesarean section after their first childbirth (Pang, et al., 2007).

In 2000, Lowe developed the Childbirth Attitude Questionnaire (CAQ) to measure fear in childbirth and to explore the theoretically predicted relationship between childbirth self-efficacy and fear in nulliparous women (Lowe, 2000). Fear is one of the major emotions that can affect perceived self-efficacy in coping with threatening situations (Bandura, 1977). The findings of Lowe's study were consistent with Bandura's self-efficacy theory, self-efficacy expectancies were inversely correlated with childbirth fears. Lowe (2000) and Kish (2003) have established the reliability of the CAQ.

The CAQ has been translated into Thai, tested for content validity with five experts, and psychometrically tested with 148 healthy pregnant women who were in their third trimester at antenatal clinic, Udonthani hospital, Thailand (Tanglakmankhong et al., 2010). The overall items in the Thai CAQ demonstrate very good internal consistency reliability as measured by Cronbach's coefficient alpha (alpha= 0.90), consistent with the previous study of Lowe in 2000 (alpha=0.83). Although factor analysis of CAQ was not provided by Lowe (2000) or any previous studies, an exploratory factor analysis was conducted to test the construct validity of CAQ. The single factor solution had good loadings for all items; therefore, it is appropriate to measure fear of childbirth with a single total score on the CAQ.

7. Other factors related to satisfaction with childbirth

Infant health

Infant health is one of the major fears of childbirth and has been found to be an important reason for preference in type of childbirth (Melender, 2002a). An unhealthy infant, as measured by an Apgar score of less than 7 and transfer to neonatal care, has

found to be related with low satisfaction with childbirth experience, while birth weight did not impact maternal satisfaction with birth (Waldenstrom, 1999). The Apgar score is determined by evaluating the newborn baby on five simple criteria (Appearance, Pulse, Grimace, Activity, and Respiration) on a scale of zero to two, then summing up the five values thus obtained. The Apgar score ranges from zero to 10. The 10-point Apgar score at 5 minutes has proved to be the most reliable measure to assess the condition and prognosis of neonatal death (Casey, McIntire, & Leveno, 2001)

Childbirth Characteristics

A review of the literature indicates four possible childbirth factors that may be predictive of childbirth satisfaction.

- **Mode of delivery**: Mode of delivery has been found to be the strongest predictor among the 20 predictors of women's perception of childbirth experience (Bryanton et al., 2008). Caesarean section, especially emergency caesarean section, has been shown to be related to negative experiences or dissatisfaction (Liu et al., 2007; Soet et al., 2003; Wiklund et al., 2008).
- **Parity:** Studies have found inconsistent results regarding the effect of parity on satisfaction with labor and delivery. While some studies found a positive relationship between multiparity and birth experience (Green et al., 1990), others found no relationship between parity and satisfaction (Dannenbring et al., 1997; Waldenstrom, Borg, Olsson, Skold, & Wall, 1996).
- **Birth attendants:** In Thailand, most of the childbearing women in the public hospital had never or had only briefly met their birth attendants before giving

birth. Lack of continuity of a caregiver throughout pregnancy and birth is one of the main reasons that some women giving birth in the public hospital have decided to pay for their own private obstetricians (Teerawattananon, Suntharasaj, et al., 2003). Interpersonal trust with health care providers is perceived as crucial for assuring good care in Thai society, especially for obstetric care (Riewpaiboon, et al., 2005). Therefore, birth attendants may influence Thai women's childbirth satisfaction.

- **Complications during labor:** Some previous studies found that unexpected medical problems during labor and birth, such as emergency operative delivery, induction, and augmentations, were related to women's dissatisfaction with childbirth experiences (Ryding, Wijma, & Wijma, 1998; Waldenstrom, Hildingsson, Rubertsson, & Radestad, 2004).

Demographics Characteristics

Although studies of childbirth satisfaction have found little or no relationship with demographic characteristics (Hodnett, 2002), the literature has related some maternal demographic characteristics with childbirth experiences; these include age, education, and taking a childbirth class.

- **Age**: The study about the relationship between of patients' sociodemographic characteristics to their satisfaction with medical care reported that greater age was significantly associated with greater satisfaction (Hall & Dornan, 1990)
- **Education:** Women with less education experience greater satisfaction in childbirth (Dannenbring, et al., 1997). This may be because women with

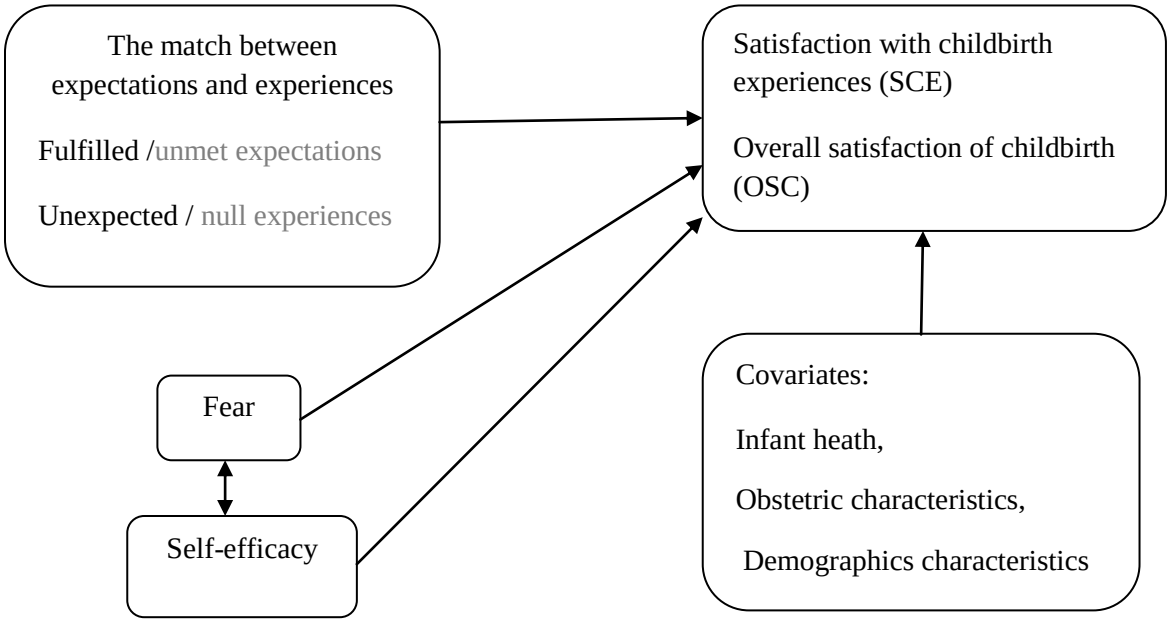
higher education are more likely to seek resources to prepare for childbirth that may lead to the development of unrealistic expectations that, in turn, lessen their satisfaction.

- **Taking a childbirth class**: Women who reported a less painful childbirth and had positive childbirth experiences were those who demonstrated greater knowledge of childbirth and higher confidence after childbirth class (Crowe & von Baeyer, 1989).

Conceptual Framework

In an effort to increase understanding about childbirth experiences in Thai women, a taxonomy of childbirth experiences will be assessed according to the match between what a woman expected and what actually happened during childbirth. This approach differs from prior studies that assessed experiences as positive or negative. Previous literature suggests that multiple factors are associated with satisfaction with childbirth. This study will determine the degree to which women's expectation about childbirth during third trimester are met during childbirth and examine the ability of multiple factors – self-efficacy (both outcome and self-efficacy expectancy), fear, fulfilled expectation and unexpected experiences to predict satisfaction with childbirth experiences and overall satisfaction of childbirth controlling for infant health, obstetric characteristics, and maternal demographics. Figure 2 presents the conceptual framework for this research.

Figure 2: The conceptual framework for this research.



Operational definitions

Satisfaction with childbirth experience means a woman's feelings or perceptions about what she did and did not experience during childbirth, given what she expected to occur during childbirth.

Overall satisfaction means a woman's global perception about the childbirth experience.

Fulfilled expectations are aspects that a woman expected in her upcoming childbirth that actually happened during childbirth

Unexpected experiences are aspects that a woman did not expect about her upcoming childbirth that actually happened during childbirth

Childbirth Self-efficacy means a woman's confidence in the ability to cope with labor

- **Outcome expectancy:** the belief that a specific behavior could help a women cope during childbirth

- **Self-efficacy expectancy:** the confidence a women feels in her ability to use the behavior to cope during childbirth

Childbirth fear means the fear that a woman has related to the upcoming labor and birth

Mode of delivery means type of delivery that a woman actually experiences which can be caesarean section or vaginal delivery.

Parity means the number of times a woman has given birth to a viable infant which can be nulliparous (never given birth before) or multiparous **(**given birth to one or more times).

Birth attendant means a nurse, midwife, or obstetrician who helps a woman giving birth.

Complications during labor means medical conditions that may occur with women and their babies during labor and birth such as fetal distress, prolonged labor, premature delivery, or preeclampsia.

CHAPTER 3

RESEARCH DESIGN AND METHODS

This chapter provides a comprehensive description of the research design and methods used in this study. The study design, setting, selection of sample, data collection, methods, ethical consideration and all procedure are included. Next, the validity, reliability, and scoring methods for all measures used in this study are described. In the last section, data management and data analysis are explained.

Research design

This study was conducted using a longitudinal prospective design. Data were collected from Thai women during their third trimester (32-40 weeks), and again in their postpartum period (1-2 days).

Setting

The setting was one antenatal clinic and three postpartum units at Udonthani Hospital, located in northeast Thailand during. The data were collected from January 2009 to May 2009.

Sample

A convenience sample was recruited. To qualify for this study, women had to meet the following criteria:

1. 18-45 years of age
2. pregnant with singleton fetus

3. in the third trimester of pregnancy (32-42 weeks)
4. literate and fluent in Thai
5. not at high risk for complications of the pregnancy
6. no previous caesarean section
7. able to participate at the third trimester and postpartum period

Sample size and statistical power PASS 2005 was used to determine the unique effects that can be detected in a multiple regression, assuming 14 independent variables in the model. To achieve a power of 0.80 and significance level (alpha) of 0.05, sample sizes needed to detect various R –Squared associated with the unique contribution of 1 independent variable in the model were estimated (Table 1).

Table 1: R –Squared for Independent variable (IV) at various sample sizes

Sample size	R-Squares for IV
150	.050
160	.047
170	.045
180	.042
190	.040
200	.038

A convenient sample of 200 pregnant women was recruited to allow for 0 -25 % attrition. Of the 200, five participants were not eligible. Four participants were unable to participate during their postpartum period and another woman failed to complete more than 20 % of the items in the Childbirth Expectation & Experiences Questionnaires. In

total, 195 participants' data were used for analysis. The final sample size of 195 participants was sufficient to detect moderate unique effects that account for at least 4 % of the variance in the outcome measure.

Ethical consideration

Permission to access the study site and ethical approval were obtained from the Institutional Review Board of OHSU and the clinical research ethics committees of Udonthani Hospital, Thailand. Nurses at the antenatal clinic were informed about this study and asked to give each pregnant woman an information sheet about the study when they arrived at the antenatal clinic. If the woman was interested in participating, she was referred to the researcher, who informed her about the purposes and possible benefits of the study, and also about the anonymity and confidentiality of the data.

As explained to the women, the possible benefits of the study are that the study will help researchers create appropriate childbirth classes in the future, aimed at helping women meet the challenges of childbirth. For the participants, there were minimal risks to participating in the study, though perhaps some of the questions may have made woman think more deeply about the childbirth process and develop expectations in area they had not considered previously. Women were encouraged to discuss any questions they had with the nurse or doctor. It was emphasized that willingness to participate, responses to the questionnaire or a decision to withdraw from the study at any time would not influence the quality of care they received. The data always remained anonymous.

Procedures

A woman who met the inclusion criteria was asked to meet with the investigator two times, at the antenatal clinic and postpartum units. At the first visit, women were

asked to sign the informed consent from participate in the study and to allow the investigator to access their birth-related medical records to collect date of birth, type of birth, parity, and infant health (APGAR, weight, and abnormality). The investigator explained to each woman that she was being asked to complete a questionnaire about her expectations, fears, and self-efficacy for childbirth, and that it should take about 20 minutes to complete the questionnaires at the antenatal clinic. The investigator also explained that the woman's data would remain confidential and her answers would not be shared with anyone. If the woman agreed to participate, she was asked to sign the consent form. Once she had signed the consent form, she was given the questionnaire and asked to complete the first set of questionnaires at the antenatal clinic after her appointment with the doctor. The identity of each woman was kept confidential and women were informed that no personal identifiers would be recorded on the questionnaires. Each woman was asked to leave her name and contact information for follow up by the investigator. The questionnaires were coded and the contact information kept separately protecting identities. All information was stored in a separate locked file cabinet in the delivery unit at Udonthani hospital.

The names of the women who completed the first set of questionnaire were checked at the labor room everyday to determine whether or not a woman had given birth and what postpartum units the woman had been transferred to. In addition, the phone number of the investigator had been given to each woman and the investigator asked them to notify the researcher when they had given birth in the hospital. Women generally stayed in postpartum units for 2-3 days. During the postpartum stay, the investigators asked each woman to complete a questionnaire about her experiences during childbirth.

Completed questionnaires were returned to the investigator in a sealed envelope. In return for the women's efforts to participate in this study, a baby gift set was given to each woman at the completion of the second set of questionnaires.

Measures

There were three main questionnaires used in this study. The first questionnaire was the Thai Childbirth Expectations & Experiences Questionnaires (TCEEQ) measuring the match between childbirth expectations and childbirth experiences (fulfilled/unmet expectations and unexpected/null experiences) and the two dependent variables (satisfaction with childbirth experiences and overall satisfaction with childbirth). The second questionnaire is the Thai Childbirth Self-Efficacy Inventory (TCBSEI) measuring outcome expectancy and self-efficacy expectancy. The third questionnaire is the Thai Childbirth Attitudes Questionnaire (TCAQ) measuring fear of childbirth. The validity, reliability, and scoring methods of the questionnaires are described as followed.

The Thai Childbirth Expectation & Experience Questionnaire (TCEEQ):

Childbirth expectation and experience was measured on a 36-item scale developed by the researcher. The initial 23 items were constructed using two sources: phrases taken from the literature review in qualitative studies about childbirth experiences in Thailand, and comments from three Thai nurses-midwife instructors and 148 pregnant women in Thailand compiled during January 2008. The content validity of this 23-item scale was examined with 11 raters who are working in the antenatal and delivery units in Udonthani hospital. The 11 raters consisted of seven nurse-midwives and four nurse-midwife instructors from the obstetric department in the college of nursing. The raters were asked

to determine if each item in the questionnaire was relevant. The raters answered yes or no for each item and wrote any comments in the space provided. Content validity indices (CVI) for each item were calculated as the proportion of the raters responding 'yes' to that item. Twenty-two items met the 80% criteria for item relevance. One item was modified and 13 items were added based on comments from expert reviewers.

The 36- item TCEEQ asked about the possible events that women think will happen during their labor and birth. The women were asked "do you think this situation will happen during your upcoming childbirth?" and answered "yes" or "no" to each question. This was completed during the third trimester. After giving birth, women were asked to complete the second part of the questionnaire, which used the same set of items. Here the women were asked "did this situation happen during labor and birth?" and responded "yes" or "no". Each item was classified as fulfilled expectation, unmet expectation, unexpected experience and null experience based on their responses to the statements of expectation before birth and experience after birth.

Satisfaction with Childbirth Experiences (SCE) was also captured during postpartum; women were asked for each of the 36 items: "how did you feel about what happened?" A 4-point response scale is used: 1 = *not satisfied,* 2= *low satisfied,* 3= *moderately satisfied,* 4= *very satisfied*. The average satisfaction across 36 items was calculated as the measure of satisfaction with childbirth experiences. Cronbach's alpha for the SCE was 0.94.

One additional question, to measure Overall Satisfaction with Childbirth (OSC) was included*:* "overall, I would rate my satisfaction in childbirth as?" using the same 4 points response scale as SCE.

The Thai Childbirth Self-Efficacy Inventory (TCBSEI) was a 32- item scale modified from Lowe (1993). The CBSEI measured both outcome expectancy (the belief that a specific behavior could help women cope during childbirth) and self-efficacy expectancy (the confidence women feel in their ability to use a behavior to cope during childbirth). The original CBSEI was a 62- item questionnaire divided into four subscales. The same set of 15 items was used for each of the four subscales. The first two subscales are Outcome and Self-efficacy expectancy for Active Labor (Outcome AL and Efficacy AL) which have 15 items each. The other two subscales were Outcome and Self-efficacy expectancy for Second Stage of labor (Outcome SS and Efficacy SS) which hae 16 items each. One item, "focus on the person helping me in labor", was added to each subscale in Outcome SS and Efficacy SS.

The CBSEI had been translated to Thai. The Thai CBSEI has been tested for content validity with seven experts and psychometrically tested with 148 Thai pregnant women (Tanglakmankhong, Perrin, & Lowe, 2010). The results suggested using only the Outcome SS and Efficacy SS subscale of the Thai CBSEI. Therefore, the Thai CBSEI had 32 items divided into two subscales. Outcome expectancy and self-efficacy expectancy had the same set of 16 items. Scale scores were the sum of the response to each item from 1 (not at all helpful or not at all sure) to 10 (very helpful or completely sure). In this sample, the reliability of Thai CBSEI for outcome expectancy was 0.93 and self-efficacy expectancy was 0.93.

The Thai Childbirth Attitudes Questionnaire (TCAQ) was a 15- item scale modified from the CAQ developed by Lowe (2000). The original CAQ was a 16-item questionnaire with a response scale of 1-4 from no anxiety to high anxiety. The internal consistency reliability was 0.83. The CAQ had been translated to Thai. The content validity of the Thai CAQ had been tested with five experts and psychometrically tested with 148 Thai pregnant women (Tanglakmankhong, et al., 2010). Feedback from participants called appropriateness of item three "I have a nightmare about delivery" into question for the Thai culture. Participants did not feel that the item matched the response format of no anxiety to high anxiety. This item also had the lowest factor loading among the 16 items in the previous psychometric study, which supports the decision to remove this item from Thai CAQ scale. In this sample, the internal consistency of Thai CAQ was 0.90.

Covariate measures

There were nine covariates in the study including Apgar score, birth weight, mode of delivery, parity, type of birth attendant, complications during labor, attending a childbirth class, maternal age, and education.

Demographic characteristics were asked about by open ended questions during the third trimester and included age, education and whether or not a woman attended childbirth class.

Obstetric characteristics and infant health were collected from medical records at labor and birth units. The information from medical records included:

- APGAR score at 5 minutes (score $\leq$ or > 7),

- Birth Weight (weight ≤ or > 2500 grams),
- Mode of delivery (caesarean section, vaginal delivery)
- Parity (nulliparous, multiparous)
- Birth attendants (Obstetrician, Nurse)
- Complications during labor (yes, no)

Data Management

Data were entered to the Statistical Package for the Social Science program version 16. Data entry was verified with double entry. The data were screened using frequency distribution and descriptive statistics for all the items. Continuous variables were examined for outliers and normality.

Data Analysis

Frequencies, means, and standard deviations were used to describe the demographic characteristics of the participants.

Specific Aim 1 was to determine the degree to which women's expectations about childbirth during the third trimester are met during childbirth, the percentage of fulfilled expectations, unmet expectations, unexpected experiences, and null experiences were computed by these following steps.

Step 1:

- Across the items, count the number of "yes" responses to the expected question as measured at time 1. This is the number of items expected (TY)

- Across the items, count the number of "no" responses to the expected question as measured at time 1. This is the number of items not expected (TN)

Step 2

- Percent of Expected and Happened (Fulfilled expectation) : count the number of items that each individual answered "yes" to both expected (time 1) and happened question (time 2), divide this number by TY and multiply by 100

  PFulfilled= (count Expected =yes & happened =yes)/TY*100

- Percent of Expected and Not Happened (Unmet expectation) : count the number of items that each individual answered "yes" to expected question (time 1) and "no" in happened question (time 2), divide this number by TY and multiply by 100

  PUnmet= (count Expected =yes & happened =no)/TY*100

- Percent of Not Expected but Happened (Unexpected experience) : count the number of items that each individual answered "no" expected question (time 1) and "yes" in happened question (time 2), divide this number by TN and multiply by 100

  PUnexpected = (count Expected = no & happened = yes) /TN*100

- Percent of Not Expected and Not Happened (Null experience) : count the number of items that individual answered "no" to both expected (time 1) and happened (time 2) question, divide this number by TN and multiply by 100

PNullExper= (count Expected =no & happened =no) /TN*100

The average and standard deviation of percent fulfilled expectations, percent unmet expectations, percent unexpected experiences, and percent null experiences across all women were summarized. The percentage of fulfilled expectations and percentage of unmet expectations sum to 100 because they were both percentages of the number of items a woman expects. Similarly, the percentage of unexpected experiences and the percentage of null experience were both a percentage of the number of items that a woman did not expect. These pairs could not be included simultaneously in a regression as singularity results. The following analyses included the measures of what actually happened (percentage of fulfilled expectation and percentage of unexpected experience). The regression of percentage of null experience and percentage of unmet expectation would yield the same results because the percentage of null experience was a function of percentage of unexpected experience while percentage of unmet expectation was a function of percentage of fulfilled expectation**.**

Specific Aims 2 and 3 were to determine if the match and mismatch between a woman's expectations and her experience during childbirth predict satisfaction with childbirth experience and to examine the ability of multiple factors -- self-efficacy, fear, the match between expectation and experience about childbirth to predict satisfaction in childbirth experience (SCE) and overall satisfaction of childbirth (OSC) controlling for infant health, obstetric characteristics, and maternal demographics.

Hierarchical regression was used to simultaneously analysis for specific aims 2 and 3. The order that variables were entered into the model was determined by the research questions and finding from previous studies. Bivariate correlations were

examined among the variables to assess multicolinearity and determined which covariates to include in the hierarchical regression. Both SCE and OSC were used as dependent variables. Five independent variables and nine covariates that were significantly related to the dependent variables were considered for inclusion in the model. The planned analyses called for fulfilled expectations and unexpected experiences to be entered in the first step of the hierarchical regression to test Specific Aim 2. In the second step outcome expectancy, self-efficacy expectancy, and fear were to be added to the model to determine fulfilled expectations and unexpected experiences remain significant after controlling for outcome expectancy, self-efficacy expectancy, and fear. In the third step, covariates with significant bivariate correlations with the outcome variables were to be added to the model to test Specific Aim 3.

