ผลของการสนับสนุนจากญาติผู้หญิงที่ใกล้ชิดในระหว่างการเจ็บครรภ์และการคลอด ต่อระยะเวลาการเจ็บครรภ์คลอด อุบัติการณ์การคลอดปกติ และความพึงพอใจต่อประสบการณ์การคลอด

นางศิริวรรณ ยืนยง

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาพยาบาลศาสตรดุษฎีบัณฑิต
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EFFECTS OF A CLOSE FEMALE RELATIVE SUPPORT DURING LABOUR AND DELIVERY ON DURATION OF ACTIVE LABOUR, INCIDENCE OF SPONTANEOUS DELIVERY, AND SATISFACTION WITH CHILDBIRTH EXPERIENCE

Mrs. Siriwan Yuenyong

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ศิริวรรณ ยืนยง : ผลของการสนับสนุนจากญาติผู้หญิงที่ใกล้ชิดในระหว่างการเจ็บครรภ์และการคลอดต่อระยะเวลาการเจ็บครรภ์คลอด อุบัติการณ์การคลอดปกติ และความพึงพอใจต่อประสบการณ์การคลอด (EFFECTS OF *A CLOSE FEMALE RELATIVE* SUPPORT DURING LABOUR AND DELIVERY ON DURATION OF ACTIVE LABOUR, INCIDENCE OF SPONTANEOUS DELIVERY, AND SATISFACTION WITH CHILDBIRTH EXPERIENCE) อ. ที่ปรึกษา : ศ. ดร. วีณา จีระแพทย์ อ. ที่ปรึกษาร่วม : ศ. ดร. เบอเวอรี่ เอ โอไบรแอน, 166 หน้า

การคลอดในโรงพยาบาลที่ไม่อนุญาตให้ญาติเข้ามาในห้องคลอด อาจทำให้ผู้คลอดรู้สึกโดดเดี่ยว และต้องเผชิญกับความเจ็บปวด ความเครียด และสภาพแวดล้อมที่ไม่คุ้นเคยตามลำพัง การศึกษานี้มีวัตถุประสงค์เพื่อเปรียบเทียบประสิทธิภาพของการสนับสนุนจากญาติผู้หญิงที่ใกล้ชิดในระหว่างการเจ็บครรภ์และการคลอดต่อระยะเวลาการเจ็บครรภ์คลอด อุบัติการณ์การคลอดปกติ และความพึงพอใจต่อประสบการณ์การคลอด การศึกษานี้ใช้โมเดลการสนับสนุนทางสังคมเป็นกรอบแนวคิดในการศึกษา และระเบียบวิธีวิจัยแบบวัดหลังการทดลอง (Posttest-only control group design) โดยเก็บรวบรวมข้อมูลที่โรงพยาบาลศูนย์ขนาด 782 เตียงในภาคตะวันออกของประเทศไทย หญิงตั้งครรภ์ท้องแรกที่มีอายุครรภ์ 36 สัปดาห์หรือมากกว่า และไม่มีภาวะแทรกซ้อนในระหว่างการตั้งครรภ์จำนวน 100 คน ได้รับการสุ่มเข้ากลุ่มทดลอง (48 คน) หรือกลุ่มควบคุม (52 คน) กลุ่มทดลองได้รับการสนับสนุนจากญาติผู้หญิงที่ใกล้ชิดตามที่หญิงตั้งครรภ์เลือกตั้งแต่เริ่มอยู่โรงพยาบาลจนถึง 2 ชั่วโมงหลังคลอดร่วมกับการได้รับการดูแลตามปกติของโรงพยาบาล กลุ่มควบคุมได้รับการดูแลตามปกติของโรงพยาบาล การเก็บรวบรวมข้อมูลโดยใช้แบบบันทึกข้อมูลส่วนตัวและข้อมูลทางสูติศาสตร์ แบบวัดความพึงพอใจต่อประสบการณ์การคลอด และแบบสอบถามความคิดเห็นของญาติผู้หญิงที่ใกล้ชิดและบุคลากรทางการแพทย์เกี่ยวกับการสนับสนุนจากญาติผู้หญิงที่ใกล้ชิดในระหว่างการเจ็บครรภ์และการคลอด วิเคราะห์ข้อมูลด้วยสถิติ ไควสแคว์ การทดสอบค่าที ความแปรปรวนร่วม และการวิเคราะห์เชิงเนื้อหา

ผลการศึกษาพบว่า กลุ่มทดลองมีระยะเวลาการเจ็บครรภ์คลอดสั้นกว่าและมีความพึงพอใจต่อประสบการณ์การคลอดสูงกว่ากลุ่มควบคุมอย่างมีนัยสำคัญทางสถิติ ($p<.05$ และ $p<.01$ ตามลำดับ) อุบัติการณ์การคลอดปกติของทั้งสองกลุ่มไม่แตกต่างกันอย่างมีนัยสำคัญทางสถิติ ($p=.73$) การศึกษานี้ยืนยันประสิทธิภาพของการสนับสนุนจากญาติผู้หญิงที่ใกล้ชิดที่มีต่อระยะเวลาการเจ็บครรภ์คลอดและความพึงพอใจต่อประสบการณ์การคลอด นอกจากนี้ข้อมูลจากการศึกษาเชิงคุณภาพยังพบว่า รูปแบบการพยาบาลที่อนุญาตให้ญาติผู้หญิงที่ใกล้ชิดเข้ามาสนับสนุนมารดาในระหว่างการเจ็บครรภ์และการคลอดได้รับการยอมรับจากญาติผู้หญิงที่ใกล้ชิดและบุคลากรทางการแพทย์ว่ามีประโยชน์ต่อผู้คลอดและมีความเหมาะสมในการนำไปปฏิบัติในโรงพยาบาล

สาขาวิชาพยาบาลศาสตร์ ลายมือชื่อนิสิต.....ศิริวรรณ ยืนยง.....
ปีการศึกษา 2550 ลายมือชื่ออาจารย์ที่ปรึกษา.....วีณา จีระแพทย์.....
ลายมือชื่ออาจารย์ที่ปรึกษาร่วม.....Beverly A. O'Brien.....