CHAPTER 4

RESULTS

Two hundred participants were enrolled from a prenatal clinic at Udonthani hospital, Thailand. Of these, four women were unable to participate during the postpartum period and one woman failed to complete more than 20% of the items in the Childbirth Expectation & Experiences Questionnaires and so was excluded from analyses. The final sample size for analyses was 195. For all analyzes, $p<0.05$ was considered statistically significant.

Demographics

The average age of participants was 25 years (range 18-42) with only 7.7 % of the sample over the age of 35. Most participants had an elementary education and at least some high school education (87.7%). Only 5.6% had received a bachelor's degree or higher. The education attainment of these participants was fairly similar to that of the national educational attainment data with the vast majority of the Thai population (80.1%) having completed an elementary or high school education (The Office of the Education Council, 2009). Nearly half of the participants were pregnant for the first time (51.8%), and did not attend a childbirth class (53.3%) prior to giving birth (Table 2).

Obstetrics Information

The majority of participants was delivered by nurses (78.5%), had a vaginal delivery (79%) and had no complications during labor (65.6%). The common treatments during labor and delivery were fetal monitoring (91.8%) and episiotomy (70.8%). Very few women received pain medication (1%) or anesthetic before an episiotomy (0.5%)

(Table 2). Most of the infants were healthy (92.8%), of normal weight (90.3%), and 100% had a 5 minute Apgar score of more than 7 (Table 3). Medical conditions, including premature birth and jaundice, were reported for around 7% of the infants, all of whom had to be admitted to the neonatal intensive care unit (NICU) after their birth.

Table 2

Demographic characteristics of sample

Demographic data (N=195)	N	%
Age		
- 18-34	180	92.3
- 35-42	15	7.7
The average age is 25.51 years (SD=6.03)		
Education		
- Primary	54	27.7
- Secondary	117	60.0
- College	13	6.7
- Bachelor degree	10	5.1
- Higher than bachelor degree	1	0.5
Parity		
- Nulliparous	101	51.8
- Multiparous	94	48.2
Childbirth Class		
- Yes	91	46.7
- No	104	53.3

Table 3

Obstetric characteristics

Variables (N=195)	N	%
Delivery by		
- Obstetrician	42	21.5
- Nurse	153	78.5
Type of Birth		
- C- Section	41	21.0
- Vaginal Delivery	154	79.0
Complication during labor		
- Yes	67	34.4
- No	128	65.6
Treatments during labor and delivery		
- Pain medication	2	1.0
- Induced labor medication	53	27.2
- Intravenous fluid	114	58.5
- Episiotomy	138	70.8
- Anesthetic before Episiotomy	1	0.5
- Fetal Monitor	179	91.8

Table 4

Infant health status

Variables (N=195)	N	%
Baby Gender		
- Boy	98	50.3
- Girl	97	49.7
Birth weight		
- Low birth weight (less than 2500 grams)	19	9.7
- Normal weight	176	90.3
APGAR score at 5 minute		
- 8 score	3	1.5
- 9 score	13	6.7
- 10 score	179	91.8
Referred to NICU	14	7.2

Result for Specific Aim 1

Specific aim 1: Determine the degree to which women's expectations about childbirth during the third trimester were met during childbirth

Research question:

1. How often does what a woman expects about her upcoming childbirth actually happen during childbirth?
2. How often does what a woman expects about her upcoming childbirth **not** actually happen during childbirth?
3. How often does what a woman **not** expect about her upcoming childbirth actually happen during childbirth?
4. How often does what a woman **not** expect about her upcoming childbirth **not** actually happen during childbirth?

Of the 36 childbirth expectation items, women expected approximately 28 of the items to happen (*M*=28.10, *SD*=3.35, range 13-35) and 8 items not to happen (*M*= 7.88, *SD*=3.35, range 1-23) during childbirth. On average 73% of the items that each woman expected to happen did happen (fulfilled expectations), whereas 27% of these items did not happen (Unmet expectations). These two percentages sum to 100% as they are both percentages of the number of items a woman expected to happen. Of the items each woman did not expect to happen, 38% of the items actually did happen (Unexpected experiences) and 62 % of these items did not happen (Null experiences). Table 5 shows the average percent and standard deviation of the four types of matches/mismatches in expectations and experiences about childbirth.

Table 5

The average percent and standard deviation for the four measures of match/mismatch between a woman's expectations and experiences in childbirth

	Happened During Childbirth	
	Yes	No
Woman Expected to Happen	Fulfilled Expectations M= 72.95%, SD = 10.48	Unmet Expectations M= 27.05 %, SD = 10.53
Woman Did Not Expect to Happen	Unexpected Experiences M= 37.75%, SD = 19.96	Null Experiences M= 62.25%, SD = 19.93

Since the items that make up the four types of matches/mismatches can vary across women, the individuals items were explored to examine if some items are more commonly expected and/or experienced, and if some items are more commonly associated with a match or mismatch between expectations and experiences. When comparing women's responses to the questionnaire at the item level (see Table 6), it is evident that of the items that **95%** of women **expected to happen,** most were related to the safety of women and their babies during labor and birth, and supportive care from nurses. These items included being supportive, speaking politely, happy to help, informing them immediately if something is wrong, taking good care of her baby after birth, treating her family politely, checking cervical dilation, coaching during labor and contacting the doctors for them. They also expected the doctor to be ready to help at any time. The least expected items (**50- 70%** of women **did not expect** them to happen) were related to nurses being too busy, having a private delivery room, having pain

medication, having medication to induce labor, and having husband or relative by her side.

During delivery, the items that **more than 95%** of women **experienced** were related to the safety of women and their babies during labor and birth, and supportive care from nurses such as being happy to help, taking very good care of her baby after birth, checking vaginal cervix dilation, speaking to her politely. The items that **more than 75 %** of women **did not experience** during delivery were receiving the pain medication, having her delivery assisted with forceps or vacuum instruments, having husband and family by her side during labor and birth, as well as having her husband and family hold the baby after birth.

When **looking at the match between expectations and experiences** at the item level (see Table 7), the items that **more than 95%** of women expected to happen and that did happen (**fulfilled expectations**) were related the safety of women and their babies during labor and birth, having the nurses happy to help and taking very good care of her baby after birth. The items that **around 40-60%** of women expected but did not happen (**unmet expectations**) were related to the way in which the baby was delivered including having an operation if they had any complication, having the delivery assisted with forceps or vacuum instruments, and being delivered by a doctor.

The items that 25% or more of women did not expect but it did happen (**unexpected experiences**) were being delivered by a nurse, having food and fluid withheld during labor and birth, and having intravenous fluid. The items that 40-60% of women did not expect and they did not happen (**null experiences**) were receiving pain

medication, nurses being busy, having private delivery room, having husband and relative by her side, and receiving medication to induce labor.

Table 6

Percent of women who expected and experienced each item

	% expected	% experienced	% not expected	% not experienced
1. I got medication to reduce pain.	38.7	3.6	61.3	96.4
2. I got medication to induce labor.	40.5	24.6	59.5	75.4
3. I had special instruments for checking my baby's health.	87.6	91.2	12.8	8.8
4. I had a vaginal examination for checking cervix dilatation.	96.4	96.9	3.6	3.1
5. I had intravenous fluids.	56.4	62.0	43.6	38.0
6. I had food and fluids withheld during labor and birth.	59.0	67.7	41.0	32.3
7. I had other laboring women stay in the same room during labor	92.3	94.3	7.7	5.1
8. I had a relative by my side during labor.	47.7	21.1	52.3	74.9
9. I had my husband by my side during labor.	45.6	22.6	54.4	77.4
10. I was able to contact my family during labor.	76.4	71.3	23.6	28.7
11. I got supportive care from nurses during labor.	98.5	96.4	1.5	3.6
12. I received information from nurses about methods of pain relief.	90.7	76.9	9.2	23.1
13. I received information from nurses about my progress of labor.	94.4	92.8	5.6	7.2
14. I had my legs strapped on metal stirrups during delivery.	75.9	78.5	24.1	21.5
15. I was in a private delivery room during delivery.	31.8	7.7	68.2	92.3
16. I had a nurse coaching during delivery.	96.4	69.2	3.6	30.8
17. I was delivered by a nurse.	57.4	47.7	42.6	52.3
18. I was delivered by a doctor.	83.1	86.7	16.9	13.3

Table 6 (cont)

Percent of women who expected and experienced each item

	% expected	% experienced	% not expected	% not experienced
19. I was informed immediately when something is wrong with me or my baby	97.9	86.7	2.1	13.3
20. I was involved in decision making about my care and treatments during the delivery process.	94.4	70.6	5.6	29.4
21. I was assisted with forceps or vacuum instruments when I could no longer push.	66.7	13.8	33.3	86.2
22. I had an operation to deliver my baby if I had any complications.	91.2	31.4	8.8	68.6
23. I had an episiotomy	79.5	65.6	20.5	34.4
24. I had anesthetic medication before the episiotomy	64.1	35.4	35.9	64.6
25. Doctor was ready to help at anytime if something was wrong with me during delivery.	97.9	81.5	2.1	18.5
26. Student nurses took care of me during my labor and birth.	74.8	59.5	25.2	40.5
27. Nurses spoke to me politely.	98.5	96.4	1.5	3.6
28. Nurses treated my family politely.	96.9	92.3	3.1	7.7
29. Nurses helped me talk with the doctor.	92.3	75.4	7.7	24.6
30. Nurses contacted the doctors for me if I wanted to consult the doctors.	95.4	64.1	4.6	35.9
31. Nurses were happy to help me	97.9	99.5	2.1	0.5
32. Nurses were busy and may not have time to take care of me	30.8	31.8	69.2	68.2
33. Nurses brought my baby to me immediately after birth	85.1	81.0	14.9	18.9
34. Nurses took very good care of my baby after birth	97.9	98.5	2.1	1.5
35. My baby and I were safe during labor and birth	99.5	99.5	0.5	0.5
36. My husband and my family had a chance to hold my baby after birth	81.0	22.5	19.0	77.5

Table 7

Percent of women experiencing a match or mismatch between expectation and experience during childbirth for each item and average satisfaction with each item

Item	% Fulfilled	% Unmet	% Unexpected	% Null	satisfaction *M*	satisfaction *SD*
1. I got medication to reduce pain.	1.0	**37.6**	2.6	**58.8**	**2.90**	**.93**
2. I got medication to induce labor.	9.7	30.8	14.9	44.6	3.21	.87
3. I had special instruments for checking my baby's health.	81.4	6.2	9.8	2.6	3.74	.54
4. I had a vaginal examination for checking cervix dilatation.	93.3	3.1	3.6	0	3.58	.61
5. I had intravenous fluids.	36.9	19.5	**25.1**	18.5	3.48	.64
6. I had food and fluids withheld during labor and birth.	41.0	17.9	**26.7**	14.4	3.24	.77
7. I had other laboring women stay in the same room during labor	87.7	4.6	7.2	0.5	3.44	.66
8. I had a relative by my side during labor.	17.4	**30.3**	7.7	**44.6**	**2.86**	**.90**
9. I had my husband by my side during labor.	14.9	**30.8**	7.7	**46.7**	**2.76**	**.95**
10. I was able to contact my family during labor.	56.9	19.5	14.4	9.2	3.22	.80
11. I got supportive care from nurses during labor.	94.9	3.6	1.5	0	3.50	.68
12. I received information from nurses about methods of pain relief.	71.3	19.5	5.6	3.6	3.22	.85
13. I received information from nurses about my progress of labor.	88.2	6.2	4.6	1	3.52	.62
14. I had my legs strapped on metal stirrups during delivery.	60.0	15.9	18.5	5.6	3.35	.72
15. I was in a private delivery room during delivery.	9.7	22.1	13.3	54.9	3.17	.71
16. I had a nurse coaching during delivery.	89.2	7.2	3.1	0.5	3.51	.70
17. I was delivered by a nurse.	41.5	16	**27.7**	14.9	3.49	.63
18. I was delivered by a doctor.	42.6	40.5	5.1	11.8	3.30	.81

Table 7 (cont)

Percent of women experiencing a match or mismatch between expectation and experience during childbirth for each item and average satisfaction with each item

Item	% Fulfilled	% Unmet	% Unexpected	% Null	Satisfaction *M*	*SD*
19. I was informed immediately when something is wrong with me or my baby	85.2	12.8	1.5	0.5	3.52	.68
20. I was involved in decision making about my care and treatments during the delivery process.	66.0	28.4	4.6	1.0	3.27	.76
21. I was assisted with forceps or vacuum instruments when I could no longer push.	9.2	57.4	4.6	28.8	3.44	.69
22. I had an operation to deliver my baby if I had any complications.	29.4	**61.9**	2.0	6.7	3.55	.67
23. I had an episiotomy	54.4	25.1	11.3	9.2	3.43	.67
24. I had anesthetic medication before the episiotomy	26.1	38.0	9.2	26.7	3.38	.76
25. Doctor was ready to help at anytime if something was wrong with me during delivery.	79.5	18.5	2.0	0	3.54	.72
26. Student nurses took care of me during my labor and birth.	47.7	27.2	11.8	13.3	3.41	.69
27. Nurses spoke to me politely.	94.9	3.6	1.5	0	3.56	.62
28. Nurses treated my family politely.	90.3	6.7	2.0	1.0	3.50	.68
29. Nurses helped me talk with the doctor.	70.8	21.5	4.6	3.1	3.32	.68
30. Nurses contacted the doctors for me if I wanted to consult the doctors.	61.0	34.4	3.1	1.5	3.23	.74
31. Nurses were happy to help me	97.4	0.5	2.1	0	3.54	.64
32. Nurses were busy and may not have time to take care of me	13.8	16.9	17.9	51.3	3.16	.78
33. Nurses brought my baby to me immediately after birth	68.7	16.4	12.3	2.6	3.62	.68
34. Nurses took very good care of my baby after birth	96.9	1.0	1.5	0.5	3.64	.57
35. My baby and I were safe during labor and birth	**99.5**	0	0	0.5	3.92	.29
36. My husband and my family had a chance to hold my baby after birth	21.0	60	1.5	17.4	3.06	.84

Result for Specific Aim 2 and Aim 3

Specific aim 2 and 3: To determine if the match or mismatch between a woman's expectations and her experiences during childbirth predict satisfaction with the childbirth experience and to examine the ability of self-efficacy, fear, the match between expectation and experience about childbirth controlling for demographic, obstetric characteristics and infant heath to predict satisfaction in childbirth experience**.**

Both average satisfaction with childbirth experiences (SCE) across all items and the single item overall satisfaction with childbirth (OSC) were used as dependent variables. Five independent variables (fulfilled expectations, unexpected experiences, outcome expectancies, self-efficacy expectancies, childbirth fear) and nine covariate variables (birth weight, APGAR, birth attendants, complication, during labor, mode of delivery, parity, childbirth class, age and education) were considered for inclusion in the model. Table 8 displays the means, standard deviations and ranges for the two dependent variables and five independent variables.

Table 8

Means, standard deviations, and range of the dependent and independent variables

Variables	***M***	***SD***	**Observed Range (min-max)**	**Possible Range (min-max)**
1. Satisfaction with Childbirth Experience (SCE)	3.38	.40	1.78-4.00	1.00-4.00
2. Overall Satisfaction with childbirth (OSC)	3.52	.53	2.00-4.00	1.00-4.00
3. Fulfilled expectations	72.95	10.48	38.46-96.43	0.00-100.00
4. Unexpected experiences	37.75	19.96	0.00-100.00	0.00-100.00
5. Outcome expectancies	6.25	1.49	3.62-9.88	1.00-10.00
6. Self-efficacy expectancies	6.77	1.69	2.38-10.00	1.00-10.00
7. Fear	2.40	.59	1.00-4.00	1.00-4.00

Bivariate correlations were examined among the variables to assess multicolinearity and determined which variables to include in the hierarchical regressions. Self-efficacy expectancy and outcome expectancy were highly correlated (r=.72, p<.001). If both variables are included in the regression model, the model maybe unstable. Since only self-efficacy expectancy was significantly correlated with SCE and OSC, it was selected to be included in the model and outcome expectancy was not included in the model. Birth attendant, mode of delivery, and complications were also highly correlated with each other. However, none of them were significantly correlated with SCE or OSC and so they were not included in the regression models. Only the

covariates with significant correlations with SCE or OSC were included in the regression model.

There were 5 variables that were significantly correlated with SCE. These included fulfilled expectations, self-efficacy, and taking a childbirth class which were significantly positively associated with SCE and fear of childbirth and education which were negatively associated with SCE. For OSC, only fulfilled expectations and attending a childbirth class were correlated with overall satisfaction. Please see Table 9 for bivariate correlations among the study variables.

Table 9: *Bivariate correlations of study variables*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.Childbirth satisfaction															
2. Fulfilled expectations	.40***														
3. Unexpected experiences	-.09	.03													
4.Outcome Expectancy	.08	.01	.12												
5.Self-efficacy Expectancy	.21**	.09	.00	.72***											
6.Childbirth fear	-.14*	-.12	.17*	-.02	-.18*										
7. Birth weight	-.04	.03	.02	.08	.10	-.05									
8.APGAR	-.00	-.07	-.14*	.02	.02	-.10	.01								
9.Delivery by	-.05	.00	-.07	-.05	.01	-.01	-.00	.16							
10.Complication	.05	.03	.18*	.10	.01	.04	-.13	-.25***	-.72***						
11. Mode of delivery	-.06	.01	-.06	.06	.00	.00	.00	.12*	.98***	-.71***					
12. Parity	.11	.10	-.25***	-.05	.13	-.23**	.11	.02	.19**	-.16*	.17*				
13. Childbirth class	.17**	.06	-.02	-.06	-.04	-.14*	.03	-.17	-.03**	.00	-.02	.03			
14. Age	.11	.06	-.13	.17*	.28***	-.20**	.13	.08	-.81**	.10	-.18*	.46***	-.05		
15. Education	-.21**	-.05	.09	-.03	-02	-.08	-.13	.00	.00	-.01	.02	-.15*	.05	-.17*	
16.Overall Satisfaction	.60***	.34***	-.06	.09	.12	-.00	.06	.07	-.02	-.02	-.04	.03	.17*	.04	-12

*p<.05, **p<.01, ***p<.00

Regression model for satisfaction with the childbirth experience (SCE)

Hierarchical multiple regression was conducted to examine the predictors of satisfaction. The order that the variables were entered into the model was determined by the research questions and findings from previous studies that having expectations met, self-efficacy and fear can predict satisfaction. This study examined whether the match between expectations and experiences about childbirth was predictive of satisfaction in childbirth experiences and if this relationship was stronger than the known relationship between self-efficacy and fear with satisfaction. In the first step of the multiple regressions, the predictor set contained two variables, fulfilled expectations and unexpected experiences, to determine the relationship between the match in expectations and experiences and satisfaction. The second set contained self-efficacy and fear. Of interest at this step was whether or not fulfilled expectations and/or unexpected experiences remained significant. The last step contained the two covariates (childbirth education and childbirth class) to examine if the pattern of relationships remain after controlling for these other factors.

The hierarchal regression predicting SCE was summarized in Table 9. Fulfilled expectations and unexpected experiences accounted for 17.4% of the variance in SCE (R^2 = .174, F (2,191) =20.05, p<.001) in the first step. Only fulfilled expectations was significant (β=.41, p<.001). When self-efficacy and fear were added to the model, they significantly improved the prediction explaining an additional 3.0% of the variance (ΔR^2 = .030, ΔF (2,189) =3.56, p= .030). Fulfilled expectations (β=.38, p<.001) and self efficacy expectancy (β=.16 p=.017) were both significant at this step. In the last step, including childbirth class and education accounted for an additional 5.2% of the variance

in SCE (ΔR^2 = .052, ΔF (2,187) = 6.51, p= .002). Both fulfilled expectations and self efficacy expectancy remained significant when the covariates were added to the model. As indicated by the R^2, the entire group of variables explained 25.5% of the variance in SCE, F (7, 186) =10.70, p<.001, R^2_{total}=.255.

In the final model, fulfilled expectation was the strongest predictor of SCE as measured by SCE. As fulfilled expectations increased by one standard deviation, SCE increased by .37 standard deviations (β=.37, p<.001). Fulfilled expectations made a significant unique contribution with SCE, while unexpected experience was not significant. Lower education (β=-.17, p=007) was the next strongest predictor of SCE followed by higher self-efficacy (β=.17, p=.011), and attending a childbirth class (β=.14, p=.026). Women with more fulfilled expectations, lower education, higher self-efficacy, and taking childbirth classes were significantly more likely to have higher levels of satisfaction with childbirth experiences. Fear of childbirth was related to SCE (r=-.14, p<.05) but not after controlling for the match between expectations and experiences and self-efficacy.

Table 10

Summary of Hierarchical Analyses for Variables Predicting SCE

Variables	*B*	*SE B*	β	*p*
Step 1				
Fulfilled expectations	.01	.00	.41	<.001
Unexpected experiences	-.00	.00	-.11	.098
R^2 = .174 , p < .001				
Step 2				
Fulfilled expectations	.01	.00	.38	<.001
Unexpected experiences	-.00	.00	-.10	.134
Self-efficacy expectancy	.04	.02	.16	.017
Childbirth fear	-.03	.04	-.05	.470
ΔR^2 = .030 , p =.030				
Step 3				
Fulfilled expectations	**.01**	**.00**	**.37**	**<.001**
Unexpected experiences	-.00	.00	-.09	.180
Self-efficacy expectancy	**.04**	**.01**	**.17**	**.011**
Childbirth fear	-.01	.04	-.02	.812
Childbirth class	**.11**	**.05**	**.14**	**.026**
Education	**-.09**	**.03**	**-.17**	**.007**
ΔR^2 = .052 , p =.002				

Note. Total R^2 = .255, p <.001

Regression model for overall satisfaction in childbirth (OSC)

In order to explore more fully the satisfaction measure, the same set of 14 predictors used to predict SCE was examined as predictors of OSC. Only fulfilled expectations and attending a childbirth class were significant predictors of the single item measure of OSC. Therefore, fulfilled expectations and unexpected experiences were entered in the first step of the hierarchical regression and attending a childbirth class was entered in the second step.

The hierarchal regression predicting OSC was summarized in Table 10. Fulfilled expectations and unexpected experiences accounted for 12.1% of the variance in OSC (R^2 = .121, F (2,191) =13.12, p<.001) in the first step. Only fulfilled expectations was significant (β=.34, p<.001). When attending a childbirth class was added to the model, they significantly improved the prediction explaining an additional 2.2 % of the variance (ΔR^2 = .022, ΔF (3,190) =4.79, p= .030). Fulfilled expectations (β=.33, p<.001) and attending a childbirth class (β=.15 p=.030) were both significant at this step. The entire group of variables explained 14.2% of the variance in OSC, F (3, 190) =10.52, p<.001, R^2_{total}=.142.