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KEY WORD: SOCIAL SUPPORT / CLOSE FEMALE RELATIVE / DURATION OF ACTIVE LABOUR / SPONTANEOUS DELIVERY / SATISFACTION WITH CHILDBIRTH EXPERIENCE / PRIMIPAROUS THAI WOMEN

SIRIWAN YUENYONG: EFFECTS OF *A CLOSE FEMALE RELATIVE* SUPPORT DURING LABOUR AND DELIVERY ON DURATION OF ACTIVE LABOUR, INCIDENCE OF SPONTANEOUS DELIVERY, AND SATISFACTION WITH CHILDBIRTH EXPERIENCE. THESIS ADVISOR: PROF. VEENA JIRAPAET, RN, DNSc. THESIS CO-ADVISOR: PROF. BEVERLEY A. O'BRIEN, RN, DNSc, 166 pp.

When women give births in hospital which does not allow any family member to be present during labour, they may experience emotional loneliness and deal with pain and unfamiliar and stressful environment. The purpose of this study was to compare the effect of an intervention of support by a close female relative during labour and delivery with the routine care on the duration of active labour, incidence of spontaneous delivery, and satisfaction with childbirth experience. The *Convoy Model of Social Support* was used as the conceptual framework for the study. A posttest-only control group design was conducted in a 782-bed regional teaching hospital in the eastern part of Thailand. One hundred primiparous women who were at 36 or more weeks' gestation and who had uncomplicated pregnancies were randomly assigned to either an experimental group (n = 48) or a control group (n = 52). The experimental group received support from a close female relative of her choice from admission to hospital until 2 hours after birth as well as a routine care while the control group received a routine care. Data were collected using demographic and obstetric data collection tools, the *Labour Agentry Scale*, close female relative's and health care provider's perspective questionnaires. Data were analyzed by Chi-square, independent t-test, analysis of covariance, and content analysis.

The findings found that the experimental group had significantly shorter duration of active labour and was more satisfied with their childbirth experience than the control group ($p < .05$ and $p. < .01$, respectively). There was no difference between groups in the incidence of spontaneous vaginal delivery ($p = .73$). This study confirmed the effectiveness of support from close female relative during labour and delivery on duration of active labour and satisfaction with the childbirth experience. Qualitative data provided evidence regarding the acceptability of having close female relative support during labour and delivery. The close female relatives and health care providers perceived its benefit to women in labour and its feasibility to implement in hospital.

Field of study nursing
Academic year 2007

Student's signature Siriwan Yuenyong
Advisor's signature Veena Jirapaet
Co-advisor's signature Beverley O'Brien

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CHAPTER I

INTRODUCTION

Background and Significance of the Study

Childbirth is a significant event in the lives of women and their families. It is a critical time in the human development that transforms women into mothers (Bergum, 1989). Many women believe that labour and birth is a high risk time for their anticipated babies and themselves (Chunuan, Kala, and Kochapakdee, 2004). Although labour is a short event with an average length of about 14 hours for primiparous women and 8 hours for multiparous women, the time that women spend in labour and giving birth affects their lives and that of their families long after the physical experience is over (Nichols and Gennaro, 2000). Women remember their childbirth for the rest of their lives (Hodnett, 1996). It forever shapes their thoughts of themselves as women and as mothers (Simkin, 1992) and may affect their ability to form positive relationships with other family members (Mercer, 1985; Moore, 1983). The quality of support that women receive during labour and delivery is important, and nurses need to be very concerned about how women perceive that support.

Prior to the introduction of western style medicine, most Thai women were delivered in their homes by non-professional midwives, who are referred to as Mawtumyae. The women were given support by female relatives. Now women give birth in hospitals rather than in their homes (Chunuan, Kala, and Kochapakdee, 2004; Hodnett *et al.*, 2003; Scott, Berkowitz, and Klaus, 1999) because hospitals are deemed to be safer. Many perceive that advanced technology and professional health

care providers ensure a safer outcome for birthing women and their babies (Chunuan, Kala, and Kochapakdee, 2004). Support from relatives during labour has been lost in many of these institutions and numerous women experience emotional loneliness (Chunuan, Kala, and Kochapakdee, 2004; Hodnett *et al.*, 2003; Scott, Berkowitz, and Klaus, 1999).

In general, nurses perform two tasks for women during labour and delivery (Scott, Berkowitz, and Klaus, 1999). These are to support them and to carry out nursing and medical procedures thought to promote safe maternal and newborn outcomes. Internationally it has been noted that nurses who care for women in labour spend only 6 to 12 percent of their time providing supportive care activities (Gale and Chamberlain, 2001; Gagnon and Waghorm, 1996; McNiven, Hodnett, and O'Brien-Pallas, 1992). When women are in labour, nurses (1) monitor their vital signs including foetal heart rates; (2) monitor the progress of labour; (3) update doctors' orders; and (4) prepare and administer medications. It is little wonder that they do not have much time to provide supportive care such as reassuring, guiding, and comforting physically and emotionally, as well as educating, and encouraging labouring and birthing women (Newton, 2004).

In Thailand, women giving birth at public hospitals are admitted to the labour and delivery rooms where they receive perineal shaves and enemas. They are separated from their families because hospital policies do not yet allow family members to be present to provide supportive care during labour and delivery. Low risk women are allowed to eat a soft diet while in latent labour but are not allowed to eat during active labour. Nurses record contractions and foetal heart rates using a stethoscope. Availability of electronic foetal monitoring is limited and usually only used to assess foetal well-being and maternal contractions (Chunuan, Kala, and

Kochapakdee, 2004). These procedures are considered standard intra partum care and considered to ensure a safer outcome for labouring women and their babies. However, the process of childbirth was perceived by labouring women, especially first-time mothers, as a fearful event. They worried about labour pain, difficulty giving birth and of the possibility of their baby having an abnormality (Melender and Lauri, 1999). The hospital environment where women labour is often unfamiliar to them, is the variety of equipment used by health care providers. In addition the language, procedures, interventions, and health care providers themselves can be intimidating. Yet, it is a time when they are separated from their families. These situations could well contribute to a sense of isolation resulting in maternal anxiety and stress during delivery.

There is evidence that the fear, tension, and pain cycle first hypothesized and described in the classic works of Grantly Dick-Read (2005) may account for escalating labour pain in that increased tension and anxiety during labour contribute to increased pain. Dick-Read stated that most women approach labour with fear and anxiety because of ignorance, prejudice, and misinformation. In turn, the result is mental tension which leads to tension in muscle groups including those in the lower uterine segment. Muscle tension can lead to increased pain and can delay labour. Excessive anxiety increases an endogenous release of catecholamines, which reduces blood flow to and from the placenta, restricts fetal oxygen supply and waste removal, reduces effectiveness of uterine contraction, and slows the labour progress (Thompson, 1995). Therefore, prolonged labour as a consequence of anxiety can become the rational for operative delivery including forceps extraction, vacuum extraction, and caesarean section.

In Thailand, increasing rates of caesarean section have been reported. In a national survey of caesarean rates it was found that rates were 24 percent in general hospitals, 48 percent in private hospitals, and 22 percent in university hospitals (Chanrachakul, Herabutya, and Udomsubpayakul, 2000). In 2003, the Ministry of Public Health reported caesarean section rates throughout the country to be 30.6 percent of all births (MOPH, 2003). This obstetrical operation is a concern because it has been associated with increased morbidity and mortality for both mother and infant. In addition, the cost for care of patients with caesarean section is higher (Mutryn, 1993).

The quality of the experience of childbirth also affects maternal psychosocial well-being. Women's cultural and individual values influence how they view childbirth (Thompson, 1995). In addition, the quality of support that they are given during labour has an enormous effect on their perceptions of their childbirth (Creehan, 1996). It was reported in several studies that Thai women have higher expectations for nursing care than they actually receive (Boonsong Charoensug, 1989; Sopen Kunsrikoaw, 1997; Srenuan Osotsatian, 1995; Naouvarat Topanthanon, 2004). In two studies, the majority of Thai post partum women at regional hospitals reported dissatisfaction with their intra partum nursing care (Sopen Kunsrikoaw, 1997; Srenuan Osotsatian, 1995). In another Thai study, women reported a low level of satisfaction with nursing services (Sopen Chunuan, 2002). Those investigators suggested that there is a lack of personnel and an inconsistent quality to the provision of nursing care services for intra partum women in Thailand.

It was indicated in the studies that were reviewed that social support during labour and delivery has beneficial effects on childbirth outcomes and maternal satisfaction with the childbirth experience (Chunuan, Kala, and Kochapakdee, 2004).

Social support in the form of continuous intra partum support is associated with positive childbirth outcomes. For example, labour is shorter (Prakyekeow Gacum, 1991; Langer *et al.*, 1998; Kennell *et al.*, 1991; Klaus *et al.*, 1986; Pascoe, 1993; Scott, Berkowitz, and Klaus, 1999; Scott, Klaus, and Klaus, 1999; Sosa *et al.*, 1980; Sauls, 2002; Zhang *et al.*, 1996); spontaneous vaginal births are more likely (Madi *et al.*, 1999; Zhang *et al.*, 1996); caesarean sections are fewer (Kennell *et al.*, 1991; Klaus *et al.*, 1986; Madi *et al.*, 1999; Hodnett *et al.*, 2006; Scott, Berkowitz, and Klaus, 1999; Scott, Klaus, and Klaus, 1999; Zhang *et al.*, 1996). Furthermore, women who received continuous social support during labour reported experience greater personal control (Hodnett and Osborn, 1989; Langer *et al.*, 1998; Prakyekeow Gacum, 1991), higher levels of coping (Gordon *et al.*, 1999; Hofmeyr *et al.*, 1991; Pranee Sangrungnapaphan, 1988; Wiparat Sodsong, 2005; Sujinda Threenate, 2001), higher levels of satisfaction with childbirth (Langer *et al.*, 1996), and more positive childbirth experiences (Prakyekeow Gacum, 1991).

Social support has been defined as resources and aid derived from one's social relationships (Orr, 2004). It can be viewed as falling into one or more of the following categories: emotional or affect, instrumental or physical aid, information or advice, and appraisal or affirmation. Hodnett (1996) asserted that the components of social support during labour and birth that have been reported to be helpful for women are (a) emotional support such as continuous presence, reassurance, encouragement, and praise; (b) physical support such as comfort measures that decrease hunger, thirst, or pain; (c) information and advice about what is happening and how to cope; and (d) advocacy from someone close who will respect their choices. The mere physical presence of a support person is not enough (Enkin *et al.*, 2000). Support persons engage in supportive activities, which encompass both physical comfort measures and

emotional support in response to a woman's own needs and wishes. Her support companion may walk with her, massage her back, offer food and fluids help her to find a comfortable position, or assist her with a bath or shower. He/she can provide comfort measures such as counter pressure, ice packs or hot water bottles to painful areas of a labouring woman's body. He/she can help her to use breathing patterns that may help her relax. Emotional support may include maintaining eye contact and providing information, praise, and encouragement. Support is more meaningful if every woman is able to choose her source of social support in labour. This may be her partner, relative, or friend. If a nurse is to intervene by ensuring a high level of support for a labouring woman, it is necessary to respect maternal choice regarding whom that woman wants to provide her physical and emotional support and to offer nursing support to both the labouring woman and her choice of support person.

Typically, social support that takes place in institutions during labour and birth is provided by formally recognized support persons such as nurses or doulas. Increasingly, social support is also provided by more informal sources such as partners/husbands, female relatives, or friends. In a review of relevant research related to the types of individuals who can offer effective support during labour and birth, it was found that (1) nurses (Gagnon, Waghorn, and Covell, 1997; Hodnett *et al.*, 2002; Wiparat Sodsong, 2005), (2) monitrices (lay midwives) (Hodnett and Osborn, 1989), (3) doulas (Kennell *et al.*, 1991; Langer *et al.*, 1998), (4) untrained lay women (Hofmeyr *et al.*, 1991; Klaus *et al.*, 1986; Sosa *et al.*, 1980), (5) partner/husbands (Prakyekeow Gacum, 1991; Ip, 2000; Pranee Sangrungnapaphan, 1988; Boonsong Supradith, 2002; Sujinda Threenate, 2001), and (6) female relatives (Madi *et al.*, 1999) were studied as sources of support. Social support provided by nurses or monitrices was reported to be not as effective as that provided by doulas,

untrained lay women, or female relatives. Support provided by nurses did not appear to have a beneficial effect on duration of labour (Gagnon, Waghorn, and Covell, 1997; Hodnett *et al.*, 2002; Hodnett and Osborn, 1989), rates of spontaneous vaginal delivery (Hodnett *et al.*, 2002), rates of operative delivery (Gagnon, Waghorn, and Covell, 1997; Hodnett *et al.*, 2002), and maternal perception of the childbirth experience (Wiparat Sodsong, 2005) when compared to support provided by others. Rosen (2004) analyzed eight published reports of labour support by nurses, monitrices, trained lay women (doulas), untrained lay women, and female relatives. Support by untrained lay women, starting in early labour and continuing into the post partum period provided the most consistent beneficial effect on childbirth outcomes. Untrained lay women provided friendly support in previous studies, but similar or greater benefits where reported when a relative remained with women throughout the labour and delivery (Sosa *et al.*, 1980).