Table 11

Summary of Hierarchical Analyses for Variables Predicting OSC

Variables	*B*	*SE B*	β	*p*
Step 1				
Fulfilled expectations	.02	.00	.34	<.001
Unexpected experiences	-.00	.00	-.07	.277
R^2 = .121 , p <.001				
Step 2				
Fulfilled expectations	.02	.00	.33	<.001
Unexpected experiences	-.00	.00	-.07	.295
Childbirth class	.16	.07	.15	.030
ΔR^2 = .022 , p =.030				
Total R^2 = .142 , p <.001				

Results from Additional Analysis

In order to examine if the new measure of satisfaction (SCE) is a function of other factors not just global overall satisfaction, OSC was added into the first step of the hierarchical regression for SCE for Specific Aims 2 and 3. If OSC is the only significant variable in the model, then it is possible that SCE is not measuring anything above and beyond global satisfaction with childbirth.

In the first step, OSC, fulfilled expectations and unexpected experiences accounted for 40.6% of the variance in SCE (R^2 = .406 F (3,190) =43.28, p<.001). OSC (β=.51, p<.001) and fulfilled expectations (β=.23, p<.001) were significant in the first step (Table 11). When self-efficacy and fear were added, they accounted for an additional 2.2% of the variance (ΔR^2 = .022, ΔF (2,188) =3.61, p= .029.OSC (β=.51, p<.001). Fulfilled expectations (β=.21, p=.001) remained significant in the second step. In the last step, taking childbirth class and education accounted for an additional 1.9% of the variance in SCE (ΔR^2= .019, ΔF (2,186) = 3.27, p= .040). The entire group of variables explained 44.7% of the variance in SCE, F (7, 186) =21.51, p<.001, R^2_{total}=.447.

In the final model, fulfilled expectation remained a significant predictor of satisfaction even after controlling for OSC (β=.23, p<.001). OSC was the strongest predictor of SCE (β=.48, p<.001) followed by fulfilled expectations (β=.21, p<.001), education (β=-.12, p=027), and self-efficacy (β=.11, p=.042). However, taking a childbirth class was not significant when overall satisfaction of childbirth added to the model.

Table 12

Hierarchical Regression for Satisfaction with childbirth experiences (SCE) controlling for Overall Satisfaction (OSC) and other variables predicting

Variables	*B*	*SE B*	β	*p*
Step 1				
OSC	.38	.04	.51	<.001
Fulfilled expectations	.01	.00	.23	<.001
Unexpected experiences	-.00	.00	-.07	.206
R^2 = .406, p<.001				
Step 2				
OSC	.38	.04	.51	<.001
Fulfilled expectations	.01	.00	.21	.001
Unexpected experiences	-.00	.00	-.05	.326
Self-efficacy expectancy	.03	.01	.11	.054
Childbirth fear	-.06	.04	-.09	.138
ΔR^2= .022, p=.029				
Step 3				
OSC	.36	.04	.48	<.001
Fulfilled expectations	.01	.00	.21	<.001
Unexpected experiences	-.00	.00	-.05	.384
Self-efficacy expectancy	.03	.01	.11	.042
Childbirth fear	-.04	.04	-.07	.256
Childbirth class	.05	.04	.07	.237
Education	-.06	.03	-.13	.027
ΔR^2 = .02, p=.040				

Note. Total R^2 = .447, p<.001

The difference between satisfaction with childbirth experiences (SCE) and overall satisfaction of childbirth (OSC)

Additional analyses were conducted to explore the relationship between the two measures of satisfaction. There was a moderate, positive significant relationship between SCE and OSC (r=.60, p<.001). A paired samples t-test was conducted to explore the difference between the average score of 36 items about satisfaction with childbirth experiences (SCE) and the one item of overall satisfaction of childbirth (OSC). Both measures had a 1-4 response scale. The results shown in Table 13 illustrate that the average scores of women's satisfaction with their childbirth experiences (SCE) were statistically significantly less than overall satisfaction scores (OSC) (p<.001).

Table 13

Comparison means, standard deviations of SCE and OSC

Variables	*M*	*SD*	*t*	*p*
SCE	3.38	.40	-4.73	<.001
OSC	3.52	.53		

The drivers of overall satisfaction of childbirth

SCE and OSC may be tapping into different aspects of satisfaction with childbirth given that OSC is not the only predictor of SCE and the means of the two measures are significantly different. To identify the drivers of OSC, the contribution of the satisfaction with each of the childbirth experience items to OSC was examined. The items that had moderate correlations with OSC (r = 0.40-0.50, p<.001) were the items that related to

nurse care, including the nurse was happy to help me (r=.50, p <.001), student nurses took care of me during labor and birth (r= .49, p<.001), nurses helped me talk with doctors (r=.49, p<.001), nurses informed about method of pain relief (r=.47, p <.001), nurses spoke to me politely (r=.46, p<.001), nurses took very good care of my baby after birth (r=.46, p<.001), nurses treated my family politely (r=.45, p<.001). The items that had the lowest correlations (r < 0.2) were the items that related to having their legs strapped on a metal stirrups during delivery (r=.18, p=.011) and having food and fluids withheld during labor and birth (r=.18, p=.009). Interestingly, the drivers of OSC were related to many support actions and behaviors from nurses. Please see Table 13 for the correlation between each item of satisfaction with childbirth experiences and overall satisfaction of childbirth.

Table 14

Correlations between items of SCE and OSC

	R	p
1. I got medication to reduce pain.	.290	<.001
2. I got medication to induce labor.	.228	.001
3. I had special instruments for checking my baby's health.	.256	<.001
4. I had a vaginal examination for checking cervix dilatation.	.334	<.001
5. I had intravenous fluids.	.219	.002
6. I had food and fluids withheld during labor and birth.	.187	.009
7. I had other laboring women stay in the same room during labor	.288	<.001
8. I had a relative by my side during labor.	.238	.001
9. I had my husband by my side during labor.	.241	.001
10. I was able to contact my family during labor.	.284	<.001
11. I got supportive care from nurses during labor.	**.422**	**<.001**
12. I received information from nurses about methods of pain relief.	**.473**	**<.001**
13. I received information from nurses about my progress of labor.	.368	<.001
14. I had my legs strapped on metal stirrups during delivery.	.181	.011
15. I was in a private delivery room during delivery.	.225	.002
16. I had a nurse coaching during delivery.	**.434**	**<.001**
17. I was delivered by a nurse.	.267	<.001
18. I was delivered by a doctor.	.392	<.001

Table 14 (cont)

Correlation between items of SCE and OSC

	r	p
19. I was informed immediately when something is wrong with me or my baby	.318	<.001
20. I was involved in decision making about my care and treatments during the delivery process.	**.482**	**<.001**
21. I was assisted with forceps or vacuum instruments when I could no longer push.	.107	.139
22. I had an operation to deliver my baby if I had any complications.	.233	.001
23. I had an episiotomy	.283	<.001
24. I had anesthetic medication before the episiotomy	.355	<.001
25. Doctor was ready to help at anytime if something was wrong with me during delivery.	**.429**	**<.001**
26. Student nurses took care of me during my labor and birth.	**.495**	**<.001**
27. Nurses spoke to me politely.	**.463**	**<.001**
28. Nurses treated my family politely.	**.449**	**<.001**
29. Nurses helped me talk with the doctor.	**.492**	**<.001**
30. Nurses contacted the doctors for me if I wanted to consult the doctors.	**.465**	**<.001**
31. Nurses were happy to help me	**.505**	**<.001**
32. Nurses were busy and may not have time to take care of me	.333	<.001
33. Nurses brought my baby to me immediately after birth	.281	<.001
34. Nurses took very good care of my baby after birth	**.462**	**<.001**
35. My baby and I were safe during labor and birth	.211	.003
36. My husband and my family had a chance to hold my baby after birth	.367	<.001

Predictors of unexpected experiences

In order to understand unexpected experiences better, variables that correlated with unexpected experiences were examined. Unexpected experiences were related to fear of childbirth, complication during labor, and parity. When these three variables were included in a regression equation predicting unexpected experiences, only parity and complications during labor were significant predictors of unexpected experiences. Fear of childbirth was related to unexpected experiences (r=.17, p<.05) but not after controlling for parity and complication during labor. Women were pregnant for the first time and who had complications during labor were more likely to have unexpected experiences during childbirth. Please see Table 15 for the results of the regression analysis predicting unexpected experiences.

Table 15

Predictors of Unexpected Experiences

Variables	*B*	*SE B*	β	*p*
Fear	4.02	2.38	.12	.093
Parity	-7.90	2.85	-.20	.006
Complication during labor	5.85	2.92	.14	.047

R^2 = .094 , p < .001

Since women who were pregnant for the first time were more likely to have unexpected experiences, t-test and chi-square analyses were conducted to explore difference in the characteristics of first time pregnant women and those who had given birth previously. These two groups of women did not differ in whether or not they attended a childbirth class. However nulliparous women were significantly younger (*M diff* = -5.53, p <.001, 95% CI -7.05 to - 4.01) and more likely to have higher education than multiparous women.

Table 16

Comparison of demographic characteristics according to parity

Variables	Nulliparous (N=101)	Mulltiparous (N=94)	*p*
Attending childbirth class	46 (45.5%)	45 (48.4%)	.774
Education			
- Primary	19 (18.8%)	35 (37.2%)	
- Secondary	67 (66.3%)	50 (53.2%)	
- College	9 (8.9%)	4 (4.3%)	.036
- Bachelor degree	6 (5.9%)	4 (4.3%)	
- Higher than bachelor degree	0 (0.0%)	1 (1.1%)	
Age	*M*=22.84(SD=5.45)	*M*=28.37(SD=5.28)	<.001

Comparison of expectations and fear of childbirth according to gestational age

It is possible about fear and the number of items a woman expects changes during the pregnancy. To determine whether the number of items expected and fear of childbirth were different according to gestational age, one-way analyses of variance were conducted with three levels of gestational age; 32-24 weeks, 35-37 weeks, and 38-41 weeks. There were no differences among the three gestational age groups on fear or number of items expected.

Table 17

Comparison of expectations and fear of childbirth according to gestational age

Variables	38-41 wks (N=41) *M(SD)*	35-37 wks (N=77) *M(SD)*	32-34 wks (N=77) *M(SD)*	*p*
Fear	2.47(0.59)	2.39(0.64)	2.36(0.57)	.654
Number of items expected	28.63(2.47)	27.89(3.31)	28.02(3.76)	.508

CHAPTER 5

DISCUSSION

This chapter presents the study's major findings, implications, and limitations and offers suggestions for future research efforts with Thai pregnant women. The major findings indicate that aligning women's expectations with their experiences in childbirth could improve women's satisfaction with the childbirth experiences, as fulfilled expectations were more predictive of satisfaction with childbirth than self-efficacy and fear. Fulfilled expectations was the most important consistent determining factor of satisfaction with childbirth, followed by education, self-efficacy, and attending a childbirth class. Unexpected experiences were not related to satisfaction in childbirth, but both complications during labor and being a first time mother were associated with increased unexpected experiences. In Thailand, the aspects of childbirth that women are most satisfied with are having a safe delivery and receiving good supportive care from nurses. On the other hand, lack of pain medication and lack of family participation in the childbirth process result in the lowest levels of satisfaction.

This was the first longitudinal prospective study to explore, from the third trimester of pregnancy through the postpartum period, the details of the match between childbirth expectations and experiences and associated satisfaction. Although the most frequently mentioned factors in literature that relate to satisfaction with childbirth experiences are pain relief, social support, self-efficacy, and having expectations met (Goodman, et al., 2004; Hodnett., 2002; Lally, Murtagh, Macphail, & Thomson:, 2008), these factors may not apply in Thailand because very few women experience pain relief medication or social support from family during labor and birth. Instead of using

measures from previous studies, this study used a new measure based on the perspectives of Thai pregnant women and nurses, and it thus captures the possible aspects of childbirth experiences that can occur in Thai public hospitals.

One unique aspect of this study is that it did not assume all women have the same set of expectations for childbirth. This study allowed for individual differences in what women expected and experienced. During their third trimester, each woman completed a questionnaire asking which of 36 different items she expected to happen during her upcoming delivery. After giving birth, women were asked which of the 36 different items they actually experienced. The match between expectations and experiences was measured by the percent of fulfilled expectations, unmet expectations, unexpected experiences and null experiences.

In other studies, expectations and experiences have been measured by asking a woman in the postpartum period to rate how similar her childbirth experiences were to her expectations, on scales that ranged from *about like expected* to *not at all like expected* (Stolte, 1987). Several studies used just one overall global item after childbirth to measure the degree of expectations met (Bryanton, Gagnon, Johnston, et al., 2008; Goodman, et al., 2004). Even the questionnaires that gathered data before and after delivery generally focused on some specific area. For example, the W-DEQ (Wijma, et al., 1998) focused only on fear of childbirth, and the EEBS measure (Slade, et al., 1993) focused on positive (e.g. exciting, enjoyable) and negative emotions (e.g. frightening, embarrassing), and medical and control aspects of labor. Some studies focused on only labor pain and pain relief (Capogna, et al., 1996; McCrea & Wright, 1999; Waldenstrom, Borg, Olsson, & Skold, 1996). Most of these studies used the significant correlation

between expectations and experiences to interpret the results. Although many studies consistently found that women tended to get what they expected, it was not clear whether women were satisfied with those experiences. Therefore, this study expanded the measure of TCEEQ to evaluate the match between expectations and experiences on 36 aspects of childbirth and the associated satisfaction with each of the 36 items. This result may help us to understand more fully in the relationships between expectations, experiences and satisfaction.

The following discussion is organized based on the implications of the findings: 1) the pattern of childbirth expectations and childbirth experiences, 2) the importance of the mismatch between expectations and experiences, 3) the differences between measuring satisfaction with childbirth experiences and overall satisfaction of childbirth, and 4) self-efficacy and fear and their relative importance to matches/mismatches in expectations and experiences.

1. The pattern of childbirth expectations and childbirth experiences

Although women's childbirth expectations and experiences varied, the findings showed that most of the items each woman expected during childbirth actually happened during labor and birth (fulfilled expectations) and most of the items each woman did not expect actually did not happen (null experiences). In about one-third of the 36 items, there was a mismatch between expectations and experiences (unmet expectations and unexpected experiences). Lally et al (2008) suggested in their systematic review of women's expectations and experiences of pain relief in labor, that if we would like to improve women's experience of labor, research should identify the mismatch between women's expectations and experiences. This study addressed the gap between the two by

looking at which specific expectations of women need to be brought more in line with their actual experiences. The items that were most likely to be mismatches were related to having an operation to deliver the infant, being assisted with forceps or a vacuum instrument, and being delivered by a doctor.

Hierarchical regression showed that the match between childbirth expectation and experiences are more predictive of satisfaction in childbirth experiences than self-efficacy and fear. Fulfilled expectations made a significant unique contribution to satisfaction, while unexpected experiences were not significant. A greater number of fulfilled expectations were associated with higher satisfaction with childbirth experiences. Although several studies (Bryanton, Gagnon, Hatem, et al., 2008; Christiaens & Bracke, 2007; Goodman, et al., 2004) have supported the finding that having expectations met is associated with better satisfaction, this study added significant details to the literature on the specific aspects of the childbirth. Safety of women and their infants, as well as support actions from the nurses, were the most important factors related to women's feelings of fulfillment and satisfaction with their childbirth experiences, whereas lack of relief pain medication and absence of family members present during labor and birth were related to women's unmet expectations and dissatisfaction with their childbirth experiences.

This study was able to highlight the importance of individual aspects of childbirth because of the measures and methodology used in evaluating childbirth expectations and childbirth experiences. Using an overall single item about having expectations met or using a universal set of expectation items for all pregnant women does not fully capture the individual differences in childbirth expectations. In addition, the measure used in this

study examined expectations on a wide variety of aspects prior to delivery and followed up with assessing childbirth experiences after delivery and the satisfaction associated with each of these aspects.

The finding that most women's fulfilled expectations related to having a safe delivery and good supportive care from nurses may confirm that the program Thailand initiated in the past decade to increase hospital based maternity care and replaces the traditional home births with nurses, has lead to good quality care and safe birth outcomes (Sauvarin, 2006). On the other hand, the items on which women had unmet expectations and lowest satisfaction score were related to the lack of both pain medication and family participation in the childbirth process. Although many women knew that receiving pain relief medication and having family members present during labor and birth might not occur in their upcoming childbirth, nearly one-half of the women still expected to have pain medication and to have their family participate in the delivery and were dissatisfied when these situations did not occur. This mismatch at the item level could inform nurses and hospitals about the importance of pain relief and family participation in the birth process. Perhaps, nurses and hospitals could develop interventions so women's expectations are better aligned with the hospital's practices or the hospital could reconsider policies on having family members present.

2. Importance of the mismatch between expectations and experiences

Mismatches between expectations and experiences indicated that women did not know what was likely to happen in their upcoming childbirth. The mismatch may have occurred because the nurses did not provide adequate information to the pregnant women or the women did not seek the information. Alternatively, women may have their own

preferences of what they would like to happen, preferences not based on realistic situations (Lally., et al., 2008).

Unmet expectations (expected but did not happen)

Both unmet expectations and fulfilled expectations are percentages of the number of items that each woman expects. In other words, they sum to 100%. Therefore, unmet expectations yielded the same results as fulfilled expectations. Unmet expectations were negatively related to the level of satisfaction with childbirth experiences. The more women had unmet expectations, the more women were dissatisfied with their childbirth experiences. For Thai women, the two issues of most concern were not having family members present during labor and not receiving pain medication although they had expected to have these. For both items, satisfaction scores were low.

Having family members present during labor

The findings related to companionship during labor were consistent with a prior qualitative study about childbirth experiences in Thailand. That study indicated that many Thai women wished to have their husband or other family members present at birth, although they knew that their presence was not allowed (Liamputtong, 2004). The implications of not having family members present during labor and birth go beyond satisfaction. Several studies confirmed that allowing family member to be present in labor not only improved satisfaction with childbirth experiences but also improved childbirth outcomes. As shown in a randomized controlled trial of first time mothers in Botswana, the presence of female relatives during labor was related to fewer uses of obstetric interventions such as intrapartum analgesia, oxytocin, and amniotomies to augment labor, as well as to a higher rate of normal delivery compared to those without

family member support (Madi , Sandall , Bennett , & MacLeod 1999). A large scale survey study of 16,610 mothers in the United Kingdom also showed that mothers who had a companion during labor were much less likely to have pain relief medication compared with those who were unaccompanied at birth (Essex & Pickett, 2008). In the light of the previous literature and findings from this study, allowing family members to be present during labor is an interesting option for Thai health care officials as it not only improves women's satisfaction but is also a low cost intervention that has proved to be beneficial to childbirth outcomes.

Receiving pain medication

In this study, pain relief was shown to be one of the most important factors associated with satisfactory childbirth experiences, a finding which is similar to many previous studies (Ross, 1998; Soet, et al., 2003; Waldenstrom, et al., 2004). A longitudinal study concerning memory of labor pain from 2 months to 5 years after childbirth indicated that the memory of pain was relatively stable over time if the women were dissatisfied with their childbirth experiences (Waldenstrom & Schytt, 2009). Given that pain medication is not currently available for all pregnant women in Thai society, allowing family participation in the childbirth process and considering other ways to cope with labor pain is extremely important. Childbirth education must give Thai pregnant women more realistic expectations of what is likely to happen in the labor unit. Likewise, nurses should explain why pain medication is not given and should allow family members to be present during labor and birth.

There were certain aspects that approximately one-half of the women indicated were unmet expectations (e.g. having an operation if they had any complications, having

assistance with forceps or vacuum instruments, and being delivered by a doctor). However, an examination of the associated satisfaction scores for these items indicates that women felt satisfied with these experiences. These items may represent perceptions about how a woman hoped she would be helped if any complications occurred. If she did not have any complications, she was content with the fact that these strategies were not used. Since the concept of *expectations* is not absolute and can overlap with *preference*, people may include some notions of what is deserved or preferred in a certain situation when they feel uncertain about the upcoming situation (Staniszewska & Ahmed, 1999; Thompson & Sunol, 1995).

Unexpected experiences (not expected but happened).

Unexpected experiences were not related to satisfaction with childbirth experiences but were related to fear, complications during labor, and parity. When the three predictors of unexpected experiences are examined simultaneously using multiple regression, only parity and complications during labor were significant predictors of unexpected experiences. While previous studies did not measure unexpected experiences, they do report that childbirth expectations were more similar to the actual event for multiparous women than for primiparous women (Ayers & Pickering, 2005; Stolte, 1987). The current study provides more details about who is more likely to have unexpected experiences. It was found that women who have complications during labor and the first time pregnant women are more likely to have unexpected experiences during childbirth. Perhaps multiparous women based their expectations about childbirth on their past experiences. Therefore, they might have more accurate expectations of the childbirth event than nulliparous women. Although parity and complications during labor are

factors that we cannot change, knowing that first time pregnant women and women with complications during labor are more likely to have unexpected experiences could indicate to nurses who is in need of more attention during childbirth classes and during labor.

Approximately one fourth of the women in the study had experiences they did not expect: being delivered by the nurses, having food and fluid withheld, and having intravenous fluid. Interestingly, women were still satisfied with these unexpected experiences. Women may feel that these were not serious issues. However, this may mean that women were not clearly informed in the prenatal period about the people who would help her deliver the baby and what might occur during labor and birth. Some previous studies in Sweden found that unexpected medical problems such as emergency operative delivery, induction, and augmentations were related to women's dissatisfaction with childbirth experiences (Ryding, et al., 1998; Waldenstrom, et al., 2004). However, this differs with findings of the current study indicating that most Thai women expected to have operative delivery if they had any complications. This difference might be due to cultural differences; as shown in Liamputtong's study (2005), most Thai women had a positive attitudes towards caesarean section. This study showed that having unmet expectations are not always associated with low satisfaction. The items that indicated dissatisfaction with childbirth experiences were more likely to relate with only certain types of unmet expectations.

The unexpected experiences may mean that the nurses did not prepare or educate the women appropriately before childbirth. Giving the information to women before their upcoming childbirth or during the first stage of labor may improve their satisfaction. For example, the findings showed that nearly one-half of the women had unmet expectations

with regard to being delivered by a doctor and more than one-fourth had unexpected experiences in with regard to being delivered by the nurses. This may indicate that a woman did not know exactly who her birth attendant would be. A woman should be informed correctly that a nurse will be her birth attendant if she has a vaginal delivery and that the physician will be in charge at any time if she can no longer push or has any complications. In addition, introducing the nurse who will be her birth attendant and explaining the reason for having intravenous fluids or having food and fluids withheld during the first stage of labor should be another way to put a woman's expectations more in line with her actual experiences.

3. The difference between measuring satisfaction with childbirth experiences (SCE) and overall satisfaction of childbirth (OSC)

When previous researchers measured satisfaction with childbirth, they generally used a global satisfaction question, thus raising some concerns about the meaning of the results and how to interpret them. Relief at having a safe delivery and a healthy baby could cause women to rate their childbirth highly, ignoring the details of the actual experience. As shown in the current study, overall satisfaction scores were significantly higher than the average score of satisfaction with the different aspects of the childbirth experience.

Having women evaluate overall satisfaction after evaluating satisfaction with the different aspects of the childbirth experience may be more accurate than assessing only one global item. Using a measure like the SCE may help women think thoroughly about each aspect of the childbirth experience before evaluating their overall satisfaction of the experience in general. This means the strength of the relationship between SCE and OSC

found in this study may be stronger than if women were asked about overall satisfaction before completing the SCE.

Women may be satisfied with the overall childbirth experiences but dissatisfied with some specific areas of the childbirth process. This new way of measuring satisfaction helps identify areas where women's expectations were not being met and determine whether or not women were satisfied with those situations. In addition, the measure allows the researchers to pinpoint the aspects of the childbirth experience that women are dissatisfied with. Finally, this kind of measure can provide information about which aspects should have the greatest priority in addressing women's concerns with the childbirth experiences. This is something that overall satisfaction cannot tell us.

The drivers of overall satisfaction

The study further explored which of the 36 items of SCE drive the overall satisfaction of childbirth (OSC). The correlation between each item in the SCE and OSC showed that these two measures tap different aspects of satisfaction. The drivers of OSC came from the supportive actions and behaviors of nurses which are more general expectations of nurses (e.g. nurse was happy to help, student nurses took care of me during labor and birth, nurses helped me talk with doctors, nurses informed me about methods of pain relief, nurses spoke to me politely, nurses took very good care of my baby after birth, nurses treated my family politely). Other items of the SCE such as a safe delivery, infant's health (e.g., my baby and I were safe during labor and birth, having special instruments for checking my baby's health, and nurse took very good care of my baby after birth), pain relief medication, and companionship during labor and birth were not related to OSC.

If this study had measured only overall satisfaction as an outcome variable, the findings may have missed important conclusions about childbirth experiences. Given that overall satisfaction was high, this could be misinterpreted to indicate that most women felt happy with their childbirth experiences. Moreover, when we compare the result of predicting SCE and OCS, only childbirth classes and fulfilled expectations predicted overall satisfaction. Other than fulfilled expectations and childbirth classes, there were two additional factors of self-efficacy and education that predicted satisfaction with childbirth experiences.

4. Self-efficacy, fear and its relative importance to matches/mismatches in expectations and experiences

Consistent with Bandura's self-efficacy theory (1997) and Lowe's study (2000), women who have higher self-efficacy report having less fear in childbirth. This study also found that women who have greater self-efficacy and less fear report having greater satisfaction with childbirth experiences. The finding was consistent with Christiaens and Bracke's study (2007) that found that enhancing self-efficacy could improve childbirth satisfaction. Thus, creating childbirth classes aimed at increasing self-efficacy may help to decrease fears of childbirth and increase satisfaction with childbirth. Lowe's studies (1989; 1991) also indicated that women who had greater self-efficacy reported having less pain during labor.

Since fear was not a significant predictor of SCE when controlling for the match between expectations and experiences and self-efficacy, it may be that expectations and self-efficacy are important mediators of the relationship between childbirth fear and satisfaction. We cannot make direct conclusions about causality between fear, self-

efficacy and expectations because these variables were measured at the same time; nevertheless, the findings showed that women with higher fear report lower self-efficacy, more unexpected experiences and lower satisfaction with childbirth experiences. Fear increases a woman's negative appraisal of the situation and, thus, a vicious circle of negative expectations and experiences can be created, making expectations come true (Alehagen, Wijma, & Wijma, 2006). Women who did not expect childbirth to be a positive experience were more likely to have negative childbirth experiences (Alehagen, et al., 2006; Green, 1993; Waldenstrom., 1999). This study added to the literature the important finding that fears were associated with unexpected experiences. In addition, unmet expectations were significantly negatively related to satisfaction with childbirth experiences.

Accuracy of women's perceptions of childbirth experiences

This study evaluated women's perceptions about their childbirth experiences and did not have an objective measure of all of those experiences. For those items that had both an objective and perceptual measure, the accuracy of the women's perceptions was examined. To ensure that the childbirth experiences from women's perceptions were accurate, the obstetric information collected from medical records of the labor and birth was compared to the women's reported experiences. The cross tabulation was analyzed for receiving pain medication, medication to induce labor, intravenous fluid, anesthetic before episiotomy, and episiotomy.

The medical chart obstetric information and the women's perceptions of what happened were congruent for all items except anesthetic before episiotomy. The percent agreement for not receiving pain medication was 96.9%; not receiving medication to

induce labor was 93.7%; receiving intravenous fluid was 92.1%; and not receiving anesthetic medication before episiotomy was 64.4%. It was found that 35.6% of women who did not receive anesthetic before episiotomy perceived that they had. This perception may come from a numb feeling which is due to the baby's head stretching the perineum so thin that the nerves are blocked. The result is a natural anesthetic. Women may have confused this phenomenon with receiving an anesthetic before or after an episiotomy. The excellent agreements on the other items support the accuracy of women's perceptions about what happened during labor and delivery.

Implications for nurses and hospitals

Results suggest that aligning women's expectations about childbirth with the actual labor and delivery experiences could improve women's satisfaction with the childbirth process. There are specific areas such as receiving pain medication and having family participation in the childbirth process where unmet expectations are common and satisfaction is low. Therefore, allowing family to participate in the childbirth process or clearly explaining why they cannot participate, preparing childbirth classes based on women's expectations, and enhancing self-efficacy in childbirth classes could improve satisfaction in childbirth.

The TCEEQ could be a useful tool to facilitate the preparation for childbirth classes. The TCEEQ could be used to evaluate what a woman expects in her upcoming childbirth at the onset of a childbirth class. This could inform the nurses as to what is needed to be discussed during the childbirth classes. Moreover, a study in Hong Kong confirmed that a childbirth class based on Bandura's self-efficacy theory was effective in

increasing self-efficacy for childbirth and reducing pain and anxiety in the first and second stage of labor and birth (Ip, Tang, & Goggins, 2009).

Findings from this study show that women with higher education were more likely to have lower satisfaction with childbirth experiences, while first time pregnant women were more likely to have unexpected experiences. These findings may indicate that nurses should pay close attention to some specific groups during pregnancy by asking and comparing their expectations with other pregnant women. The information from these specific groups will aid us in understanding how to help them meet their expectations and be satisfied with their childbirth experiences.

Limitations

One limitation of this study is that it was conducted in only one provincial hospital in Thailand. Compared to the other hospitals of Thailand, the number of births in Udonthani hospital was 5,167 in 2008 (Udonthani Hospital Annual Report, 2009), while the total live births in Thailand in 2007 was 797, 588 (Thailand Health Profile, 2008). The percent of births in this hospital is approximately 0.6% of births in the whole country. The national survey reported that 41% of total deliveries occurred in rural hospitals, 34% in provincial hospitals, 18% in other public hospitals, and 7% in private hospitals (Teerawattananon, Tangcharoensathien, et al., 2003). Different kinds of hospitals may differ in maternity care; for example, all provincial hospitals have obstetricians and nurse-midwives in the labor unit while most rural hospitals have general physicians and nurses. Therefore, the results of this study may not generalize beyond that setting.

A second limitation of this study relates to the TCEEQ. Women could not rate satisfaction for certain events that did not occur or were not relevant to their own experience, events such as *I had an operation to deliver my baby, if I had any complications*. To be more precise, the response format for satisfaction on the questionnaire should have an additional choice such as *not applicable*.

Another possible limitation is that the criteria for sample recruitment may not well represent all childbearing women in Thailand because most of the women in this study were 18-45 years, healthy and having healthy babies. According to the Thailand national statistics report in 2009, 17.7% of those who give birth are in their teens, 5.23% of pregnant women have complications during pregnancy, and 5.35% of infants have an Apgar < 7 at 5 minutes after birth (Thai maternal and child health profile, 2009). None of these cases are represented in this study.

Future research

The findings of this study suggest multiple areas that call for future investigation. These areas include:

1. Evaluating the match between childbirth expectations and childbirth experiences in other hospitals to examine if the patterns of childbirth experiences differ between different government hospitals and alternative settings.
2. Evaluating the match between expectations and experiences relative to satisfaction in other health care services to identify the gaps of care.
3. Making a change in the system by allowing family members to be present during labor and birth and conducting a pilot study comparing women who were unaccompanied to those who have family by their side during labor and birth, and

exploring the effect on outcomes such as the length of each stage of labor, satisfaction with the childbirth process, pain during childbirth, and complications during labor.

4. Assessing women's expectations about childbirth at various times throughout pregnancy from the first, second, and third trimester to indicate when help is needed to change the mismatch between expectation and experiences, since some misperceptions about women's expectations can be corrected before labor and birth.

5. Developing in depth qualitative research among specific groups such as teen pregnant women, first time pregnant women, and women with high fear, to discuss their expectations and their experiences with childbirth.

6. Evaluating fear of childbirth at the second trimester, before self-efficacy and expectations, to identify mediators between childbirth fear and satisfaction with childbirth experience.

7. Exploring the sources of expectations to determine if those sources are desires, previous experiences, or a lack of knowledge.

8. Exploring why women with higher education have lower satisfaction with childbirth experiences.

Conclusion

This study confirms the hypothesis that the match between childbirth expectations and childbirth experiences is more predictive of satisfaction with childbirth experiences than self-efficacy and fear. Among various factors, fulfilled expectations are the strongest predictors of satisfaction with childbirth experiences. Having fulfilled expectations, higher self-efficacy expectancies, and attending a childbirth class could improve women's satisfaction with their childbirth experiences. Receiving pain

medication and having a relative or husband present during labor and delivery were the two issues of most concern because, not only did they indicate the lowest associated satisfaction with childbirth experiences, but they were the items that several Thai women expected with their upcoming childbirth but did not experience (unmet expectations). Using a measure of satisfaction with childbirth experience based on women's expectations and experiences could inform the development of interventions to help women meet the challenges of childbirth with realistic expectations and help the health system identify areas where women's expectations are not being met.

REFERENCES

Alehagen, S., Wijma, B., & Wijma, K. (2006). Fear of childbirth before, during, and after childbirth. *Acta Obstetricia & Gynecologica Scandinavica, 85*(1), 56-62.

Althabe, F., & Belizin, J. M. (2006). Cesarean section: the paradox. *Lancet*, 1472-1473.

Ayers, S., & Pickering, A. D. (2005). Women's expectations and experience of birth. *Psychology and Health, 20*(1), 79-92.

Bandura, A. (1977). Self-efficacy : toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.

Bandura, A. (1997). *Self-efficacy: The exercise of Control* New York: W.H. Freeman.

Bandura., A. (1986). *Social Foundations of Thought and Action: A social cognitive theory*. New Jersey: Prentice-Hall.

Bandura., A. (2000). Cultivate Self-Effiacy for Personal and Organizational Effectiveness. . In E. A. Lock (Ed.), *Handbook of principles of organization behavior*. Oxford: Blackwell.

Barron, C. J., Moffett, J. A., Potter, M., Barron, C. J., Moffett, J. A. K., & Potter, M. (2007). Patient expectations of physiotherapy: definitions, concepts, and theories. *Physiotherapy Theory & Practice, 23*(1), 37-46.

Bramadat, I. J., & Driedger, M. (1993). Satisfaction with childbirth: theories and methods of measurement. *Birth: Issues in Perinatal Care, 20*(1), 22-29.

Brown, S., & Lumley, J. (1994). Satisfaction with care in labor and birth: a survey of 790 Australian women. [Research Support, Non-U.S. Gov't]. *Birth, 21*(1), 4-13.

Brown., R., Dunn, S., & Butow, P. (1997). Meeting patient expectations in the cancer consultation. *Annals of Oncology, 8*(9), 877-882.

Bryanton, J., Gagnon, A. J., Hatem, M., & Johnston, C. (2008). Predictors of early parenting self-efficacy: results of a prospective cohort study. [Research Support, Non-U.S. Gov't]. *Nursing Research, 57*(4), 252-259.

Bryanton, J., Gagnon, A. J., Johnston, C., & Hatem, M. (2008). Predictors of women's perceptions of the childbirth experience. *JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 37*(1), 24-34.

Capogna, G., Alahuhtat, S., Celleno, D., De Vlieger, H., Moreira, J., Morgan, B., et al. (1996). Maternal expectations and experiences of labour pain and analgesia: a multicentre study of nulliparous women. *International Journal of Obstetric Anesthesia, 5*(4), 229-235.

Casey, B. M., McIntire, D. D., & Leveno, K. J. (2001). The Continuing Value of the Apgar Score for the Assessment of Newborn Infants. *N Engl J Med, 344*(7), 467-471.

Chalmers, B., Mangiaterra, V., & Porter, R. (2001). WHO principles of perinatal care: the essential antenatal, perinatal, and postpartum care course. [Review]. *Birth, 28*(3), 202-207.

Christiaens, W., & Bracke, P. (2007). Assessment of social psychological determinants of satisfaction with childbirth in a cross-national perspective. *BMC Pregnancy & Childbirth, 7*, 26.

Chunuan, S., Kala, S., & Kochapakdee, W. (2004). Childbirth policy in Thailand: is it a time to change? *Songkla Med J, 22*(4), 263-272.

Chunuan, S., Vanaleesin, S., Morkruengsai, S., & Thitimapong, S. (2007). The Thai culture and women's participation in their maternity care. *Songkla Med J, 25*(3), 231-238.

Crowe, K., & von Baeyer, C. (1989). Predictors of a positive childbirth experience. *Birth, 16*(2), 59-63.

Dannenbring, D., Stevens, M. J., & House, A. E. (1997). Predictors of childbirth pain and maternal satisfaction. *Journal of Behavioral Medicine, 20*(2), 127-142.

Drummond, J., & Rickwood, D. (1997). Childbirth confidence: validating the Childbirth Self-Efficacy Inventory (CBSEI) in an Australian sample. *Journal of Advanced Nursing, 26*(3), 613-622.

Essex, H. N., & Pickett, K. E. (2008). Mothers without companionship during childbirth: an analysis within the Millennium Cohort Study. *Birth, 35*(4), 266-276.

Fenwick, J., Hauck, Y., Downie, J., & Butt, J. (2005). The childbirth expectations of a self-selected cohort of Western Australian women. *Midwifery, 21*, 23 - 35.

Gibbins, J., & Thomson, A. (2001). Women's expectations and experiences of childbirth. *Midwifery, 17*, 302 - 313.

Goodman, P., Mackey, M. C., & Tavakoli, A. S. (2004). Factors related to childbirth satisfaction. *Journal of Advanced Nursing, 46*(2), 212-219.

Green, J. (1993). Expectations and experiences of pain in labour: Findings from a large prospective study. *Birth, 20*, 65 - 72.

Hall, J. A., & Dornan, M. C. (1990). Patient sociodemographic characteristics as predictors of satisfaction with medical care: a meta-analysis. *Social Science & Medicine, 30*(7), 811-818.

Hanvoravongchai, P., Letiendumring, J., Teerawattananon, Y., & Tangcharoensathien, V. (2000). Implications of private practice in public hospitals on the cesarean section rate in Thailand. *Human Resources for Health Development Journal, 4*(1), 1-12.

Hodnett., E. D. (2002). Pain and women's satisfaction with the experience of childbirth: a systematic review. *American Journal of Obstetrics and Gynecology, 186*(Suppl), S160 - S172.

Hug, I., Chattopadhyay, C., Mitra, G. R., Kar Mahapatra, R. M., Schneider, M. C., Mitra, G. R., et al. (2008). Maternal expectations and birth-related experiences: a survey of pregnant women of mixed parity from Calcutta, India. *International Journal of Obstetric Anesthesia, 17*(2), 112-117.

Ip, W.-Y., Chan, D., & Chien, W.-T. (2005). Chinese version of the Childbirth Self-efficacy Inventory. *Journal of Advanced Nursing, 51*(6), 625-633.

Ip, W.-Y., Chung, T. K. H., & Tang, C. S. (2008). The Chinese Childbirth Self-Efficacy Inventory: the development of a short form. *Journal of Clinical Nursing, 17*(3), 333-340.

Ip, W.-Y., Tang, C. S., & Goggins, W. B. (2009). An educational intervention to improve women's ability to cope with childbirth. *Journal of Clinical Nursing, 18*, 2125-2135.

Ip., W. Y., Chien, W. T., & Chan, C. L. (2003). Childbirth expectations of Chinese first-time pregnant women. [Research Support, Non-U.S. Gov't]. *Journal of Advanced Nursing, 42*(2), 151-158.

Kish, J. A. (2003). *The development of maternal confidence for labor among nulliparous pregnant women.* Unpublished Dissertation University of Maryland, College Park.

Lally, J. E., Murtagh, M. J., Macphail, S., & Thomson:, R. (2008). More in hope than expectation: a systematic review of women's expectations and experience of pain relief in labour. *BMC Mediciane*.

Liamputtong, P. (2004). Giving birth in the hospital: childbirth experiences of Thai women in northern Thailand. *Health Care for Women International, 25*(5), 454-480.

Liamputtong, P. (2005). Birth and social class: Northern Thai women's lived experiences of caesarean and vaginal birth. *Sociology of Health & Illness, 27*(2), 243-270.

Liamputtong, P., Yimyam, S., Parisunyakul, S., Baosoung, C., & Sansiriphun, N. (2005). Traditional beliefs about pregnancy and child birth among women from Chiang Mai, Northern Thailand. *Midwifery, 21*(2), 139-153.

Liu, S., Liston, R. M., Joseph, K. S., Heaman, M., Sauve, R., Kramer, M. S., et al. (2007). Maternal mortality and severe morbidity associated with low-risk planned cesarean delivery versus planned vaginal delivery at term.[see comment]. *CMAJ Canadian Medical Association Journal, 176*(4), 455-460.

Lowe, N. K. (1989). Explaining the pain of active labor: the importance of maternal confidence. *Research in Nursing & Health, 12*(4), 237-245.

Lowe, N. K. (1991). Maternal confidence in coping with labor: A self-efficacy concept. *JOGNN - Journal of Obstetric, Gynecologic, & Neonatal Nursing, 20*(6), 457-463.

Lowe., N. K. (1991). *The Childbirth Self-efficacy Inventory (CBSEI).* The Ohio State University.

Lowe., N. K. (1993). Maternal confidence for labor: development of the childbirth self-efficacy inventory. *Research in nursing and health, 16*, 141-149.

Lowe., N. K. (2000). Self-efficacy for labor and childbirth fears in nulliparous pregnant women. *Journal of Psychosomatic Obstetrics & Gynecology, 21*, 219-224.

Madi , B. C., Sandall , J., Bennett , R., & MacLeod , C. (1999). Effects of female relative support in labor: A randomized controlled trial *Birth, 26*, 1-4.

Marut, J. S., & Mercer, R. T. (1979). Comparison of primiparas' perceptions of vaginal and cesarean births. [Comparative Study]. *Nursing Research, 28*(5), 260-266.

McCourt, C., Weaver, J., Statham, H., Beake, S., Gamble, J., & Creedy, D. K. (2007a). Elective Cesarean Section and Decision Making: A Critical Review of the Literature. *Birth: Issues in Perinatal Care, 34*(1), 65-79.

McCourt, C., Weaver, J., Statham, H., Beake, S., Gamble, J., & Creedy, D. K. (2007b). Elective cesarean section and decision making: a critical review of the literature. *Birth, 34*(1), 65-79.

McCrea, B. H., & Wright, M. E. (1999). Satisfaction in childbirth and perceptions of personal control in pain relief during labour. *Journal of Advanced Nursing, 29*(4), 877-884.

Melender, H. (2002a). Experiences of fears associated with pregnancy and childbirth: a study of 329 pregnant women. *Birth, 29*(2), 101-111.

Melender, H. (2002b). Fears and coping strategies associated with pregnancy and childbirth in Finland. *Journal of Midwifery & Women's Health, 47*(4), 256-263.

National Health Security Office (2007). Universal coverage program in Thailand, from www.nhso.go.th

Nerum, H., Halvorsen, L., Sorlie, T., & Oian, P. (2006). Maternal request for cesarean section due to fear of birth: can it be changed through crisis-oriented counseling? *Birth, 33*(3), 221-228.

Pang, M. W., Lee, T. S., Leung, A. K. L., Leung, T. Y., Lau, T. K., & Leung, T. N. (2007). A longitudinal observational study of preference for elective caesarean section among nulliparous Hong Kong Chinese women. *BJOG: An International Journal of Obstetrics & Gynaecology, 114*(5), 623-629.

Press, I. (2002). *Patient satisfaction: defining, measuring, and improving the experience of care* Chicago: Health Administration Press.

Redman, R. W., & Lynn, M. R. (2005). Assessment of patient expectations for care. *Research and theory for nursing practice, 19*(3), 275-285.

Redshaw, M. (2008). Women as consumers of maternity care: Measuring "satisfaction" or "dissatisfaction"? *Birth: Issues in Perinatal Care, 35*(1), 73-76.

Reynolds, J. S., & Perrin, N. A. (2004). Mismatches in Social Support and Psychosocial Adjustment to Breast Cancer. *Health Psychology, 23*(4), 425-430.

Riewpaiboon, W., Chuengsatiansup, K., Gilson, L., & Tangcharoensathien, V. (2005). Private obstetric practice in a public hospital: mythical trust in obstetric care. *Social Science & Medicine, 61*(7), 1408-1417.

Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the Health Belief Model. *Health Education Quarterly, 15*(2), 175-183.

Ross, A. (1998). Maternal satisfaction with labor analgesia. *Baillieres Clinical Obstetrics & Gynaecology, 12*(3).

Ryding, E. L., Wijma, K., & Wijma, B. (1998). Psychological impact of emergency cesarean section in comparison with elective cesarean section, instrumental and normal vaginal delivery. *Journal of Psychosomatic Obstetrics & Gynecology, 19*(3), 135-144.

Saisto, T., & Halmesmaki, E. (2007). Fear of childbirth can be treated, and cesarean section on maternal request avoided. *Acta Obstetricia et Gynecologica Scandinavica, 86*(9), 1148-1149; author reply 1149-1150.