In Thailand, doulas or untrained lay women are not in attendance during labour and delivery. Studies about social support provided by nurses (Wiparat Sodsong, 2005) and husbands (Boonsong Supradith, 2002; Prakyekeow Gacum, 1991; Pranee Sangrungnapaphan, 1988; Sujinda Threenate, 2001) have been reported. In many studies the beneficial effects of social support by nurses and husbands on childbirth outcomes are offered, although both nurses and husbands have limitations that may restrict their role of providing support. For example, nurses who are responsible for the well-being of women and their newborns, even if they have a desire to provide support, are frequently employed in a system wherein they must give an individual woman a lower priority than their general clinical duties and their personal needs for breaks, sleep, and time off. Emotional and physical support may be given sporadically because of clinical duties that cannot be postponed (Simkin and

Friederick, 2000). In Thailand, Areewan Oumtanee and Suchada Ratchukul (2003) reported that women needed nursing support to help them appropriately deal with pain, anxiety, and stress during delivery. That study, women reported that they expressed their needs but did not believe that nurses responded appropriately to them.

The presence of husbands during labour is impracticable or unworkable in Thailand because many Thai men feel uncomfortable, unconfident, and incompetent in meeting either the physical or psychological needs of their labouring spouse (Leventhal *et al.*, 1989). Husbands may find it hard to provide support during labour because of their own emotional involvement with their wives, babies, and the birth process (Nolan, 1995; Simkin and Friederick, 2000). In addition, Ip (2000) found that when husbands were present during labour, their wives used significantly higher doses of analgesia and speculated that this finding was because the husband advocated this for his wife by requesting pain relief for her. One also has to consider that the presence of husbands or any males may not be acceptable to other labouring women in crowded maternity units.

Support from a close female relative seems to be a needed and a practical intervention that could meet the intra partum maternal need for emotional support. In a focus group (n=8) of post partum Thai women, some wanted their relatives to be with them because they felt that they did not receive enough support from their health care providers. Many women said that they would have had a more positive experience if one relative could have been with them during labour. Some women reported that they would like to receive social support from their close relatives because they feel more comfortable asking for help from them (Chunuan, Kala, and Kochapakdee, 2004).

One crucial goal of maternal care is to focus on a family-centered approach. In Thailand, most public hospitals have not yet allowed any family members to be present in labour and delivery rooms. Many women giving birth have to deal with their labour pain, anxiety and stress by themselves. The experience of giving birth can strengthen women so that they are competent, able to trust themselves and know their inner strength (Keenan, 2000). Ensuring social support during the crucial time of labour and birth is an important function for nurses and midwives. However, the shortages of nurses and midwives are still a critical problem in Thailand. They have limited time to provide supportive care so labouring women are left to labour without continuous social support from anyone.

The presence of a support person was one of the important factors associated with satisfaction with the childbirth experience (Bramadat and Driedger, 1993; Littlefied and Adams, 1987; Mercer, Hackey and Bostrom, 1983). Understanding women's satisfaction with their childbirth experience is relevant to health care providers, administrations, and policymakers as an indicator of maternal perception of the quality of her care (Hodnett, 2002). Support from lay women provided the most consistent beneficial effect on childbirth outcomes (Rosen, 2004), but similar or greater benefits where reported when a relative remained with women throughout the labour and delivery (Sosa *et al.*, 1980). Thus, to improve childbirth outcomes and maternal satisfaction with the childbirth experience, support from a close female relative should be part of a comprehensive nursing strategy to provide appropriate care to labouring women and their families in Thailand.

Although there was a study conducted in Botswana to evaluate the effectiveness of female relative and remarkable outcomes were reported (Madi *et al.*, 1999), that study was limited in its generalizibility to Thai women because of

variations in medical practice, hospital routines, and culture. An additional limitation of that study was the small sample size. Many questions still remain such as the characteristics of support that are important, the timing of the commencement of the supportive role, and the process by which support influences outcomes. Answers to these questions can help elucidate and define the nature and specificity of the impact of social support as an intervention as well as guide future intervention endeavors. Thus, the effectiveness of a close female relative in providing support during labour and delivery at public hospitals in Thailand needs to be evaluated. Benefits are possible reduced maternal isolation and increased sense of security; thus fear, pain, and anxiety levels that are associated with negative childbirth outcomes are minimized. In addition, evidence based data are needed to support policymaker decision making on the utility of allowing a close female relative as a source of support for labouring women.

Research Questions

1. Does support by a close female relative during labour and delivery affect duration of active labour?

2. Does support by a close female relative during labour and delivery affect incidence of spontaneous vaginal delivery?

3. Does support by a close female relative during labour and delivery affect satisfaction with the childbirth experience?

4. What is the perspective of close female relatives and health care providers on having a female relative support for woman during labour and delivery?

Hypotheses

The research hypotheses addressed in this study are grounded in previous research in the field as well as in the underlying theoretical premises.

1. Women who receive support from a close female relative during labour and delivery will have shorter duration of active labour than those who receive usual care.

2. Women who receive support from a close female relative support during labour and delivery will have a higher incidence of spontaneous vaginal delivery than those who receive usual care.

3. Women who receive support from a close female relative during labour and delivery will feel more satisfied with their childbirth experience as demonstrated by a higher score on the *Labour Agentry Scale (LAS)* than those who receive usual care.

Scope of the Study

A posttest-only control group design will be conducted to compare duration of active labour, incidence of spontaneous vaginal delivery, and satisfaction with the childbirth experience in primiparous Thai women who receive support during their intra partum period from a close female relative that they choose with those women who receive usual care. Women will be recruited from antenatal clinic if they were planning to receive intra partum care at Chonburi Hospital from November, 2006 to May 2007.

Assumptions

1. Participants will be truthful when answering self-report questionnaires.

2. Satisfaction with the childbirth experience can be measured by using the *LAS*.

3. Support from a close female relative during labour and delivery is adequate if the close female relative is known to and chosen by a labouring woman and if the stays with her as continuously as possible from early labour unit 2 hours after the birth, as well as provides support activities that promote both emotional support and physical comfort as the labouring woman needed.

Conceptual Framework

The conceptual framework selected for this study is the *Convoy Model of Social Support* (Kahn and Antonucci, 1980). One definition of convoy is "to accompany or attempt for protection." The perspective from which the researcher views the nature of support is similar to that of a convoy. In the *Convoy Model of Social Support*, it is asserted that social support is an important determinant of well-being, both for its direct contribution and for its ability to moderate the effect of stress. Kahn and Antonucci combine theories of attachment and theories of role into a theoretical model that can be used to examine the varying effects of social support across the life cycle. The concept of the convoy or personal network is proposed as the structure within which social support is given and received. It is argued in this model that social support comes from a relatively stable personal network of family members, friends, and others.

Kahn and Antonucci defined social support as interpersonal transaction that includes one or more of the following elements: (a) affect, which means expressions of liking, admiration, respect, or love; (b) affirmation, which means expressions of agreement or acknowledgement of the appropriateness or rightness of some act or statement of another person; and (c) aid or assistance is given, including materials, money, information, time, and entitlements.

The reasons this model was chosen as the conceptual framework for this study was because, in this model, close family members are emphasized as the important support providers that affect health and well-being outcomes. In addition, it is acknowledged by creators of the model that the nature and amount of social support vary and that interpersonal interactions across various social systems vary over the lifespan.

A social support convoy is a social network that is determined by the interaction of the characteristics of the individual and the properties of the environment. More specifically, this interaction between personal and situational factors influences both the structure and functions of the social support convoy (Antonucci, 1985). The convoy structure is described as the network composition and refers to the size of the network as well as its connectedness and stability. Convoy structure has most often been represented as three concentric circles, representing the degree of social support offered to a person. The innermost concentric circle represents convoy members who are very close to person. There are perceived as the important support givers. Spouse and some family member are likely to be included here. The middle concentric circle consists of people who may be family members, friends, or co-workers. The outermost concentric circle consists of convoy members who are less close to person. Membership is likely to consist of supervisors, co-

workers, and neighbors whose relationship to the recipient of support has achieved some level of importance beyond the formal role requirements. Convoy functions include the actual support including aid, affection, and affirmation (Kahn and Antonucci, 1980).

In the *Convoy Model of Social Support*, it is also suggested that a life course perspective is important to the understanding of social support. Kahn and Antonucci point out that as people move through the course of their life, their circumstances may change, resulting in concomitant changes in their needs for and ability to provide the form and amount of social support appropriate at a given time and place. These needs will depend on changing circumstances and there is no single lifelong recipe for the amount of supports required (Kahn and Antonucci, 1980). This emphasis on timing highlights the need consider important transitions that occur throughout the life course (Cleveland, 2003).

The explanatory framework linking social support and well-being throughout the life cycle is summarized in terms of five propositions as follows (Figure 1.1).

1. A person's requirements for support at any given time are determined jointly by properties of the person (age, other demographic characteristics, personality, etc.) and by properties of the situation (expectations and demands of work, family, and other roles) (Arrows 1a and 1b).

2. The structure of a person's convoy (size, connectedness, stability, etc.) and convoy function (aid, affection, and affirmation) determined jointly by enduring properties of the person, by the person's requirements for social support and by properties of situation (Arrows 2a, 2b, and 2c).

3. The adequacy of social support received by a person is determined by the properties of the convoy, and by personal and situational properties (Arrows 3a, 3b, and 3c).

4. Outcomes, including well-being and performance in major roles are determined jointly by enduring properties of person, adequacy of social support and properties of the situation (Arrows 4a, 4b, and 4c).

5. The influence of personal and situational factors on criteria of well-being and performance in major roles is moderated by convoy structures and by the adequacy of social support (Arrows 5a, 5b, 5c, and 5d).

In this model the term outcomes is used to provide a general rubric under which both physical and psychological health measures might be included. Common examples of outcomes measures include life satisfaction, well-being, health, negative affect, and happiness (Antonucci, 1983).

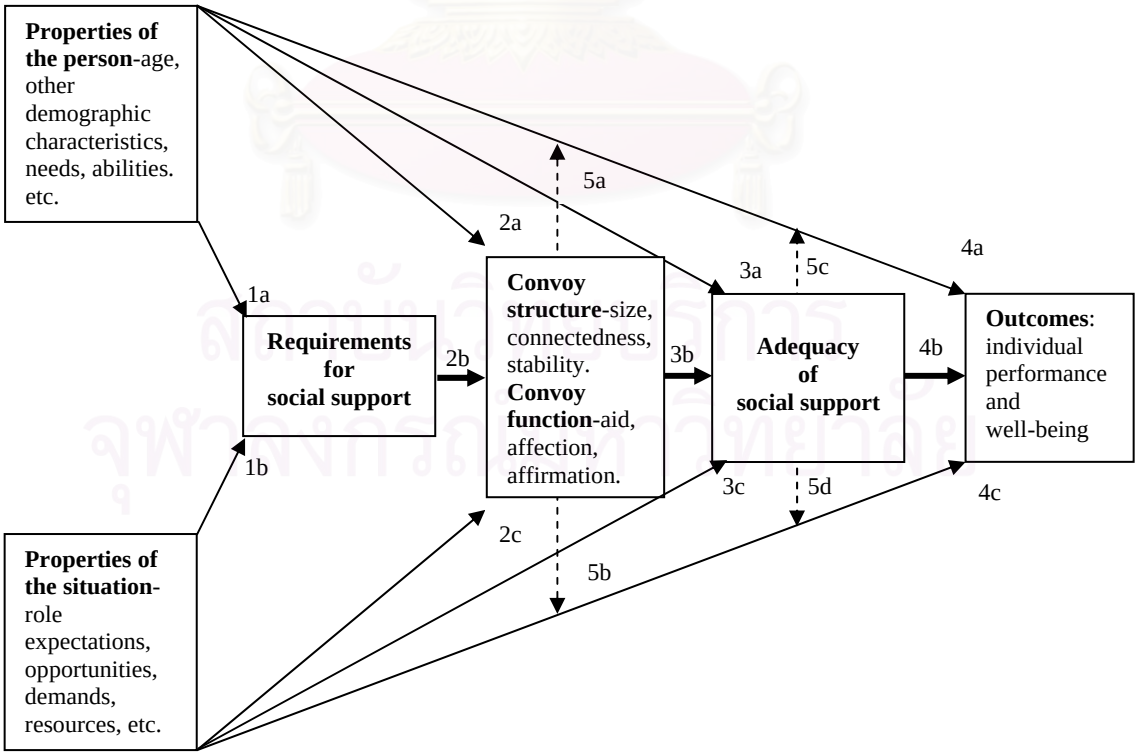

Figure 1.1 The *Convoy Model of Social Support* (Kahn and Antonucci, 1980, p. 270)