Sauvarin, J. (2006). *Maternal and Neonatal Health in East and South-East Asia*. Bangkok, Thailand: The United Nations Population Fund, UNFPA, County Technical Services team for East and South-East Asia.

Sinclair, M., & O'Boyle, C. (1999). The Childbirth Self-Efficacy Inventory: a replication study. *Journal of Advanced Nursing, 30*(6), 1416-1423.

Sitzia, J., & Wood, N. (1997). Patient satisfaction: a review of issues and concepts. [Meta-Analysis]. *Social Science & Medicine, 45*(12), 1829-1843.

Slade, P., MacPherson, S., Hume, A., & Maresh, M. (1993). Expectations, experiences and satisfaction with labour. *British Journal of Clinical Psychology, 32*(4), 469-483.

Soet, J. E., Brack, G. A., & Dilorio, C. (2003). Prevalence and predictors of women's experience of psychological trauma during childbirth. *Birth, 30*(1), 36-46.

Staniszewska, S. B. D., & Ahmed, L. B. M. P. (1999). The concepts of expectation and satisfaction: do they capture the way patients evaluate their care? [Miscellaneous]. *Journal of Advanced Nursing, 29*(2), 364-372.

Stolte, K. (1987). A Comparison of women's expectations of labor with the actual event. *Birth, 14*(2), 99-103.

Tanglakmankhong, K., Perrin, N. A., & Lowe, N. K. (2010). *Psychometric testing of the Thai version of the Childbirth Self-Effiacy Inventory and the Childbirth Attitudes Questionnaire.*Unpublished manuscript, Portland.

Teerawattananon, Y., Suntharasaj, T., Srirattana, S., Tipyasothi, P., Reupiboon, W., & Tangcharoeansathien, V. (2003). Pros and Cons of Private Obstetric Practice in Public Hospitals. *Journal of Health Science, 12*, 496-508.

Teerawattananon, Y., Tangcharoensathien, V., Srirattana, S., & Tipayasoti, P. (2003). Twelve years patterns of hosptial delivery in Thailand 1990-2001: A national survey. *Journal of Health Science, 12*(1), 1-18.

Thai maternal and child health profile (2009). from http://www.saiyairakhospital.com/newdemo/admin/report.html?year=2552

Thailand Health Profile (2008). Total Livebirths and Livebirths in Government Hospital by Region and Province, 2003 - 2007. Retrieved from http://bps.ops.moph.go.th/2.1.4-50.pdf

The Office of the Education Council (2009). Education of Thai people, from http://www.onec.go.th/cms/admin/admin_book/Content/uploaded/url/1004-file.pdf

Thompson, A. G., & Sunol, R. (1995). Expectations as determinants of patient satisfaction: concepts, theory and evidence. [Review]. *International Journal for Quality in Health Care, 7*(2), 127-141.

Tsui, M. H., Pang, M. W., Melender, H. L., Xu, L., Lau, T. K., Leung, T. N., et al. (2006). Maternal fear associated with pregnancy and childbirth in Hong Kong Chinese women. *Women & Health, 44*(4), 79-92.

Udonthani Hospital Annual Report (2009). Udonthani,Thailand: Udonthani Regional Hospital.

Van Teijlingen, E. R., Hundley, V., Rennie, A. M., Graham, W., Fitzmaurice, A., van Teijlingen, E. R., et al. (2003). Maternity satisfaction studies and their limitations: "What is, must still be best". *Birth, 30*(2), 75-82.

Villar, J., Valladares, E., Wojdyla, D., Zavaleta, N., Carroli, G., Velazco, A., et al. (2006). Caesarean delivery rates and pregnancy outcomes: the 2005 WHO global survey on maternal and perinatal health in Latin America. *Lancet, 367*(9525), 1819-1829.

Waldenstrom, U., Borg, I., Olsson, B., & Skold, M. (1996). The childbirth experience: a study of 295 new mothers. *Birth Issues Perinatal Care, 23*, 144 - 153.

Waldenstrom, U., Hildingsson, I., Rubertsson, C., & Radestad, I. (2004). A Negative Birth Experience: Prevalence and Risk Factors in a National Sample. *Birth: Issues in Perinatal Care, 31*(1), 17-27.

Waldenstrom, U., Hildingsson, I., & Ryding, E. (2006). Antenatal fear of childbirth and its association with subsequent caesarean section and experience of childbirth. *BJOG: An International Journal of Obstetrics and Gynaecology, 113*(6), 638-646.

Waldenstrom, U., & Schytt, E. (2009). A longitudinal study of women's memory of labour pain--from 2 months to 5 years after the birth. [Multicenter Study Research Support, Non-U.S. Gov't]. *BJOG: An International Journal of Obstetrics & Gynaecology, 116*(4), 577-583.

Waldenstrom., U. (1999). Experience of Labor and Birth in 1111 Women. *Journal of Psychosomatic Research, 47*(5), 471-482.

Whittaker, A. (1999). Birth and the postpartum in Northeast Thailand: Contesting modernity and tradition. *Medical Anthropology, 18*(3), 215-242.

Wibulpolprasert, S., Sirilak, S., Ekachampaka, P., Wattanamano, S., & Taverat, R. (2008). Thailand health profile 2005-2007. doi:http://www.moph.go.th/ops/health_50

Wijma, K., B.Wijma, & M.Zar (1998). Psychometric aspectd of the W-DEQ; a new questionaire for measurement of fear of childbirth. *J Psychosom Obstet Gynecol, 19*, 84-97.

Wiklund, I., Edman, G., Ryding, E. L., & Andolf, E. (2008). Expectation and experiences of childbirth in primiparae with caesarean section. *BJOG: An International Journal of Obstetrics & Gynaecology, 115*(3), 324-331.

Appendix A

Memo

OREGON HEALTH & SCIENCE UNIVERSITY
Research Integrity Office, L106-RI
2525 SW First Avenue, Portland, OR 97201
Phone: (503) 494-7887

MEMO

Date: December 15, 2008

To: Nancy Perrin, PhD

From: Susan B. Bankowski, M.S., J.D., Chair, Institutional Review Board, L106-RI
Gary T. Chiodo, D.M.D., F.A.C.D., Director, OHSU Research Integrity Office, L106-RI
Charlotte Shupert, Ph.D., Associate Director, Research Integrity Office, L106-RI
Kara Manning Drolet, Ph.D., IRB Co-Chair, Institutional Review Board, L106-RI
Susan Hickman, Ph.D., IRB Co-Chair, Institutional Review Board, L106-RI
Elizabeth Steiner, M.D., F.A.A.F.P., IRB Co-Chair, Institutional Review Board, L106-RI

Subject: IRB00004917, Childbirth Expectations and Childbirth Experiences among Thai pregnant women

Initial Study Review
Protocol/Consent Form Approval

This memo also serves as confirmation that the OHSU IRB (FWA00000161) is in compliance with ICH-GCP codes 3.1-3.4 which outline: Responsibilities, Composition, Functions, and Operations, Procedures, and Records of the IRB.

This study is approved for 200 subjects.

Your protocol is approved for one year effective 12/15/2008 .

Items reviewed and administratively approved by the IRB include:

- Chart review sheet
- Consent Form Thai
- Lay Protocol Summary
- Protocol
- Recruitment Letter Thai
- TCAQ Thai
- TCBSEI Thai
- TCEEQ set 1 and set 2 Thai

- Data Collection Forms set 1 and set 2 Thai

Items reviewed and noted by the IRB include:

- Data Collection form set 1E and 2E
- Recruitment letter English
- Translator's resume
- Udonthani Approval
- Back Translation CAQ and CBSEI

This study met the criteria for EXPEDITED IRB review based on Category # 5 and 7. Category 5, research involving the use of data collected for non-research purposes. Category 7, research employing survey methodologies.

This approval may be revoked if the investigators fail to conduct the research in accordance with the guidelines found in the Roles and Responsibilities document (http://www.ohsu.edu/research/rda/rgc/randr.pdf). Please note that any proposed changes in key personnel must be submitted to the IRB via a Modification Request and approved prior to initiating the change. If you plan to discontinue your role as PI on this study or leave OHSU, you must arrange either (a) to terminate the study by so notifying the IRB and your department head, or (b) propose to transfer the responsibility of the PI to a new faculty member using a Modification Request.

Investigators must offer subjects a copy of the consent form, keep a copy of the signed consent form with the research records, and place a signed copy in the patient's hospital/clinical medical record (if applicable).

Appendix B

Consent and Authorization

Oregon Health & Science University

Consent to Participate in Research

Title: Childbirth Expectations and Childbirth Experiences among Thai Pregnant women.

Principal Investigator: Nancy A. Perrin, PhD., Professor,

Co-Investigator: Kamonthip Tanglakmankhong
Telephone Number: 503-2954924 (USA), 081-6702152 (Thailand)

You are being asked to participate in a research study examining maternal perceptions of childbirth. Specifically, we are studying self-confidence, fear, expectations, and experiences for childbirth among Thai pregnant women. We are asking you to complete a set of three questionnaires before birth which should take approximately 15 minutes and complete another questionnaire after birth at post partum unit which should take approximately 5 minutes. You are asked to give me permission to access your medical record to collect information about the birth: date of birth, type of birth, baby health and baby weight. There are minimal risks to participating in the study. Perhaps some of the questions may make you think more deeply about the childbirth process. If you have any questions or concern, please be sure to discuss them with the nurse or doctor. Your willingness to participate, responses to the questionnaire or decision to not complete the questionnaires at any time will not influence the quality of care you receive. Your name or any other personal identification will be kept confidentially and will not be shared with anyone.

If you agree to participate, you will be given a copy of this document and a written summary of the research.

You may contact Kamonthip Tanglakmankhong at 503-295-4924 (USA) or 081-6702152 (Thailand) at any time you have questions about the research. You may contact the OHSU Research Integrity Office at 503-494-7887 (USA) if you have questions about your rights as a research subject or what to do if you are injured.

Your participation in this research is voluntary, and you will not be penalized or lose benefits if you refuse to participate or decide to stop. When you sign this document, it means that the researchers have described the research study to you verbally, including the above information, and that you agree to participate voluntarily.

Signature of Participant: _____ Date: _____

Signature of Witness: _____ Date: _____

มหาวิทยาลัยโอเรกอนเฮลท์แอนด์ไซน์

หนังสือยินยอมเข้าร่วมการวิจัย

ชื่อโครงการวิจัย ความคาดหวังและประสบการณ์เกี่ยวกับการคลอดบุตรของหญิงตั้งครรภ์ไทย

ชื่อหัวหน้าโครงการวิจัย ศาสตราจารย์ ดร. แนนซี่ เพอริน

ชื่อผู้ร่วมรับผิดชอบโครงการวิจัย นางสาว กมลทิพย์ ตั้งหลักมั่นคง

ท่านเป็นผู้หนึ่งที่เข้าร่วมการศึกษาเกี่ยวกับการรับรู้ของมารดาต่อการคลอดบุตร โดยเฉพาะอย่างยิ่ง ผู้วิจัยกำลังทำวิจัยเกี่ยวกับความเชื่อมั่น ความกลัว และความคาดหวังต่อประสบการณ์เกี่ยวกับการคลอดบุตร ผู้วิจัยใคร่ขอความร่วมมือจากท่านในการตอบแบบสอบถาม ในช่วงก่อนคลอด ๓ แบบสอบถาม ซึ่งอาจใช้เวลาประมาณ ๑๕ นาที และ ในช่วงหลังคลอด ๑ แบบสอบถาม ซึ่งอาจใช้เวลาประมาณ ๕ นาที การตอบแบบสอบถาม อาจทำให้ท่านคิดถึงขั้นตอนเกี่ยวกับการคลอดมากขึ้น ซึ่งหากท่านมีข้อสงสัยหรือข้อคำถามใดๆเกี่ยวกับการคลอด ท่านสามารถปรึกษาแพทย์หรือพยาบาลที่ดูแลท่านได้ การตอบแบบสอบถามจะไม่มีผลกระทบต่อการดูแลรักษาพยาบาลแต่อย่างไร ชื่อและข้อมูลส่วนตัวของท่านจะถูกเก็บเป็นความลับและจะไม่มีการเปิดเผยข้อมูลให้กับผู้อื่น ผู้วิจัยใคร่ขออนุญาตบันทึกผลการคลอดของท่านจากรายงานการคลอด ได้แก่ จำนวนครั้ง ในการคลอด วิธีการคลอด สุขภาพทารก ถ้าท่านตัดสินใจเข้าร่วมโครงการวิจัย ท่านต้องได้รับสำเนาหนังสือยินยอมเข้าร่วมการวิจัยฉบับนี้ และสรุปย่อการวิจัย

การเข้าร่วมโครงการวิจัยเป็นความสมัครใจ ท่านจะไม่มีผลกระทบใดๆหรือเสียผลประโยน์ถ้าท่านปฏิเสธหรือท่านตัดสินใจหยุดเข้าร่วมในโครงการวิจัย ท่านสามารถติดต่อผู้วิจัย นางสาว กมลทิพย์ ตั้งหลักมั่นคง โทรศัพท์ ๕๐๓ ๒๙๕๔๙๒๔ (ประเทศสหรัฐอเมริกา) หรือ ๐๘๑ ๖๗๐๒๑๕๒๖ (ประเทศไทย) ได้ทุกเวลาที่ท่านมีคำถามเกี่ยวกับการวิจัย

ถ้าท่านมีคำถามเกี่ยวกับการสิทธิของท่านในการเป็นผู้ร่วมวิจัย หรือจะทำอย่างไรหากท่านเกิดการอันตรายระหว่างโครงการวิจัย ท่านสามารถติดต่อสำนักงานจริยธรรมการวิจัย มหาวิทยาลัยโอเรกอนเฮลท์แอนด์ไซน์ที่ โทรศัพท์ ๕๐๓ ๔๙๔๗๘๘๗

เมื่อท่านเซนต์เอกสารฉบับนี้ หมายความว่าผู้วิจัยได้อธิบายการศึกษาในโครงการวิจัยนี้ด้วยคำพูด รวมทั้งข้อมูลข้างต้น และ ท่านยินดีเข้าร่วม ด้วยความสมัครใจ

ลายเซนต์ผู้เข้าร่วมโครงการวิจัย.....วันที่.....

ลายเซนต์พยาน.....วันที่.....

Appendix C

Recruitment Letter

Dear mother- to- be,

Hello and congratulations on your recent pregnancy! My name is Kamonthip Tanglakmankhong. I am a doctoral student at the School of Nursing, Oregon Health & Science University, Portland, Oregon, United States of America. I am interested in maternal and child health and currently conducting research on women's expectations and experiences about childbirth.

Serving as a participant, you may give new information which may benefit other pregnant women. Participation will involve filling a questionnaire two times which should take approximately 15 minutes before birth at Antenatal clinic and 5 minutes after birth at postpartum unit. You may, of course, withdraw from the study at any time.If you are interested, please let your nurse knows and she will introduce you to me. Thank you for your cooperation.

Kamonthip Tanglakmankhong

สวัสดีค่ะ คุณแม่,

ขอแสดงความยินดีกับการตั้งครรภ์ของท่านด้วยนะคะ ดิฉันชื่อ กมลทิพย์ ตั้งหลักมั่นคง กำลังศึกษาต่อระดับปริญญาเอก อยู่ที่คณะพยาบาลศาสตร์ มหาวิทยาลัย โอเรกอนเฮลท์แอนด์ไซน์ เมืองพอร์ทแลนด์ มลรัฐโอเรกอน ประเทศสหรัฐอเมริกา ดิฉันสนใจเกี่ยวกับการส่งเสริมสุขภาพมารดาและทารก และกำลังทำการศึกษาประสบการณ์ของผู้หญิง เกี่ยวกับ การคลอดบุตร

การเข้าร่วมในการศึกษาครั้งนี้ จะเป็นประโยชน์อย่างยิ่งแก่หญิงตั้งครรภ์ในอนาคต หากท่าน ยินดีเข้าร่วมในการศึกษาครั้งนี้ ท่านจะต้องตอบแบบสอบถาม ๒ ครั้ง ครั้งแรกที่ห้องฝากครรภ์ ซึ่งใช้เวลาประมาณ ๑๕ นาที ในการตอบ และครั้งที่๒ ที่ตึกหลังคลอด ท่านสามารถขอไม่ร่วมในการศึกษาเมื่อใดก็ได้ตามที่ต้องการ

หากท่านสนใจเข้าร่วมในการศึกษา กรุณาติดต่อพยาบาลที่ห้องฝากครรภ์ โรงพยาบาลอุดรธานี

ขอขอบพระคุณในความร่วมมือ

กมลทิพย์ ตั้งหลักมั่นคง

Appendix D

Questionnaires in English version

Instruction for Antenatal Questionnaire

We are interested in Thai pregnant women's expectations and experiences about childbirth. This packet contains questions about expectation, self-confident and fear with your upcoming childbirth. We would like you to answer these questions which should take approximately 15 minutes to complete.

There are no correct answers; we are interested in your true feelings. If you have any questions while completing the questionnaire, the researcher will be available at the clinic to answer them.

Please try to answer every question.

After completing questionnaires, please return to the researcher in a sealed envelope.

Now I would like to know some information about you

How old are you? .....yrs

What is the highest level of school you completed?

…….None ……..college

……..primary school ……..bachelor degree

……..secondary school ……..higher than bachelor degree

How many times have you given birth? ....never ,….1 time,,,,,, more than 1 time

Have you attend the childbirth class ? ..…….Yes……..No

Gestational age …….weeks

Thank you very much for your participation

Childbirth Expectations and Experiences Questionnaire Set 1

Below is a list of expectations about labor and birth. Each woman may have different thought about what will happen during childbirth. Please read each of the possible events and tell us if you think this event might happen when you have labor and birth at the hospital by placing an X that represents your answer

Do you think this event will happen during your upcoming childbirth?	**Yes**	**No**
1. I will get medication to reduce pain.	Yes	No
2. I will get medication to induce labor.	Yes	No
3. I will have special instruments for checking my baby's health.	Yes	No
4. I will have a vaginal examination for checking cervix dilatation.	Yes	No
5. I will have intravenous fluids.	Yes	No
6. I will have food and fluids withheld during labor and birth.	Yes	No
7. I will have other laboring women stay in the same room during labor.	Yes	No
8. I will have a relative by my side during labor.	Yes	No
9. I will have my husband by my side during labor.	Yes	No
10. I will be able to contact my family during labor.	Yes	No
11. I will get supportive care from nurses during labor.	Yes	No
12. I will receive information from nurses about methods of pain relief.	Yes	No
13. I will receive information from nurses about my progress of labor.	Yes	No
14. I will have my legs strapped on metal stirrups during delivery.	Yes	No
15. I will be in a private delivery room during delivery.	Yes	No
16. I will have a nurse coaching during delivery.	Yes	No
17. I will be delivered by a nurse.	Yes	No
18. I will be delivered by a doctor.	Yes	No

Do you think this event will happen during your upcoming childbirth?	**Yes**	**No**
19. I will be informed immediately when something is wrong with me or my baby.	Yes	No
20. I will be involved in decision making about my care and treatments during the delivery process.	Yes	No
21. I will be assisted with forceps or vacuum instruments when I could no longer push.	Yes	No
22. I will have an operation to deliver my baby if I have any complications.	Yes	No
23. I will have an episiotomy.	Yes	No
24. I will have anesthetic medication before the episiotomy.	Yes	No
25. Doctor will be ready to help at anytime if something is wrong with me during delivery.	Yes	No
26. Student nurses will take care of me during my labor and birth.	Yes	No
27. Nurses will speak to me politely	Yes	No
28. Nurses will treat my family politely.	Yes	No
29. Nurses will help me talk with doctor.	Yes	No
30. Nurses will contact the doctors for me if I want to consult the doctors.	Yes	No
31. Nurses will be happy to help me.	Yes	No
32. Nurses will be busy and may not have time to take care me.	Yes	No
33. Nurses will bring my baby to me immediately after birth.	Yes	No
34. Nurses will take a very good care of my baby after birth.	Yes	No
35. My baby and I will safe during labor and birth.	Yes	No
36. My husband and my family will have a chance to hold my baby after birth.	Yes	No

ID……

Chart Review Sheet

- Parity …….primiparous……multiparous
- GA …….weeks
- Date of birth…….
- Delivered by …….Obstetrician

  ……...Nurses
- Type of birth

  …….C Section …….Vaginal delivery

  …….Forceps ……..Vacuum
- Complication during labor

  .....Bleeding …….Fetal distress (irregular fetal heart rate)

  …….Prolong labor Others ……
- Baby health
  - Gender…….boy ……girl
  - APGAR score……..
  - Abnormality ……Yes ……No

  If yes, list abnormality…….…….

  Complication …….....
  - Refer to NICU……Yes ……No

- Medical intervention during labor and birth

Pain relief medication	yes	no		Anesthetic before episiotomy	yes	no
Induced medication	yes	no		Episiotomy	yes	no
Intravenous fluid	yes	no		Fetal monitor	yes	no

Instruction for postpartum questionnaire

Congratulations on the birth of your baby and thank you for completing the questionnaire at antenatal clinic. Now we would like to know about your birth experience. This questionnaire should take approximately 5 minutes to complete.

There are no correct answers; we are interested in your true feelings. If you have any questions while completing the questionnaire, the researcher will be available at the clinic to answer them.

Please try to answer every question.

After completing questionnaires, please return to the researcher in a sealed envelope.