Although most of the research on the convoy model of social support has been conducted with adult samples, there is reason to believe that it can be successfully applied to women during childbirth. One of the studies to expand the focus of the *Convoy Model of Social Support* during childbirth was conducted by Tarkka and Paunonen (1996). Networks of social support available for women during pregnancy and childbirth were explored and women's experiences of childbirth and the social support connected with those experiences were described. The data were submitted to 200 women on the ward immediately after childbirth. Family members were mentioned most often as providers of support during labour. Women received much support from their relatives. The network of social support is a major source of emotional support, aid, and affirmation for the women. Further, a significant association was found between the emotional support experienced by these women and their positive experience of childbirth.

In this study, the *Convoy Model of Social Support* was the perspective from which knowledge related to social support during labour and delivery could be viewed. This perspective helps to understand the conceptual framework linking social support and outcomes. The explanatory framework linking social support and outcomes is described below.

A social support convoy refers to a labouring woman in hospital at a labour unit. She is a person needing support from a convoy structure and convoy function because she has labour pain and is in an unfamiliar birth environment. In this study, convoy structure is a close female relative and convoy function is support. Social support is more adequate if the support person is known to labouring woman (i.e., a close female relative) and is chosen by her as well as provides support activities that promote both emotional support (affect) and physical comfort (aid). If a labouring

woman receives the adequate social support, outcomes including, shorter duration of active labour, more spontaneous vaginal delivery, and higher satisfaction with the childbirth experience are anticipated because these outcomes are moderated by social support provided by a close female relative. Specific outcomes for this study are based on the findings from the literature review.

The conceptual framework of support from a close female relative during labour and delivery is illustrated in Figure 1.2 and the relations of the variables in this study are presented in Figure1.3.

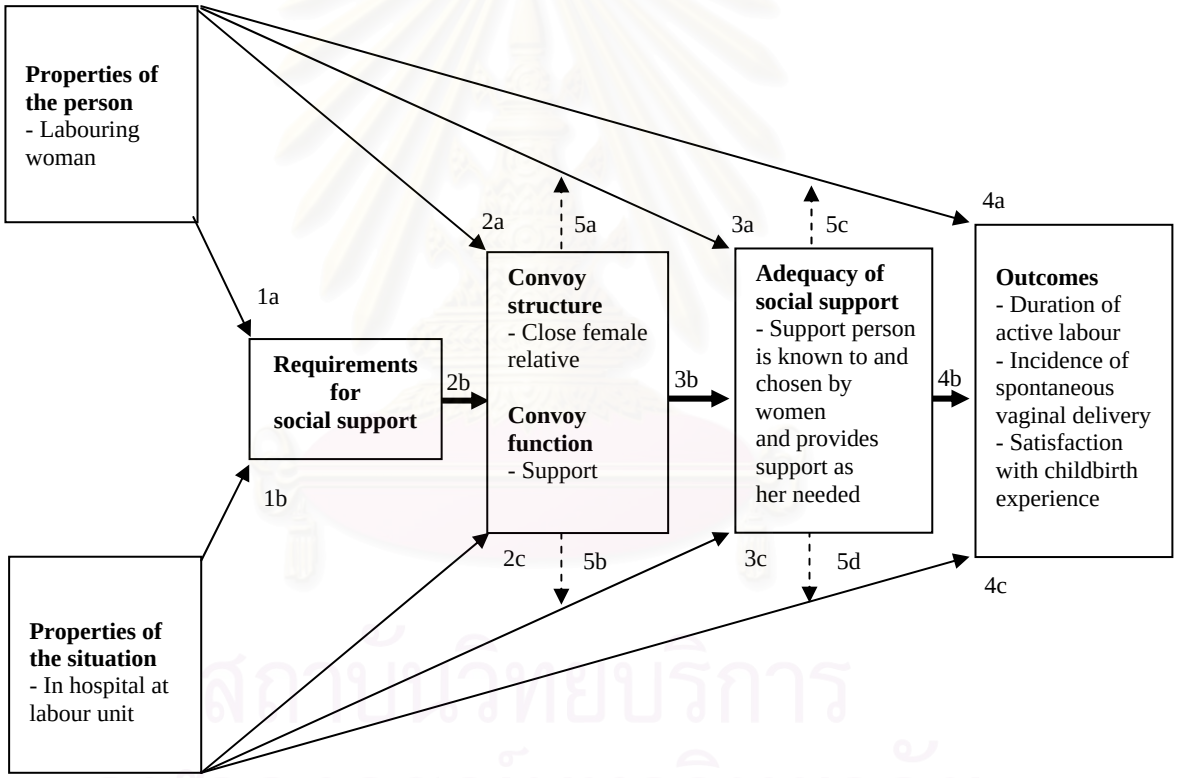

Figure 1.2 Conceptual framework of social support during labour and delivery

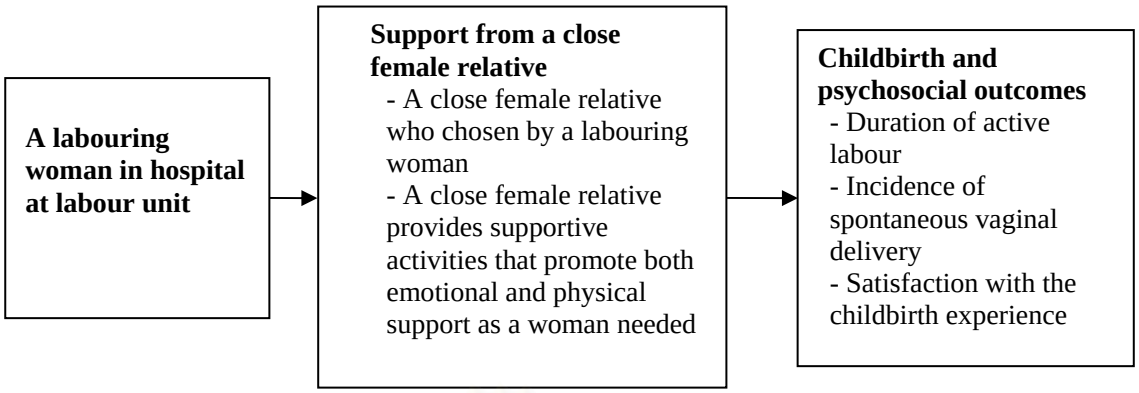

Figure 1.3 Relations of the variables in this study

Operational Definitions

The following operational definitions will be used for this study:

1. Support from a close female relative during labour and delivery refers to the provision of assistance by a close female relative who received a preparation class about her role in supporting the labouring woman during labour and delivery. The class for the close female relative will be given by the nurse researcher when a pregnant woman is at or near 37 weeks gestation. The researcher designed the intervention using a close female relative for support during labour and delivery, based on the *Convoy Model of Social Support* (Kahn and Antonucci, 1980) and integrated with the knowledge related to effective caring activities for labouring women (Enkin *et al.*, 2000). The support during labour and delivery includes having the support person who is known to (i.e., a close female relative) and chosen by labouring woman stays with her as continuously as possible from the time of hospital admission until 2 hours after the birth. A close female relative also provides supportive activities during this time that promote both emotional support and

physical comfort. Emotional support consists of being there, hand holding, touching or hugging, talking in a soothing manner, maintaining eye contact, encouraging and praising her efforts. Physical comfort includes assisting with ambulation and helping find a comfortable position, using cool cloths, massaging, and coaching breathing and pushing during childbirth as desired by the labouring woman.

2. Usual care refers to the provision of care provided by intra partum staff. The usual care of Chonburi Hospital is as follows:

At the antenatal clinic, nurses provide pregnant women with information about fetal growth and development, diet, exercise, hygiene, self-monitoring of foetal movement, and self-monitoring of complications during pregnancy. When women are in labour, they are admitted to the labour unit. Initially, they are admitted to a preparation room. During this time, nurses recorded information with respect to reason for admission and obstetric history as well as demographic information including age, marital status, weight, gestational age, and any complications encountered during pregnancy. In addition, nurses conduct a head-to-toe physical examination and record weight, vital signs, and results of the urinalysis (protein and sugar). The abdominal examination includes Leopold's maneuvers to assess the presentation and position of the fetus. A vaginal examination is conducted to assess the cervix, membranes, and fetus presentation. Then, women receive a perineal shave and enema if they are in active labour. Women are then transferred to the "attending room". Family members are not allowed to stay with women at this point.

During active labour, women are not allowed to eat anything. Intravenous fluid is administered to prevent dehydration. Augmentation of labour (i.e., amniotomy and oxytocin drip) is performed when labour has progressed abnormally. Nurses and/or residents assess and record the duration and strength of uterine

contraction. They also assess foetal heart rates at least every 60 minutes. Subsequent vaginal examinations are done at approximately two-hour intervals, depending on the progress of labour and judgment of the nurses or residents. Nurses also provided intermittent physical, emotional, and informational support. Some women who cry out or groan are considered to have a high level of pain and they receive analgesics if ordered by a resident or obstetrician. When cervical dilatation is judged to be 9-10 centimeters (cm) women are transferred to the delivery room.

Nurses are the primary managers of births that do not require advanced obstetrical technology. They work under the routine orders of a resident or obstetrician and have a responsibility to deliver women who are experiencing a normal labour. During delivery, women are placed in the lithotomy position and episiotomy is performed before birth. In high risk pregnant women, residents or obstetricians perform the delivery.

After the birth, mothers and babies will remain in the labour unit for at least 2 hours. During this time they are monitored and encouraged to begin breast feeding within 30 minutes of the birth. Then, they are transferred to the rooming-in post partum ward together.

3. A close female relative refers to a female family member such as mother, mother in-law, sister, or close friend who will be chosen by pregnant woman.

4. Duration of active labour refers to the length of time as measured in hours and minutes from the start of active labour to complete dilatation. The start of active labour is defined as starting at 3 centimeters cervical dilatation, the presence of regular uterine contractions 3 to 4 minutes apart (3 contractions within 10 minutes) and gets stronger, lasting 45 seconds, and the rate of cervical dilatation increases. The researcher will assess the duration of active labour by attending the progress of labour

of the participants and asking this information from participants, as well as reading the partograph record of the participants. In Chonburi Hospital, the partograph is recorded by residents or obstetricians to assess the progress of labour and to identify when intervention is necessary for every woman in labour.

5. Incidence of spontaneous delivery refers to amount of the process by which a woman give birth a baby naturally. It occurs without the need for forceps, vacuum, or caesarean section. The researcher will assess the incidence of spontaneous delivery by observing the birth process and reading the medical record of the participants.

6. Satisfaction with the childbirth experience refers to a woman's cognition of her experience of labour and delivery. The co-researcher who blind to group assignment will assess the satisfaction with the childbirth experience for every participant by measuring quantitatively through self-report scores on the *Labour Agentry Scale* (Hodnett, 1983).

Expected Benefits

If the nursing intervention of introducing a close female relative to provide support during labour and delivery is found to be beneficial with respect to duration of active labour, incidence of spontaneous vaginal delivery, satisfaction with the childbirth experience; nurses and other health care providers will have an evidence-based intervention to use as a clinical guideline to enhance the health and well-being of women during labour, delivery, and the post partum period. The results of this study are expected to provide evidence base data to support policymaker decision

making on valuing a close female relative as a source of support for labouring women and enhance further nursing knowledge development.