Thank you very much for your participation

Childbirth Expectations and Experiences Questionnaire Set 2

Below is a list of events that could happen during labor and birth. Please tell us what occurred when you gave birth and how satisfied you were with each childbirth event by placing an X that represents your answer

Did this situation happen during labor and birth?	**Yes**	**No**	**How did you feel about what happened?**			
			Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
1. I got medication to reduce pain.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
2. I got medication to induce labor.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
3. I had special instruments for checking my baby's health.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
4. I had a vaginal examination for checking cervix dilatation.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
5. I had intravenous fluids.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
6. I had food and fluids withheld during labor and birth.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
7. I had other laboring women stay in the same room during labor.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
8. I had a relative by my side during labor.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
9. I had my husband by my side during labor.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
10. I was able to contact my family during labor.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
11. I got supportive care from nurses during labor.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
12. I received information from nurses about methods of pain relief.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
13. I received information from nurses about my progress of labor.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
14. I had my legs strapped on metal stirrups during delivery.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied

Did this situation happen during labor and birth?	**Yes**	**No**	**How did you feel about what happened?**			
			Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
15. I was in a private delivery room during delivery.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
16. I had a nurse coaching during delivery.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
17. I was delivered by a nurse.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
18. I was delivered by a doctor.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
19. I was informed immediately when something is wrong with me or my baby.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
20. I was involved in decision making about my care and treatments during the delivery process.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
21. I was assisted with forceps or vacuum instruments when I could no longer push.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
22. I had an operation to deliver my baby if I had any complications.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
23. I had an episiotomy.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
24. I had anesthetic medication before the episiotomy.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
25. Doctor was ready to help at any time when something was wrong with me during delivery.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
26. Student nurses took care of me during my labor and birth.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
27. Nurses spoke to me politely	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
28. Nurses treated my family politely.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
29. Nurses helped me talk with doctor.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
30. Nurses contacted the doctors for me when I wanted to consult the doctors.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied

Did this situation happen during labor and birth?	**Yes**	**No**	**How did you feel about what happened?**			
			Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
31. Nurses were happy to help me.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
32. Nurses were busy and may not have time to take care me.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
33. Nurses brought my baby to me immediately after birth.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
34. Nurses took a very good care of my baby after birth.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
35. My baby and I were safe during labor and birth.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
36. My husband and my family had a chance to hold my baby after birth.	Yes	No	Not satisfied	Low satisfied	Moderate satisfied	Very satisfied
37. Overall, I would rate my satisfaction in childbirth as…….			**Not satisfied**	**Low satisfied**	**Moderate satisfied**	**Very satisfied**

The Childbirth Self-Efficacy Inventory

ID_____

Think about how you imagine labor will be and feel when you are pushing your baby out to give birth. For each suggestion, please indicate how helpful you feel the suggestion could be in helping you cope with this labor and birth. If the full score in each item is 10, how many scores do you think this suggestion will help you? Please circle a number between 1, not at all helpful, and 10, very helpful.

	not at all helpful									helpful
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

Continue to think about how you imagine labor will be and feel when you are pushing your baby out to give birth. For each suggestion, please indicate how certain you are of your ability to use this suggestion to help you cope with this labor and birth. If the full score in each item is 10, how many scores do you think you are sure in your ability to use this suggestion? Please circle a number between 1, not at all sure, and 10, completely sure.

	Not at all sure									Completely sure
17. Relax my body.	1	2	3	4	5	6	7	8	9	10
18. Get ready for each contraction.	1	2	3	4	5	6	7	8	9	10
19. Use breathing during labor contractions.	1	2	3	4	5	6	7	8	9	10
20. Keep myself in control.	1	2	3	4	5	6	7	8	9	10
21. Think about relaxing.	1	2	3	4	5	6	7	8	9	10
22. Concentrate on an object in the room to distract myself.	1	2	3	4	5	6	7	8	9	10
23. Keep myself calm.	1	2	3	4	5	6	7	8	9	10
24. Concentrate on thinking about the baby.	1	2	3	4	5	6	7	8	9	10
25. Stay on top of each contraction.	1	2	3	4	5	6	7	8	9	10
26. Think positively.	1	2	3	4	5	6	7	8	9	10
27. Not think about the pain.	1	2	3	4	5	6	7	8	9	10
28. Tell myself that I can do it.	1	2	3	4	5	6	7	8	9	10
29. Think about others in my family.	1	2	3	4	5	6	7	8	9	10
30. Concentrate on getting through one contraction at a time.	1	2	3	4	5	6	7	8	9	10
31. Focus on the person helping me in labor.	1	2	3	4	5	6	7	8	9	10
32. Listen to encouragement from the person helping me.	1	2	3	4	5	6	7	8	9	10

CHILDBIRTH ATTITUDES QUESTIONNAIRE

The following are some common fears that pregnant women have expressed in the past. No one is expected to have them all. Some women may have none of them. Please answer as honestly as you can without consulting anyone else. If you are not sure how to rate the intensity of the fear, do not worry about it, just make a quick judgment and mark what seems about right.

Rate each fear according to the following scale:

1 = No fear; never have had that fear.

2 = Low fear; not enough to really call it fear.

3 = Moderate fear; it bothers you quite a bit, but not enough to affect your feeling of well being.

4 = High fear; it worries you a lot and affects your feeling of well being.

	No fear	Low fear	Moderate fear	High fear
1. I have fear of losing control of myself at the delivery.	1	2	3	4
2. I am really afraid of giving birth.	1	2	3	4
3. I have fear of bleeding too much during the delivery.	1	2	3	4
4. I have fear I will not be able to help during the delivery.	1	2	3	4
5. I have fear of something being wrong with the baby.	1	2	3	4
6. I have fear of painful injections.	1	2	3	4
7. I have fear of being left alone during labor.	1	2	3	4
8. I have fear of having to have a Cesarean section.	1	2	3	4
9. I have fear of being torn with the birth of the baby.	1	2	3	4
10. I have fear of the baby being injured during the delivery.	1	2	3	4
11. I have fear of painful labor contractions.	1	2	3	4
12. I have difficulty relaxing when thinking of the coming birth.	1	2	3	4
13. I have fear of the hospital environment.	1	2	3	4
14. I have fear of not getting the kind of care that I want.	1	2	3	4
15. Overall, I would rate my anxiety about childbirth as	1	2	3	4

Appendix E

Questionnaires in Thai version

ID……..

แบบสอบถามเกี่ยวกับความคาดหวังต่อการคลอดบุตร

ข้อความต่อไปนี้เป็นความคาดหวังเกี่ยวกับการเจ็บครรภ์คลอด และการคลอดบุตร ซึ่งแต่ละคนอาจคาดหวังแตกต่างกันไป กรุณาตอบคำถามว่าแต่ละเหตุการณ์เหล่านี้ท่านคาดว่าจะเกิดขึ้นกับท่านหรือไม่ โดยกากบาท(X) ในช่องที่ตรงกับคำตอบของท่าน

ท่านคาดว่าเหตุการณ์เหล่านี้จะเกิดขึ้นกับท่าน ใช่หรือไม่	ใช่	ไม่ใช่
1. ท่านจะได้รับยาลดปวดจาการเจ็บครรภ์	ใช่	ไม่ใช่
2. ท่านจะได้รับยาเร่งการเจ็บครรภ์คลอด	ใช่	ไม่ใช่
3. ท่านจะได้รับการตรวจสุขภาพด้วยเครื่องมือพิเศษ เพื่อดูการเต้นของหัวใจลูก	ใช่	ไม่ใช่
4. ท่านจะได้รับการตรวจภายในเพื่อตรวจดูการเปิดขยายของปากมดลูก	ใช่	ไม่ใช่
5. ท่านจะได้รับน้ำเกลือเข้าทางเส้นเลือด	ใช่	ไม่ใช่
6. ท่านจะต้องงดน้ำและอาหารระหว่าง การรอคลอดและการคลอด	ใช่	ไม่ใช่
7. ท่านจะได้อยู่ในห้องรอคลอดร่วมกับผู้คลอดคนอื่น	ใช่	ไม่ใช่
8. ท่านจะได้รับการดูแลโดยมีญาติ อยู่เคียงข้างระหว่าง การรอคลอด	ใช่	ไม่ใช่
9. ท่านจะได้รับการดูแลโดยมีสามี อยู่เคียงข้างระหว่าง การรอคลอด	ใช่	ไม่ใช่
10. ท่านจะสามารถติดต่อกับครอบครัวของท่านได้ ระหว่าง การรอคลอด	ใช่	ไม่ใช่
11. ท่านจะได้รับการดูแลเอาใจใส่จากพยาบาล ระหว่าง การรอคลอด	ใช่	ไม่ใช่

ท่านคาดว่าเหตุการณ์เหล่านี้จะเกิดขึ้นกับท่าน ใช่หรือไม่	ใช่	ไม่ใช่
12. ท่านจะได้ทราบข้อมูลจากพยาบาลเกี่ยวกับวิธีต่างๆในการลดหรือบรรเทาอาการเจ็บครรภ์คลอด	ใช่	ไม่ใช่
13. ท่านจะได้ทราบข้อมูลจากพยาบาลเกี่ยวกับความก้าวหน้าของการคลอด เช่น ข้อมูลการเปิดขยายของปากมดลูก	ใช่	ไม่ใช่
14. ท่านจะได้คลอดบนเตียงคลอดที่ต้องวางขา และมีสายรัดติดกับขาหยั่ง	ใช่	ไม่ใช่
15. ท่านจะได้คลอดในห้องพิเศษที่เป็นส่วนตัว	ใช่	ไม่ใช่
16. ท่านจะได้รับคำแนะนำอย่างใกล้ชิดจากพยาบาลระหว่างการคลอด	ใช่	ไม่ใช่
17. พยาบาลจะเป็นผู้ทำคลอดให้ท่าน	ใช่	ไม่ใช่
18. แพทย์จะเป็นผู้ทำคลอดให้ท่าน	ใช่	ไม่ใช่
19. ท่านจะได้รับการบอกกล่าวทันที เมื่อมีสิ่งผิดปกติเกิดขึ้นกับท่านหรือลูกในครรภ์	ใช่	ไม่ใช่
20. ท่านจะได้มีส่วนร่วมในการตัดสินใจเกี่ยวกับการดูแลรักษาของท่าน ระหว่างอยู่ในห้องคลอด	ใช่	ไม่ใช่
21 ท่านจะได้รับการช่วยเหลือ เมื่อท่านไม่มีแรงเบ่งคลอด ด้วยการใช้คีมหรือ เครื่องดูดสุญญากาศ	ใช่	ไม่ใช่
22 ท่านจะได้รับการช่วยเหลือ เมื่อท่านมีภาวะแทรกซ้อน ด้วยการผ่าตัดคลอด	ใช่	ไม่ใช่
23 ท่านจะได้รับการตัดฝีเย็บขณะคลอด	ใช่	ไม่ใช่
24 ท่านจะได้รับการฉีดยาชาก่อนตัดฝีเย็บ	ใช่	ไม่ใช่
25 แพทย์จะพร้อมช่วยเหลือท่านตลอดเวลา เมื่อมีสิ่งผิดปกติเกิดขึ้นกับท่าน ขณะอยู่ในห้องคลอด	ใช่	ไม่ใช่

ท่านคาดว่าเหตุการณ์เหล่านี้จะเกิดขึ้นกับท่าน ใช่หรือไม่	ใช่	ไม่ใช่
26 นักศึกษาพยาบาลจะดูแลท่านขณะเจ็บครรภ์คลอด และขณะคลอด	ใช่	ไม่ใช่
27 พยาบาลจะได้พูดจาด้วยความสุภาพกับท่าน	ใช่	ไม่ใช่
28 พยาบาลจะแสดงออกด้วยกริยาท่าทางที่สุภาพ กับครอบครัวหรือญาติของท่าน	ใช่	ไม่ใช่
29 พยาบาลจะเป็นสื่อกลางที่ช่วยคุยกับแพทย์ ให้ท่าน	ใช่	ไม่ใช่
30 พยาบาลจะติดต่อแพทย์ให้ท่าน เมื่อท่านต้องการ ปรึกษาแพทย์	ใช่	ไม่ใช่
31 พยาบาลยินดีที่จะช่วยเหลือท่าน	ใช่	ไม่ใช่
32 พยาบาลอาจจะยุ่งมาก จนไม่มีเวลาดูแล	ใช่	ไม่ใช่
33 พยาบาลจะนำลูกมาอยู่กับฉันทันที หลังคลอด	ใช่	ไม่ใช่
34 พยาบาลจะดูแลท่านเป็นอย่างดี	ใช่	ไม่ใช่
35 ท่านและลูกจะคลอดอย่างปลอดภัย	ใช่	ไม่ใช่
36 สามี และญาติของท่านจะมีโอกาสได้อุ้มลูกหลังจาก คลอด	ใช่	ไม่ใช่

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แบบสอบถามเกี่ยวกับประสบการณ์และความพึงพอใจต่อการคลอดบุตร

ข้อความต่อไปนี้เป็นเหตุการณ์ที่อาจเกิดขึ้นจริง ระหว่างการคลอดบุตร กรุณาตอบคำถามว่าแต่ละเหตุการณ์เหล่านี้ เกิดขึ้นกับท่านหรือไม่ และท่านรู้สึกพึงพอใจมากน้อยเพียงใดต่อเหตุการณ์เหล่านี้ โดยกากบาท(X) ในช่องที่ตรงกับคำตอบของท่าน

เหตุการณ์เหล่านี้ได้เกิดขึ้นกับท่านใช่หรือไม่	ใช่	ไม่ใช่	ท่านรู้สึกพึงพอใจมากน้อยเพียงใดต่อเหตุการณ์เหล่านี้			
1. ท่านได้รับยาลดปวดจากการเจ็บครรภ์	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
2. ท่านได้รับยาเร่งการเจ็บครรภ์คลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
3. ท่านได้รับการตรวจสุขภาพด้วยเครื่องมือพิเศษเพื่อดูการเต้นของหัวใจลูก	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
4. ท่านได้รับการตรวจภายในเพื่อตรวจดูการเปิดขยายของ ปากมดลูก	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
5. ท่านได้รับน้ำเกลือเข้าทางเส้นเลือด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
6. ท่านได้งดน้ำและอาหารระหว่างอยู่การรอคลอดและการคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
7. ท่านได้อยู่ในห้องรอคลอดร่วมกับผู้คลอดคนอื่น	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก

เหตุการณ์เหล่านี้เกิดขึ้นกับท่านหรือไม่	ใช่	ไม่ใช่	ท่านรู้สึกพึงพอใจมากน้อยเพียงใดต่อเหตุการณ์เหล่านี้			
8. ท่านได้รับการดูแลโดยมีญาติ อยู่เคียงข้างระหว่างการรอคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
9. ท่านได้รับการดูแลโดยมีสามี อยู่เคียงข้างระหว่างการรอคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
10. ท่านสามารถติดต่อกับครอบครัวของท่านได้ ระหว่างการรอคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
11. ท่านได้รับการดูแลเอาใจใส่จากพยาบาล ระหว่างการรอคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
12. ท่านได้ทราบข้อมูลจากพยาบาลเกี่ยวกับวิธีต่างๆในการลด หรือ บรรเทาอาการเจ็บครรภ์คลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
13. ท่านได้ทราบข้อมูลเกี่ยวกับความก้าวหน้าของการคลอด เช่น การเปิดขยายของปากมดลูก	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
14. ท่านได้คลอดบนเตียงคลอดที่ต้องวางขา และมีสายรัดติดกับขาหยั่ง	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
15. ท่านได้คลอดในห้องพิเศษที่เป็นส่วนตัว	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
16. ท่านได้รับคำแนะนำอย่างใกล้ชิดจากพยาบาลระหว่างการคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
17. ท่านได้คลอด โดยพยาบาลเป็นผู้ทำคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก

เหตุการณ์เหล่านี้ได้เกิดขึ้นกับท่านหรือไม่	ใช่	ไม่ใช่	ท่านรู้สึกพึงพอใจมากน้อยเพียงใดต่อเหตุการณ์เหล่านี้			
18. ท่านได้คลอด โดยแพทย์เป็นผู้ทำคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
19. ท่านได้รับการบอกกล่าวทันที เมื่อมีสิ่งผิดปกติเกิดขึ้นกับท่าน หรือลูกในครรภ์	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
20. ท่านได้มีส่วนร่วมในการตัดสินใจเกี่ยวกับการดูแลรักษาของท่าน ระหว่างอยู่ในห้องคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
21 ท่านได้รับการช่วยเหลือ เมื่อท่านไม่มีแรงเบ่งคลอดด้วยการใช้คีม หรือเครื่องดูดสุญญากาศ	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
22 ท่านได้รับการช่วยเหลือ เมื่อท่านมีภาวะแทรกซ้อนด้วยการผ่าตัดคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
23 ท่านได้รับการตัดฝีเย็บขณะคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
24 ท่านได้รับการฉีดยาชาก่อนตัดฝีเย็บ	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
25 แพทย์ได้พร้อมช่วยเหลือท่านตลอดเวลา เมื่อมีสิ่งผิดปกติเกิดขึ้นกับท่าน ขณะท่านอยู่ในห้องคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
26 นักศึกษาพยาบาลได้ดูแลท่านขณะเจ็บครรภ์คลอดและขณะคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
27 พยาบาลได้พูดจาด้วยความสุภาพกับท่าน	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก

เหตุการณ์เหล่านี้เกิดขึ้นกับท่านหรือไม่	ใช่	ไม่ใช่	ท่านรู้สึกพึงพอใจมากน้อยเพียงใดต่อเหตุการณ์เหล่านี้			
28 พยาบาลแสดงออกด้วยกริยาท่าทางที่สุภาพกับครอบครัวหรือญาติของท่าน	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
29 พยาบาลได้เป็นสื่อกลางที่ช่วยคุยกับแพทย์ ให้ท่าน	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
30 พยาบาลได้ติดต่อแพทย์ให้ท่าน เมื่อท่านต้องการปรึกษาแพทย์	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
31 พยาบาลยินดีที่จะช่วยเหลือท่าน	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
32 พยาบาลยุ่งมาก และอาจไม่มีเวลาดูแลฉัน	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
33 พยาบาลได้นำลูกมาอยู่กับฉันทันที หลังคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
34 พยาบาลได้ดูแลท่านเป็นอย่างดี	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
35 ท่านและลูกปลอดภัย จากการคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก
36 สามีและญาติของท่านได้มีโอกาสอุ้มลูกหลังคลอดขณะท่านอยู่ในห้องคลอด	ใช่	ไม่ใช่	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก

โดยรวมแล้ว ท่านพึงพอใจต่อประสบการณ์การคลอด	ไม่พอใจ	พอใจน้อย	พอใจปานกลาง	พอใจมาก

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แบบวัดความเชื่อมั่นในตนเองขณะคลอด

ตอนที่ ๑

กรุณาคิดถึงภาพเหตุการณ์และความรู้สึกว่าท่านกำลังจะคลอดลูก ท่านคิดว่า คำแนะนำแต่ละข้อต่อไปนี้ จะช่วยให้ท่านสามารถเตรียมพร้อมสำหรับการเจ็บครรภ์คลอด ได้มากน้อยเพียงใด โดยแต่ละข้อความมีคะแนนเต็ม 10 คะแนน กรุณาให้คะแนนโดยการ กากบาท (X) เพียงหนึ่งตัวเลข ระหว่าง คะแนน 1 หมายถึง ไม่ช่วยเลย จนไปถึง คะแนนเต็ม 10 หมายถึงช่วยได้มากที่สุด

ข้อความ	ไม่ช่วยเลย		ช่วยน้อย		ช่วยปานกลาง		ช่วยมาก			ช่วยมากที่สุด
	1	2	3	4	5	6	7	8	9	10
1. ผ่อนคลายทุกส่วนของร่างกาย	1	2	3	4	5	6	7	8	9	10
2. เตรียมพร้อมที่จะพบกับการเจ็บครรภ์คลอดในแต่ละครั้ง	1	2	3	4	5	6	7	8	9	10
3. หายใจเข้าออกช้าๆระหว่างที่มีการเจ็บครรภ์คลอด	1	2	3	4	5	6	7	8	9	10
4. พยายามควบคุมตนเองให้ได้	1	2	3	4	5	6	7	8	9	10
5. คิดถึงสิ่งที่ทำให้รู้สึกสบายทั้งร่างกายและจิตใจ	1	2	3	4	5	6	7	8	9	10
6. จ้องมองไปที่สิ่งใดสิ่งหนึ่งในห้องคลอดเพื่อเบี่ยงเบน ความสนใจจากความเจ็บปวด	1	2	3	4	5	6	7	8	9	10
7. ทำใจให้สงบ	1	2	3	4	5	6	7	8	9	10
8. คิดถึงแต่ลูกที่กำลังจะเกิดมา	1	2	3	4	5	6	7	8	9	10
9. ควบคุมความเจ็บปวดในแต่ละครั้งให้ได้	1	2	3	4	5	6	7	8	9	10
10. คิดถึงในแต่สิ่งที่ดีดี	1	2	3	4	5	6	7	8	9	10
11. พยายามไม่คิดถึงเรื่องความเจ็บปวด	1	2	3	4	5	6	7	8	9	10
12. บอกตัวเองว่าฉันทำได้	1	2	3	4	5	6	7	8	9	10
13. คิดถึงคนในครอบครัว	1	2	3	4	5	6	7	8	9	10
14. เพ่งความสนใจไปที่การหดรัดตัวของมดลูกแต่ละครั้ง	1	2	3	4	5	6	7	8	9	10
15. เพ่งความสนใจไปที่คนที่ช่วยเหลือฉันในห้องคลอด	1	2	3	4	5	6	7	8	9	10
16. ฟังเสียงการให้กำลังใจจากคนที่ให้ความช่วยเหลือฉัน	1	2	3	4	5	6	7	8	9	10

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ตอนที่ ๒

กรุณาคิดถึงภาพเหตุการณ์และความรู้สึกว่าท่านกำลังจะคลอดลูก ท่านมั่นใจมากน้อยเพียงใดที่จะสามารถทำตามคำแนะนำแต่ละข้อต่อไปนี้ เพื่อเตรียมความพร้อมสำหรับการเผชิญกับการเจ็บครรภ์คลอด โดยแต่ละข้อความ มีคะแนนเต็ม 10 คะแนน กรุณาให้คะแนนโดยการกากบาท (X) เพียงหนึ่งตัวเลข ระหว่างคะแนน 1 หมายถึง ไม่มั่นใจเลย ไปจนถึง คะแนนเต็ม 10 หมายถึง มั่นใจมากที่สุด

ข้อความ	ไม่มั่นใจเลย		มั่นใจเล็กน้อย		มั่นใจปานกลาง			มั่นใจมาก		มั่นใจมากที่สุด
	1	2	3	4	5	6	7	8	9	10
17. ผ่อนคลายทุกส่วนของร่างกาย	1	2	3	4	5	6	7	8	9	10
18. เตรียมพร้อมที่จะพบกับการเจ็บครรภ์คลอดในแต่ละครั้ง	1	2	3	4	5	6	7	8	9	10
19. หายใจเข้าออกช้าๆระหว่างที่มีการเจ็บครรภ์คลอด	1	2	3	4	5	6	7	8	9	10
20. พยายามควบคุมตนเองให้ได้	1	2	3	4	5	6	7	8	9	10
21. คิดถึงสิ่งที่ทำให้รู้สึกสบายทั้งร่างกายและจิตใจ	1	2	3	4	5	6	7	8	9	10
22. จ้องมองไปที่สิ่งใดสิ่งหนึ่งในห้องคลอดเพื่อเบี่ยงเบน ความสนใจจากความเจ็บปวด	1	2	3	4	5	6	7	8	9	10
23. ทำใจให้สงบ	1	2	3	4	5	6	7	8	9	10
24. คิดถึงแต่ลูกที่กำลังจะเกิดมา	1	2	3	4	5	6	7	8	9	10
25. ควบคุมความเจ็บปวดในแต่ละครั้งให้ได้	1	2	3	4	5	6	7	8	9	10
26. คิดถึงในแต่สิ่งที่ดีดี	1	2	3	4	5	6	7	8	9	10
27. พยายามไม่คิดถึงเรื่องความเจ็บปวด	1	2	3	4	5	6	7	8	9	10
28. บอกตัวเองว่าฉันทำได้	1	2	3	4	5	6	7	8	9	10
29. คิดถึงคนในครอบครัว	1	2	3	4	5	6	7	8	9	10
30. เพ่งความสนใจไปที่การหดรัดตัวของมดลูกแต่ละครั้ง	1	2	3	4	5	6	7	8	9	10
31. เพ่งความสนใจไปที่คนที่ช่วยเหลือฉันในห้องคลอด	1	2	3	4	5	6	7	8	9	10
32. ฟังเสียงการให้กำลังใจจากคนที่ให้ความช่วยเหลือฉัน	1	2	3	4	5	6	7	8	9	10

เครื่องมือวัดความกลัวต่อการคลอดบุตร

ข้อความต่อไปนี้เป็นประสบการณ์ความกลัวของหญิงตั้งครรภ์ต่อการคลอดบุตร ซึ่งแต่ละคนอาจมีความรู้สึกกลัวมากน้อ
แตกต่างกันไป กรุณาตอบตามความรู้สึกจริงที่เกิดขึ้น โดยไม่ต้องปรึกษาใคร ถ้าไม่แน่ใจว่า ท่านมีความรู้สึกกลัวมากน้อยเพียง
ไม่ต้องวิตกกังวลในคำตอบ เพียงตัดสินใจตอบอย่างรวดเร็วโดยการกากบาท (X) ลงในช่องตามความรู้สึก ณ เวลานั้นๆ

1 ไม่กลัว หมายถึง ไม่เคยมีความรู้สึกกลัวเลย
2 กลัวเล็กน้อย หมายถึง มีความรู้สึกกลัวบ้างเพียงเล็กน้อย แต่ไม่ถึงขนาดที่รบกวนท่าน
3 กลัวปานกลาง หมายถึง ความรู้สึกนั้นรบกวนท่านบ้าง แต่ไม่ถึงขนาดที่มีผลกระทบต่อสุขภาพของท่าน
4 กลัวมาก หมายถึง ความรู้สึกนั้นทำให้ท่านวิตกกังวล จนมีผลกระทบต่อสุขภาพของท่าน

ข้อความ	ไม่กลัว	กลัวเล็กน้อย	กลัวปานกลาง	กลัวมาก
1. ฉันกลัวว่าจะควบคุมตัวเองไม่ได้ เมื่อถึงเวลาคลอด	1	2	3	4
2. ฉันกลัวการคลอด	1	2	3	4
3. ฉันกลัวการตกเลือดขณะคลอด	1	2	3	4
4. ฉันกลัวว่าจะไม่สามารถคลอดบุตรได้เอง	1	2	3	4
5. ฉันกลัวว่าจะมีอะไรที่ผิดปกติเกิดขึ้นกับลูกของฉัน	1	2	3	4
6. ฉันกลัวความเจ็บปวดจากการฉีดยา	1	2	3	4
7. ฉันกลัวการถูกทอดทิ้งให้อยู่คนเดียวในขณะคลอด	1	2	3	4
8. ฉันกลัวว่าจะต้องคลอดโดยการผ่าตัด	1	2	3	4
9. ฉันกลัวการฉีกขาดของฝีเย็บขณะคลอด	1	2	3	4
10. ฉันกลัวว่าลูกจะได้รับบาดเจ็บจากการคลอด	1	2	3	4
11. ฉันกลัวความเจ็บปวดจากการหดรัดตัวของมดลูก	1	2	3	4
12. ฉันกลัวและรู้สึกไม่สบายใจ	1	2	3	4
13. ฉันกลัวบรรยากาศในห้องคลอด	1	2	3	4
14. ฉันกลัวว่าจะไม่ได้รับการดูแลอย่างที่ฉันต้องการ	1	2	3	4
15. โดยรวมแล้ว ฉันคิดว่าความกลัวเกี่ยวกับการคลอดของฉัน อยู่ในระดับ	1	2	3	4

Appendix F
Letter to Director of Udonthani Hospital
and
Udonthani Approval Letter

OHSU Oregon Health & Science University
SCHOOL OF NURSING
PORTLAND CAMPUS
3455 SW US Veterans Hospital Rd. • Portland, Oregon 97239-2941
TEL: 503-494-7100 • www.ohsu.edu/son

November 14, 2007

Dear Director of Udonthani Hospital,

I am writing this letter on behalf of Ms. Kamonthip Tanglakmankhong, who is a Ph.D student in the School of Nursing at Oregon Health & Sciences University, Portland, Oregon, U.S.A. I am serving as Ms. Kamonthip Tanglakmankhong's advisor.

The purpose of this letter is to ask for your permission to access the study site at Antenatal Clinic, Udonthani, Thailand. We plan to collect the data with pregnant women in third trimester. Our goal of the study is to evaluate the reliability and validity of the Thai version of Childbirth Self-Efficacy Inventory, Childbirth Attitude Questionnaire, Childbirth Preference Questionnaire and childbirth Expectation Questionnaire. Ethical approval will be attained from the Institution Review Board of OHSU and the clinical ethic committees of Udonthai hospital before collecting the data.

Thank you very much for considering this request.

Sincerely,

Nancy Perrin, Ph.D.
Professor and Director of the Statistical Core
Oregon Health & Sciences University
School of Nursing
3455 SW US Veterans Road,
Portland, OR 97239-2941
perrinn@ohsu.edu

Approval Letter from Udonthani Hospital Ethics Committee

Udonthani Hospital, Ministry of Public Health, Thailand has given approval to Nancy Perrin and Kamonthip Tanglakmankhong to conduct the study **"Validation of Questionnaires for Childbirth Research among Thai Pregnant Women"** after review by the Udonthani Hospital Ethics Committee. The investigators will be permitted to access the study site and collect data from pregnant women at Antenatal Clinic, Udonthani Hospital.

A Aeiwattanapan. MD.
Signature Director Date 20 พ.ย. 2550

Director of Udonthani Hospital.
Printed Name

Udonthani Hospital.
Address

042-245556 (THAILAND)
Phone

หนังสือแสดงความยินยอมหรืออนุญาต

จากคณะกรรมการด้านจริยธรรมในการทำวิจัยโรงพยาบาลศูนย์อุดรธานี

หนังสือฉบับนี้ให้ไว้เพื่อแสดงว่า **โรงพยาบาลศูนย์อุดรธานี สังกัดกระทรวงสาธารณสุข ประเทศไทย** อนุญาตให้ศาสตราจารย์ ดร. แนนซี่ เพอริน และ นางสาว กมลทิพย์ ตั้งหลักมั่นคง ทำการวิจัย เรื่อง การศึกษาความเที่ยงตรงของแบบสอบถามการวิจัยเกี่ยวกับการคลอดบุตรของหญิงตั้งครรภ์ไทย หลังจากได้รับการพิจารณารับรองจากคณะกรรมการด้านจริยธรรมในการทำวิจัย ผู้วิจัยจะได้รับอนุญาตให้เก็บข้อมูลจากหญิงตั้งครรภ์ ที่แผนกฝากครรภ์โรงพยาบาลศูนย์อุดรธานี

ลายเซนต์ผู้อนุญาต วันที่ 20 พ.ย. 2550

ผู้อำนวยการโรงพยาบาลศูนย์อุดรธานี

ตำแหน่ง

โรงพยาบาลศูนย์อุดรธานี

ที่อยู่

042-245555

โทรศัพท์

OHSU Oregon Health & Science University
SCHOOL OF NURSING
PORTLAND CAMPUS
3455 SW US Veterans Hospital Rd. • Portland, Oregon 97239-2941
TEL: 503 494-7100 • www.ohsu.edu/son

October 30, 2008

Dear Director of Udonthani Hospital,

I am writing this letter on behalf of Ms. Kamonthip Tanglakmankhong , who is a PhD student in the School of Nursing at Oregon Health & Science University, Portland, Oregon, U.S.A. I am serving as Ms. Kamonthip Tanglakmankhong's advisor.

The purpose of this letter is to ask for your permission to access the study site at Antenatal clinic and postpartum units, Udonthani, Thailand. We plan to collect data with pregnant women in their third trimester and during the postpartum period. Our goals of the study are to determine the degree to which women's expectations about childbirth measured in the third trimester are met during childbirth and to examine the ability of the multiple factors—the match between expectations and experiences about childbirth, self-efficacy, fear, and other factors—to predict satisfaction with childbirth experiences. Ethical approval will be attained from the Institution Review Board of OHSU and the clinical ethic committees of Udonthani hospital before collecting the data.

Thank you very much for considering this request.

Sincerely,

Nancy Perrin, PhD.
Professor and Director of Statistical Core
Oregon Health & Science University
School of Nursing
3455 SW US Veteran Road,
Portland, OR 97239-2941
perrinn@ohsu.edu

Approval Letter from Udonthani Hospital Ethics Committee

Udonthani Hospital, Ministry of Public Health, Thailand has given approval to Dr.Nancy Perrin and Kamonthip Tanglakmankhong to conduct the study **"Childbirth Expectations and Childbirth Experiences among Thai Pregnant Women"** after review by the Udonthani Hospital Ethics Committee. The investigators will be permitted to access the study site and collect the data from medical record and pregnant women at antenatal clinic, labor unit, and postpartum units, Udonthani Hospital, Thailand.

Signature Director Date 18 November 2008.

Dr.Pichart Dolchalermyuthana

Director of Udonthani Hospital

Printed Name

Udonthani Hospital

Address

042-245555 (THAILAND)

Phone

หนังสือแสดงความยินยอม หรืออนุญาต
จากคณะกรรมการจริยธรรมการวิจัยในมนุษย์ โรงพยาบาลอุดรธานี

หนังสือฉบับนี้ให้ไว้เพื่อแสดงว่า โรงพยาบาลอุดรธานี สังกัดกระทรวงสาธารณสุข ประเทศไทย อนุญาตให้ ศาสตราจารย์ ดอกเตอร์ แนนซี่ เพอริน และนางสาวกมลทิพย์ ตั้งหลักมั่นคง ทำการศึกษาเรื่อง ความคาดหวังและประสบการณ์ในการคลอดบุตรของหญิงตั้งครรภ์ไทย หลังจากได้รับการพิจารณารับรอง จากคณะกรรมการจริยธรรมการวิจัยในมนุษย์ โรงพยาบาลอุดรธานี ผู้วิจัยจะได้รับอนุญาตให้เก็บข้อมูล จาก รายงานทะเบียนการคลอด ที่แผนกห้องคลอดและจากหญิงตั้งครรภ์ ที่แผนกฝากครรภ์และแผนกหลังคลอด

ลงชื่อ ..... (นายพิชาติ คลเฉลิมยุทธนา) วันที่ 18 พฤศจิกายน 2557
ผู้อำนวยการโรงพยาบาลอุดรธานี

ตำแหน่ง ผู้อำนวยการโรงพยาบาลอุดรธานี

ที่อยู่ โรงพยาบาลอุดรธานี

โทรศัพท์ 042-245555

Appendix G
Individual Investigator Agreement

OHSU Research Integrity Office, 3181 SW Sam Jackson Park Road, Mail code L106-RI,
Portland, OR 97239-3098 Phone: 503-494-7887 ◆ Fax: 503-494-5081

OREGON HEALTH AND SCIENCE UNIVERSITY (OHSU)
INSTITUTIONAL REVIEW BOARD - INDIVIDUAL INVESTIGATOR AGREEMENT

Application for Individual Investigator to be covered by OHSU FWA #00000161

Description of Research:

Name of OHSU Investigator: **Dr. Nancy Perrin**
Title of Protocol: **Childbirth Expectations and Childbirth Experiences among Thai pregnant women**
OHSU IRB Number: **IRB00004917**
Description of Research: **Longitudinal prospective study, quantitative study**

Individual Investigator's Name: Mrs. Daruneе Tongthaavat **Degrees:** Master Degree of Public Admin MPA
Title: Supervisor of Obstetrics and Gynaecology Nursing
Address: Udonthani Hospital Thailand

Phone: 6642245555 - 1354 **E-Mail** patchara_ud@yahoo.com

Definitions of Collaborating Individual Investigators

1. A collaborating **independent** investigator is:
   a. not otherwise an employee or agent of OHSU;
   b. conducting collaborative research activities outside the facilities of OHSU; and
   c. not acting as an employee of **any** institution with respect to his or her involvement in the research being conducted by OHSU.
2. A collaborating **institutional** investigator is:
   a. not otherwise an employee or agent of OHSU;
   b. conducting collaborative research activities outside the facilities of OHSU;
   c. acting as an employee or agent of a non-assured institution with respect to his or her involvement in the research being conducted by OHSU; and
   d. employed by, or acting as an agent of, a non-assured institution that does not routinely conduct human subjects research.

OHRP will permit an assured institution to extend its FWA to cover a collaborating <u>independent</u> or <u>institutional</u> individual investigator provided all of the following conditions are satisfied:

(1) The above-named Individual Investigator has reviewed: 1) *The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research* (or other internationally recognized equivalent; see section B.1. of the Terms of the Federalwide Assurance (FWA) for International (Non-U.S.) Institutions); 2) the U.S. Department of Health and Human Services (HHS) regulations for the protection of human subjects at 45 CFR part 46 (or other procedural standards; see section B.3. of the Terms of the FWA for International (Non-U.S.) Institutions); 3) the FWA and applicable Terms of the FWA for the institution referenced above; and 4) the relevant institutional policies and procedures for the protection of human subjects.

(2) The Investigator understands and hereby accepts the responsibility to comply with the standards and requirements stipulated in the above documents and to protect the rights and welfare of human subjects involved in research conducted under this Agreement.

(3) The Investigator will comply with all other applicable federal, international, state, and local laws, regulations, and policies that may provide additional protection for human subjects participating in research conducted under this agreement.

(4) The Investigator will abide by all determinations of the OHSU Institutional Review Board (IRB) designated under the above FWA and will accept the final authority and decisions of the IRB, including but not limited to directives to terminate participation in designated research activities.

(5) The Investigator will complete any educational training required by the Institution and/or the IRB prior to initiating research covered under this Agreement.

(6) The Investigator will report promptly to the IRB any proposed changes in the research conducted under this Agreement. The investigator will not initiate changes in the research without prior IRB review and approval, except where necessary to eliminate apparent immediate hazards to subjects.

(7) The Investigator will report immediately to the IRB any unanticipated problems involving risks to subjects or others in research covered under this Agreement.

(8) The Investigator, when responsible for enrolling subjects, will obtain, document, and maintain records of informed consent for each such subject or each subject's legally authorized representative as required under HHS regulations at 45 CFR part 46 (or any other international or national procedural standards selected on the FWA for the institution referenced above) and stipulated by the IRB.

(9) The Investigator acknowledges and agrees to cooperate in the IRB's responsibility for initial and continuing review, record keeping, reporting, and certification for the research referenced above. The Investigator will provide all information requested by the IRB in a timely fashion.

(10) The Investigator will not enroll subjects in research under this Agreement prior to its review and approval by the IRB.

(11) Emergency medical care may be delivered without IRB review and approval to the extent permitted under applicable federal regulations and state law.

(12) This Agreement does not preclude the Investigator from taking part in research not covered by this Agreement.

(13) The Investigator acknowledges that he/she is primarily responsible for safeguarding the rights and welfare of each research subject, and that the subject's rights and welfare must take precedence over the goals and requirements of the research.

Investigator Signature: Daruneo Tongthaavat Date 11 Dec 2008.

Name: Daruneo Tongthaavat.
(*Last*) (*First*) (*Middle Initial*)

Signature of FWA Institutional Official (or Designee): _____ Date _____

Name: _____
(*Last*) (*First*) (*Middle Initial*)

Institutional Title: _____

Oregon Health and Science University
Office of Research Integrity
3181 SW Sam Jackson Park Rd., MailCode L106RI
Portland, Oregon 97239-3098
Phone: (503) 494-7887 Fax: (503) 494-7787

Appendix H
Waiver of Authorization

WAIVER OF AUTHORIZATION

Certification for Use and Disclosure of Protected Health Information for Research Requesting A Waiver of Authorization

IRB#: _____
Study Title: Childbith Expectations and Childbirth Experiences among Thai Pregnant Women

1. Name(s) of Investigator(s): / Department(s) of Investigator(s):
   - Nancy Perrin — School of Nursing
   - Kamonthip Tanglakmankhong — School of Nursing

2. Location and Brief Description of the Protected Health Information
   - ☐ OHSU Clinical Records
   - ☐ OHSU Research Records
   - ☐ OHSU Other Records (specify):
   - ☐ Oregon Health Division (specify):
   - ☐ Emergency Medical Svs (specify):
   - ☒ Other (specify): Response to Questioannaires, Antenatal Clinic and Postpartum Units, Udonthani Hopital, Thailand

3. The investigator(s) listed in #1 above, and any others who may be added, with IRB approval, at a later date, seeks the use or disclosure of Protected Health Information (PHI) located at the sites indicated in #2, (check one):
   - ☐ Solely to Review PHI to prepare a research protocol or for similar purposes preparatory to research
     (The investigator will not remove any PHI from OHSU in the course of the review.)
   - ☒ To use or disclose existing PHI for other research purposes and is requesting a waiver of consent and authorization

4. How many individual patient records will you access for this protocol: 200

5. State how you will identify protected health information in your research records? *(i.e.: name of subjects, coded identifier…)*
   Coded with a unique identifier

6. Will you be sharing PHI with anyone outside of OHSU? ☐ Yes ☒ No
   If yes, what PHI will be shared and how will it be identified? *(i.e. name of subjects, coded identifiers...)*

   [Note: If the identifiable health information above is shared outside of OHSU, additional documentation may be necessary to account for the disclosure(s). Furthermore, the sharing of protected health information outside of OHSU may require the outside party to comply with federal requirements (HIPAA).]

7. Will the protected health information you access and record include any of the following elements (check all that apply)?

- ☐ Patient/Subject Names
- ☐ Postal address information, other than town or city, State and zip code
- ☐ Telephone numbers
- ☐ Fax numbers
- ☐ Electronic mail addresses
- ☐ Social Security Numbers
- ☐ Medical record numbers
- ☐ Health plan beneficiary numbers
- ☐ Account numbers
- ☐ Certificate/license numbers
- ☐ Vehicle identifiers and serial numbers, including license plate numbers
- ☐ Device identifiers and serial numbers
- ☐ Web Universal Resource Locators (URLs)
- ☐ Internet Protocol (IP) address numbers
- ☐ Biometric identifiers, including finger and voice prints
- ☐ Full face photographic images and any comparable images
- ☒ None of the above

8. State how the PHI will be protected from improper use and disclosure: _____
All the data collection forms will use coded ID. A master list of subject's' names and corresponding ID will be kept in a separate locked file cabinet st delivery units, Udonthani Hopital

9. When will you destroy the protected health information? *(Be specific, state a date or event, such as following data analysis, following publication)*
The PHI will be destroyed following publication

In signing this form, the investigator warrants that he/she will protect the protected health information accessed as described, cannot practicably conduct the research without a waiver of consent and authorization, and cannot practicably conduct the research without access to and use of the PHI.

Printed Name: Nancy Perrin

Signature: Nancy Perrin

Date: 11-11-08

OFFICE USE ONLY

Chair Signature: _____

Date: _____

LDS s DUA
LDS c DUA
>50/not LDS
<50/not LDS

Appendix I

Proposed Project Questionnaire (PPQ)

PPQ#_____

PROPOSED PROJECT QUESTIONNAIRE (PPQ) – PLEASE TYPE

Oregon Health & Science University Research Development and Administration (RDA)

This form must accompany all ☐ grant/contract applications and new protocols submitted for review by ☒ IRB or ☐ IACUC.

GENERAL INFORMATION

Principal Investigator (Last name, First name, Degrees)	**Telephone Number**	**Mail Code**	**Email Address**	**NIH Commons UserID**
Perrin, Nancy, PhD.	503-335-6336	SON-ORDS	perrinn@ohsu.edu	
Contact for questions during proposal review process (Last name, First name) Tanglakmankhong, Kamonthip	**Telephone Number** 503-810-3058	**Mail Code** SON	**Email Address** tanglakm@ohsu.edu	

School/Unit: School of Nursing **Department:** ORDS **Division:**

Award Owning Org Name (Name of the org that the Award will be assigned to and that will receive F&A credit unless otherwise specified below):
Please see the OHSU Project-Owning Org Finder Tool.
unfunded

Will F&A be shared by more than one department or unit? * If yes, indicate agreement by having each department/unit head and each internal project PI sign this PPQ. Also include an internal budget showing the distribution of funds requested. ☐ Yes* ☒ No

Project Title (240 characters maximum. Same as project title listed in grant or contract.)
Childbirth Expectations and Childbirth Experiences among Thai Pregnant Women.

Project Short Title (30 characters maximum. Will be displayed in OGA. Must be unique for each OGA Project under an OGA Award)
Thai Birth Experiences

Award Short Title (30 characters maximum. Will be displayed in OGA.)

Project Dates	Initial Budget Period (Next if Non-Competing)	From: _____	Thru: _____
(N/A for industry contracts)	Entire Proposed Project Period	From: 12/11/2008	Thru: 12/9/2010

Keywords (Please provide 3-5 keywords): childbirth expectation experience Thailand pregnant woman

Applicant Organization
☒ OHSU ☐ Other*
*If Other, please specify pass-through organization that will issue a subcontract to OHSU: _____

Sponsor: none
(Example: NIH, American Heart Association, Acme Co.)

Sponsor Deadline: _____

Clinical Research Organization (CRO) (If applicable for an industry sponsored clinical drug / device investigation): N/A
See Clinical Research Organization definition.

Funding Opportunity Number, Request for Proposal (RFP) #, Request for Application (RFA) #, Program Announcement (PA) #, or URL address for special instructions, if applicable: N/A

ACTIVITY AND F&A RATE INFORMATION

Does the funding agency have a published policy requiring the use of an F&A rate that differs from OHSU's federally negotiated rate (See OHSU's F&A Cost Rates)**?** * If yes, please attach the published rate and policy of the funding agency. This does not apply to industry sponsors. ☐ Yes* ☐ No
Funding Agency Rate * _____

Primary location (Building Name) where the work is being performed (See the OHSU Building List)**:** SON
% of work performed at this location: 50% off campus (data collection), 50% SON (data analysis)
Indicate 'Off-Campus' if the work is being performed at a non-OHSU facility.

Is the research primarily Basic or Applied? See Basic/Applied Research Definitions. If the project is not research, select N/A
Please select one: ☐ Basic ☒ Applied ☐ N/A

TYPE OF FUNDING INFORMATION

Funding Mechanism *Click Here to Select Funding Mechanism* * If Other, please specify: _____
If a Program Development Account (PDA) is funding this project, please specify the PDA account number: _____

PPQ#_____

Grant/Contract Type *Check all that apply*

☐ New – new project not previously funded by this sponsor

☐ Resubmission – revised or amended version of application not funded

☐ Competing Renewal – competitive application for funded project Sponsor Grant# _____

☐ Amendment/Supplement – request for additional funds Sponsor Grant# _____ *(if applicable)*

☐ Non-Competing Renewal * – renewal of a funded project (i.e., NIH progress report) Sponsor Grant# _____

** If this project involves humans and/or animals, please indicate applicable IRB Protocol #(s) _____ or IACUC Protocol #(s) _____*

☐ NIH eSNAP *

** If this project involves humans and/or animals, please indicate applicable IRB Protocol #(s) _____ or IACUC Protocol #(s) _____*

COMPLIANCE QUESTIONS

1. Will human subjects/tissues/data be used in the project? **a.** From the start of the award? (If no, see Preaward Process for Proposals Involving Human Subjects at a Future Time.) **b.** Will the award fund core research or educational resources to be used by multiple independent human research projects (i.e., GCRC, OCI infrastructure, etc.)? All projects involving human subjects/tissues/data must be submitted to and approved by the IRB prior to beginning work on new projects or modifications to existing protocols.	☒ Yes ☐ No ☒ Yes ☐ No ☐ Yes ☒ No
2. Will animals be used in the project? **a.** * If yes, will non-human primates be used in the project? All projects involving animals must be submitted to and approved by the IACUC prior to beginning work on new projects or modifications to existing protocols.	☐ Yes* ☒ No ☐ Yes ☐ No
3. If this study involves humans or animals, did OHSU personnel design/develop the study protocol? The answer to this question will help determine how to handle the intellectual property terms of the proposal, determine appropriate IRB fees for the study, and allow tracking of this information for reporting and management purposes.	☒ Yes ☐ No ☐ N/A
4. Will this project involve the use of non-recombinant infectious agents or certain biologically-derived toxins (including select agents and infectious proteins, cells, viruses, bacteria, etc.)? See Definition. * If yes, complete the Infectious Agent/Toxin Questionnaire and submit it with this PPQ. **-OR-** Approved IBC registration #: _____	☐ Yes* ☒ No
5. Will this project involve the use of recombinant DNA (rDNA, includes all recombinant plasmids/vectors/viruses)? * If yes, complete the Initial rDNA Research Classification Form and submit it with this PPQ. **-OR-** Approved IBC registration # is: _____ **-OR-** This project was previously determined to be exempt and no changes are proposed that will affect the exempt status ☐	☐ Yes* ☒ No

ADMINISTRATIVE QUESTIONS

6. Does this application or proposal include committed cost-sharing/matching (i.e., is effort being committed without requesting that sponsor support salary at the same level? Are other resources, like new equipment or supplies, being committed without a budget request to support them?) *Does not apply to industry sponsors.* See the OHSU Cost Sharing Procedure. * If yes, see the Department Award Checklist (DAC) provided by RGC for instructions for awards containing cost-sharing. If the cost sharing is from multiple departments, please complete a Cost-Sharing Agreement Form for each Department committing resources and submit with PPQ. If the cost sharing is with the VA, the Cost Sharing Agreement Form should be signed by the appropriate VA clinical service chief and submitted with the PPQ. *(Does not apply to internally funded projects; e.g., Bio-Science Innovation.)*	☐ Yes* ☒ No ☐ N/A
7. Do any of the personnel listed on this project who have paid or unpaid appointments at OHSU also have paid VA appointments? * If yes, please provide the most recent copy of the memorandum of understanding (MOU), dated within one year. The MOU is not required if the project is industry-sponsored. Note that if this project is funded, an updated MOU that accounts for effort on this project will be required at time of award. If any persons listed on this project have unpaid OHSU appointments and paid VA appointments, please be sure to complete the VA cost-sharing requirements referenced in Question 6 above.	☐ Yes* ☒ No
8. Does this project involve Portland Veterans Affairs Medical Center (PVAMC) resources? * If yes, please have this PPQ signed by the VA ACOS/R&D (Associate Chief of Staff for Research & Development) and prepare a VA PPQ for submission with the OHSU PPQ. In certain cases, the Research Service at the PVAMC will need to obtain the approval of the VA clinical service chief prior to VA signature on the OHSU PPQ. If this proposal includes research related expenses that will be incurred by the VA, you will need to complete a VA Administrative Review prior to VA signature of the OHSU PPQ. Non-competing renewals do NOT require a VA PPQ or VA Administrative Review. Please check all the following VA resources that apply: ☐ VA Space If checked, please indicate the VA Building Name: *Click Here to Select Building* ☐ VA Equipment ☐ VA patients seen at PVAMC	☐ Yes* ☒ No

PPQ#_____

9. Is OHSU to subcontract part of the work? * If yes, please include approved administrative materials for all proposed subcontractor institutions. Subcontract materials must be signed off in advance by authorized officials of the subcontract organizations. See the List of Required Subcontract Administrative Materials. *(Does not apply if sponsor is industry.)*	☐ Yes* ☒ No
10. If you are applying to a private foundation, have you submitted an OHSU Foundation Clearance Request Form? If you are applying to a private foundation for funding, please complete an OHSU Foundation Clearance Request Form and email it to rosenbra@ohsu.edu at the OHSU Foundation prior to submitting your application to RDA. The OHSU Foundation clearance process allows the university to ensure the expectations and limited submission policies of foundations are upheld.	☐ Yes ☐ No ☒ N/A

PPQ#_____

11. Which of the following University Shared Resources **has been included in your research plan?** *(please select all that apply)*

☐ Advanced Computing - Dir. Gliessman	☐ DNA Microarrays – Dir. Harrington/Searles	☐ Confocal and Deconvolution Microscopy – Dir. Keller
☐ Bioanalytical/Pharmacokinetics - Dir. Koop	☐ Histopathology – Dir. Corless	☐ Proteomics – Dir. David
☐ Biostatistics - Dir. Mori	☐ Oligonucleotide Synthesis – Dir. Keller	☐ Transgenic Mouse Models – Dir. Low
☐ Biomedical Informatics - Dir. Logan	☐ DNA Sequence Analysis – Dir. Keller	☒ None of the above

APPROVALS & CERTIFICATIONS

All signatures below are required prior to institutional approval of the proposal.

As the PI of this project, I certify that the information submitted within the application is true, complete, and accurate to the best of my knowledge. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. I agree to accept responsibility for the scientific conduct of the project and, if a grant or contract is awarded as a result of this proposal, to comply with the terms and conditions of the award, including providing required progress reports. I understand that I am responsible for ensuring that the project is conducted in full observance of the financial, compliance, and administrative requirements described in the OHSU Roles and Responsibilities in Research document.

PI / Project Director, Date
Name: Nancy Perrin, 10/30/2008

The signatures of the Division Head, Department Chair and Unit Dean/Director indicate that:

- the proposed scientific work is appropriate;
- space and/or resources are, or will be, available;
- budgeted salaries and effort levels are appropriate for the personnel named in the application;
- the budget proposed is sufficient to cover the costs incurred in the study,
- and that roles and responsibilities assigned to the Division Head, Department Chair and Unit Dean/Director as described in the OHSU Roles and Responsibilities in Research document will be carried out or appropriately delegated.
- If the project involves resources (faculty, staff, equipment, space) from more than one OHSU Department/School/Unit, each Department Chair/Dean/Director should review the proposal and approve it by signing below.

The signature of the VA Research Service does not represent institutional approval. It simply indicates that the VA Research Service is aware of the proposal and the VA review process has commenced. The work cannot begin at the PVAMC without the approval of the R&D Committee.

Note: All staff with direct involvement in the design and/or conduct of the project (including, but not limited to, the principal investigator, co-investigators, research assistants/coordinators, and collaborators) must:

- Complete OHSU's Responsible Conduct of Research (RCR) Education
- Have a current OHSU Conflict of Interest in Research Disclosure form on file
- See Requirements for Investigators Outside OHSU

Division Head, Date Name:	Department Chair, Date Name:	Dean / Director, Date Name:
Division Head, Date Name: *(if appropriate)*	Department Chair, Date Name: *(if appropriate)*	Dean / Director, Date Name: Judith Baggs 11/1/08 *(if appropriate)*
VA ACOS/R&D, Date Name:	SON Advisor, Date Name: Nancy Perrin, 10/30/2008 *(if PI is SON student)*	*Other:*

Appendix J

Translator's Resume

Translator's resume

Asst. Prof. Suwanna Tantayanusorn

Position : Assistant Professor **Level :** 8

Chiang Mai University, Thailand

Degree :	**Institute :**
B.Ed (English)	Chiang Mai University, Thailand
Ed.s (English)	University of South Alabama, U.S.A.
M.Ed (English)	University of South Alabama, U.S.A.
M.A (English)	University of South Alabama, U.S.A.

Speciality :
English

Appendix K
List of Content Experts

Translators from English to Thai for CBSEI and CAQ

Name	Position	Education	Specialty
Dr. Nitaya Sinsuksai	Associate Professor, Mahidol University, Thailand	RN, PhD.(nursing), University of Texas at Austin, USA	Midwifery nursing
Ms. Kamonthip Tanglakmankhong	PhD. Student,	RN, Studying PhD. (nursing), OHSU,USA	Midwifery nursing

Translators from Thai to English for CBSEI and CAQ

Name	Position	Education	Specialty
Ms. Suwanna Tontayanusorn	Associate Professor, Chiangmai University, Thailand	Master of Education (English), Education specialist (Teaching) and M.A. (English), University of South Alabama, Mobile, Alabama	Teaching English
Ms. Kopphorn Maneerat	Instructor, Chiangmai University, Thailand	B.A.(English, First class Honors), Chiangmai University,Thailand	Teaching English

Validators for Childbirth Self-Efficacy Inventory

Name	Position	Education	Specialty
1. Dr. Wanna Phahuwatanakorn	Lecturer, Mahidol University, Thailand	RN, D.N.Sc.	Midwifery, Maternal-child nursing
2. Dr. Nantawon Suwonnaroop	Assistant Professor, Mahidol University	RN, Ph.D. (Nursing)	Community Health Nursing
3. Dr. Tassanee Prasopkittikun	Assistant Professor Mahidol University	RN, Ph.D.(Nursing)	Pediatric Nursing
4. Dr. Yuwadee Wattananon	Associate Professor, Mahidol University	RN, Ph.D. (Education)	Midwifery, Maternal-child nursing
5. Dr. Yaowalak Serisathien	Assistant Professor, Mahidol University	RN, D.N.S.	Midwifery, Maternal-child nursing
6. Ms. Noppawan Piased	Assistant Professor, Mahidol University	RN, Ph.D.(Nursing)	Family Nursing, Primary Care
7. Ms. Siriwan Santad	Assistant Professor, Mahidol University	RN,M.Sc.(Public health nursing)	Midwifery, Maternal-child nursing

Validators for Childbirth Attitudes Questionnaire

Name	Position	Education	Specialty
1. Dr. Wanna Phahuwatanakorn	Lecturer, Mahidol University	RN, D.N.Sc.	Midwifery, Maternal-child nursing
2. Ms.Wachira Wanasatit	Assistant Professor, Mahidol University	RN, M.Sc. (Nutrition)	Midwifery, Maternal-child nursing
3. Dr. Yuwadee Wattananon	Associate Professor, Mahidol University	RN, Ph.D. (Education)	Midwifery, Maternal-child nursing
4. Dr. Yaowalak Serisathien	Assistant Professor, Mahidol University	D.N.S.	Midwifery, Maternal-child nursing
5. Ms. Siriwan Santad	Assistant Professor, Mahidol University	RN, M.S. (Public health)	Midwifery, Maternal-child nursing

Validators for Childbirth Expectation & Experiences Questionnaires

Name	Position	Education	Specialty
1. Mrs. Petchara Tongphao	Lecturer, BCN, Udonthani*	RN, MNS	Midwifery, Maternal-child nursing
2. Ms. Wanlapa Sriboonpimsuay	Lecturer, BCN, Udonthani*	RN, MNS	Midwifery, Maternal-child nursing
3. Mrs. Chaweewan Sridawong	Lecturer, BCN, Udonthani*	RN, MNS	Midwifery, Maternal-child nursing
4. Mrs. Phanawan Senawong	Lecturer, BCN, Udonthani*	RN, MNS	Midwifery, Maternal-child nursing
5. Ms. Jittanant Srisuwan	Lecturer, BCN, Udonthani*	RN, MNS	Midwifery, Maternal-child nursing
6. Mrs. Pratumma Kangwantrakul	Nurse –midwife, Udonthani hospital	RN, MA	Midwifery
7. Mrs. Natchapat Prommin	Nurse –midwife, Udonthani hospital	RN, MNS	Midwifery
8. Mrs. Orrathai Jaikwang	Nurse –midwife, Udonthani hospital	RN, MNS	Midwifery
9. Mrs. Pornthip Promsakha na Sakolnakorn	Nurse –midwife, Udonthani hospital	RN	Midwifery
10. Mrs. Sudaporn Sutthipantrakul	Nurse –midwife, Udonthani hospital	RN	Maternal-child nursing
11. Mrs. Supraparb Panurak	Nurse –midwife, Udonthani hospital	RN	Maternal-child nursing

*BCN, Udonthani = Boromarajonani College of Nursing, Udonthani, Thailand

Appendix L

Content Validity Questionnaires

Content Validity
การทดสอบความเที่ยงตรงเชิงเนื้อหา

Date: _____ Validator name: _____

Instructions

The Childbirth Expectation Questionnaire (CEQ) is a self-report measure of expectations about labor and birth among Thai pregnant women. The CEQ is measured based on women's individual knowledge about what they think will happen during their labor and birth. The Items were constructed using phrases taken from the literature review in qualitative studies about childbirth experiences in Thailand, comments from 3 Thai nurse- midwife instructors, and the comments from the pilot study with 150 pregnant women at the antenatal clinics at Udonthani Hospital, Thailand during January 2008.

Since you have experience with caring for childbearing women, you are asked to read the questionnaire items and determine if each item is relevant to the childbirth experience in Thailand. In addition, we would like to know if we have missed any important aspects of labor and birth.

คำแนะนำ

แบบสอบถามความคาดหวังต่อการคลอดบุตร เป็น แบบประเมินตนเองเกี่ยวกับความคาดหวังต่อการเจ็บครรภ์ และการคลอดของหญิงตั้งครรภ์ แบบสอบถามประเมินจากพื้นฐานความรู้ของหญิงตั้งครรภ์แต่ละคน ต่อสิ่งที่คิดว่าจะเกิดขึ้นระหว่างการเจ็บครรภ์ และการคลอด ข้อความของแบบสอบถามได้มาจากการทบทวนวรรณกรรมงานวิจัยเชิงคุณภาพเกี่ยวกับ ประสบการณ์การคลอดของผู้หญิงในประเทศไทย ข้อเสนอแนะของอาจารย์พยาบาลผดุงครรภ์ไทย ๓ คน และจากการศึกษานำร่องกับหญิงตั้งครรภ์ ๑๕๐ คน ที่แผนกฝากครรภ์ โรงพยาบาลอุดรธานี ระหว่างเดือนมกราคม ๒๕๕๑

เนื่องด้วยท่านเป็นผู้มีประสบการณ์ในการดูแลผู้คลอด จึงใคร่ขอความกรุณาให้ท่านอ่านข้อความในแบบสอบถาม ซึ่งจะใช้ถามหญิงตั้งครรภ์ โดยประเมินว่าข้อความเหล่านี้ เหมาะสมและเกี่ยวข้องกับประสบการณ์การคลอดในประเทศไทยหรือไม่ และกรุณาเสนอแนะ หากท่านคิดว่ายังมีความคาดหวังอื่นที่สำคัญในการคลอดบุตรที่ผู้วิจัยไม่ได้กล่าวถึง

แบบสอบถาม ความคาดหวังต่อการคลอดบุตร

(The Childbirth Expectation Questionnaire)

Please respond to each question below for each item. Space is provided for your suggestions for improvement of each item.

Questionnaire Instruction คำแนะนำ	Below is a list of expectations about labor and birth. Each woman may have different thought about what will happen during childbirth. Please read each of the possible events and tell us if you think this might happen when you deliver your baby by placing an X that represents your answer. ข้อความต่อไปนี้ เป็นความคาดหวังที่เกี่ยวข้องกับการเจ็บครรภ์และการคลอด ซึ่งแต่ละคนอาจมีความคิดเกี่ยวกับสิ่งที่จะเกิดขึ้นในระหว่างการคลอดบุตรแตกต่างกันไป กรุณาอ่านข้อความต่อไปนี้ และตอบตามความคิดของท่านว่าเหตุการณ์นี้น่าจะเกิดขึ้นหรือไม่ ในระหว่างการคลอดที่กำลังจะมาถึงของท่าน โดยกาเครื่องหมาย กากบาท (X) ที่คำตอบของท่าน
Response Format รูปแบบของการตอบ	Do you think this event will happen during your upcoming childbirth? Yes / No ท่านคิดว่าเหตุการณ์นี้จะเกิดขึ้นหรือไม่ ในระหว่างการคลอด? เกิดขึ้น ไม่เกิดขึ้น

1. คำแนะนำเหมาะสมที่จะใช้กับหญิงตั้งครรภ์ไทยหรือไม่ เหมาะสม ไม่เหมาะสม

ข้อเสนอแนะ:

2. รูปแบบของการตอบ เหมาะสมที่จะใช้กับหญิงตั้งครรภ์ไทยหรือไม่ เหมาะสม ไม่เหมาะสม

ข้อเสนอแนะ:

Items ข้อความ	Not Relevant ไม่เหมาะสม	Somewhat relevant เหมาะสมบางส่วน	Very relevant เหมาะสม	Comments ข้อเสนอแนะ
1. I will get medication to reduce pain ฉันจะได้รับยาเพื่อลดปวดจากการเจ็บครรภ์				
2. I will get medication to induce labor ฉันจะได้รับยาเพื่อเร่งการคลอด				
3. I will have an electronic fetal monitor for checking my baby's heart ฉันจะได้รับการตรวจครรภ์ด้วยเครื่องมือไฟฟ้าเพื่อดูการเต้นของหัวใจลูก				
4. I will have a vaginal examination for checking cervix dilatation ฉันจะได้รับการตรวจภายในเพื่อตรวจดูการเปิดขยายของปากมดลูก				
5. I will have intravenous fluids ฉันจะได้รับน้ำเกลือเข้าทางเส้นเลือด				
6. I will have an episiotomy ฉันจะได้รับการตัดแผลฝีเย็บ				
7. I will have food and fluids withheld during labor and birth ฉันจะต้องงดน้ำและอาหารระหว่างการเจ็บครรภ์และการคลอด				

Items ข้อความ	Not Relevant ไม่เหมาะสม	Somewhat relevant เหมาะสมบางส่วน	Very relevant เหมาะสม	Comments ข้อเสนอแนะ
8. I will have a relative by my side during labor ฉันจะมีญาติอยู่เป็นเพื่อนระหว่างเจ็บครรภ์คลอด				
9. I will be able to contact my family during labor ฉันจะสามารถติดต่อครอบครัวได้ระหว่างเจ็บครรภ์คลอด				
10. I will get supportive care from nurses during labor ฉันจะได้รับการดูแลเอาใจใส่จากพยาบาลระหว่างเจ็บครรภ์คลอด				
11. I will receive information from nurses about methods of pain relief ฉันจะได้รับข้อมูลจากพยาบาลเกี่ยวกับวิธีการลดอาการเจ็บครรภ์คลอด				
12. I will receive information from nurses about my progress of labor ฉันจะได้รับข้อมูลจากพยาบาลเกี่ยวกับความก้าวหน้าของการคลอด				
13. I will have my legs trapped on metal stirrups during delivery ฉันจะได้คลอดบนเตียงคลอดที่ต้องวางขาและใช้สายรัดติดกับขาหยั่ง				
14. I will be delivered by a nurse ฉันจะได้รับการทำคลอดโดยพยาบาล				

Items ข้อความ	Not Relevant ไม่เหมาะสม	Somewhat relevant เหมาะสมบางส่วน	Very relevant เหมาะสม	Comments ข้อเสนอแนะ
15. I will be delivered by student nurses under their teachers' supervision ฉันจะได้รับการทำคลอดโดยนักศึกษาพยาบาลภายใต้การดูแลอย่างใกล้ชิดจากอาจารย์พยาบาล				
16. Doctor will be presented during delivery แพทย์จะอยู่ในห้องคลอดระหว่างการคลอด				
17. I will be assisted when I can no longer push with forceps or vacuum instruments ฉันจะได้รับการช่วยเหลือ ด้วยเครื่องดูดสุญญากาศหรือคีม เพื่อช่วยคลอดทางช่องคลอด เมื่อฉันไม่มีแรงเบ่งคลอด				
18. I will have an operation to deliver my baby if I have any complications ฉันจะได้รับการผ่าตัดเอาเด็กออกทางหน้าท้อง ถ้าฉันมีความผิดปกติใดๆเกิดขึ้น				
19. I will have a nurse coaching during delivery ฉันจะได้รับการแนะนำอย่างใกล้ชิดจากพยาบาลระหว่างการคลอด				

Items ข้อความ	Not Relevant ไม่เหมาะสม	Somewhat relevant เหมาะสมบางส่วน	Very relevant เหมาะสม	Comments ข้อเสนอแนะ
20. I will be involved in decision making about any treatments during the delivery process ฉันจะมีส่วนร่วมในการตัดสินใจเกี่ยวกับการรักษาของฉันในระหว่างการคลอด				
21. Nurses will speak to me politely พยาบาลจะพูดจาสุภาพกับฉัน				
22. Nurses will be happy to help me พยาบาลจะยินดีช่วยเหลือฉัน				
23. Nurses will give my baby to me immediately after birth พยาบาลจะให้ลูกมาอยู่กับฉันทันทีหลังคลอด				

Are there any important aspects of labor and birth that I have missed?
กรุณาเสนอแนะ หากท่านคิดว่ายังมีความคาดหวังอื่นที่สำคัญ เกี่ยวกับการเจ็บครรภ์และการคลอดบุตร ที่ผู้วิจัยไม่ได้กล่าวถึง