Conclusion

Childbirth is a significant event in the life of a woman. Most women give birth in hospitals. In doing this they experience a loss of support from family members. They may have to deal with their labour pain, anxiety, stress, and unfamiliar environment alone. Social support is known to have a positive effect on childbirth outcomes. However, there is a shortage of nurses in Thailand so it is not possible for them to provide all of the needed support to patients. Facilitating the inclusion of a close female relative to provide support during labour and delivery may help nurses to improve childbirth outcomes. Thus, the purpose of this study is to test the effects of support from a close female relative during labour and delivery on duration of active labour, incidence of spontaneous vaginal delivery, and satisfaction with the childbirth experience. The views of close female relatives and health care providers with allowing labouring woman to be attended by a close female relative should be explored as well. The *Convoy Model of Social Support* was to provide understand the conceptual framework linking social support and outcomes. The findings will be used to provide nurses with evidence about the utility of this intervention. If effective, it can be used to develop clinical guidelines to enhance the health and well-being of women during labour, delivery, and post partum period through the support of a close female relative.

CHAPTER II

REVIEW OF LITERATURE

In this chapter, relevant literature is reviewed. The review will be organized around the following topics: (a) social support in childbirth, (b) beneficial effects of social support on childbirth outcomes, (c) source of support for women during labour and delivery, (d) social support by a close female relative as nursing intervention, and (e) factors related to outcome variables.

Social Support in Childbirth

Social support is a significant concept for nurses and other health care professionals. Social support is needed in everyone's life to promote health and prevent medical problems (Langford *et al.*, 1997). In conventional terms, social support is assistance rendered by lay persons who are part of one's social network, rather than by professionals (Stewart, 1993).

Definitions of social support

Many definitions of social support are found in the literature. All of the definitions imply some type of positive interaction or helpful behavior provided to a person in need of support (Rook and Dooley, 1985). Social support has been defined as resources and aid derived from one's social relationships (Orr, 2004). Social support can be viewed as falling into two categories; emotional and instrumental. Emotional support can be defined as relationships that make the individual feel loved, appreciated, and valued. Emotional support also includes informational support,

which is the provision of advice or information. Emotional support is defined in various aspects such as the provision of caring love and trust (House, 1981) and affective assistance (Kahn and Antonucci, 1980). Emotional support can be derived from diverse sources such as marriage, a trusting friendship, membership in a group, or friends and family. Having a confidante or close friend has been conceptualized as an important aspect of emotional support. House (1981) presents emotional support as the most important category through which the perception of support is conveyed to others. Whereas, instrumental support has been described as tangible assistance and includes support available to the individual from members of his/her family or others to help with specific, concrete needs, such as lending money, giving a ride and helping with childcare. Other definitions of social support that have been frequently cited in literature are presented in Table 2.1 (Williams, Barclay, and Schmied, 2004).

Table 2.1 Definitions of social support

Author and year	**Definitions**
Caplan (1974)	- Both enduring and short supports are likely to consist of three elements: the significant others help the individual mobilize his/her psychological resources and master his emotional burdens; they share his tasks; and they provide him/her with extra supplies of money, materials, tools, skills, and cognitive guidance to improve his handling of his/her situation (p. 6).
Cobb (1976)	- Social support is define as information leading the subject to believe that he/she is cared for and loved, esteemed and valued, and he/she belongs to a network of communication and mutual obligation (p. 300).
House (1981)	- Both scientific experts and relatively uneducated lay persons agree that social support is an interpersonal transaction involving one or more of the following: (1) emotional concern (linking, love, empathy), (2) instrumental aid (goods or services), (3) information (about the environment), or (4) appraisal (information relevant to self evaluation) (p. 39).
Cohen and Syme (1985)	- Social support is defined as the resources provided by other persons (p. 4).

Briefly, social support is the resources and aid provided by other persons and encompasses one or more of the following elements: emotional support or affect, instrumental or physical aid, information or advice, and appraisal support or affirmation.

Social support can be classified into formal and informal social support (Gladow and Ray, 1986; Tracy and Whittaker, 1987). Formal social support is provided by professionals such as nurses and physicians. Providers of informal social support include individuals such as relatives, friends, and members of social groups in organizations such as churches and social clubs. Compared with formal social support, informal social support is provided or offered more frequently and is considered the more effective type of support (Tilden, 1986).

Support persons who typically provide social support can be described as four orders of social networks (Gottlieb, 1983) These are, (1) spouses and close relatives who are the most significant to an individual usually compose the first-order social network; (2) other relatives and friends with whom there is ongoing contact typically compose the second-order social network; (3) key community members, including self-help groups, often occupy the third-order social network; and (4) professionals whom individuals seek assistance from are usually the forth-order social network.

Definitions of social support in childbirth

Concepts surrounding social support and childbirth have been linked together for many decades. Terms used for the types of support are associated with the type of care that is needed such as labour support (Hodnett, 1996; Davies and Hodnett, 2002), supportive care (Simkin, 2002), nursing support (Corbett and Callister, 2000), and psychosocial support (Midmer, 2000). These terms are similar to the definitions of social support in childbirth and are based on the social support literature that

presented in Table 2.2. It includes the following elements: emotional presence (i.e., "being there") and support, physical comfort, information or advice, and advocacy. However, the emphasis of these definitions is on social support provided by a variety of health care providers such as nurses and doulas.

Table 2.2 Definitions of social support in childbirth

Author and year	**Definitions**
Hodnett (1996)	- Labour support is one of the most important intra partum nursing functions, with measurable effects on the outcomes of labour and birth. Supportive activities fall within five categories: emotional support, comfort measures, advocacy, supporting the husband/partner, and information/advice (p. 257).
Davies and Hodnett (2002)	- The concept of labour support includes three elements: emotional support (presence, encouragement, reassurance), tangible assistance (physical comfort), and advice and information (p. 49).
Simkin (2002)	- Supportive care may be defined as non-medical care that is intended to ease a woman's anxiety, discomfort, loneliness, or exhaustion, to help her draw on her own strengths, and to ensure that her needs and wishes are known and respected. It includes physical comforting measures, emotional support, information and instruction, advocacy, and support for the partner (p. 721).
Corbett and Callister (2000)	- Nursing support was categorized as emotional, informational, or tangible support (p. 70).
Midmer (2000)	- Psychosocial support behaviors can be categorized as (a) emotional: the communication of love, caring, empathy, and trust; (b) instrumental: the expression of direct aid in the form of hands-on work or money; (c) informational: the sharing of information that will help individuals cope; and (d) appraisal: the sharing of information to help individuals' evaluate themselves (p. 478).

Beneficial Effects of Social Support on Childbirth Outcomes

Since the 1970s, numerous research reports, reviews, and meta-analysis were published that were related to beneficial effects of social support on childbirth outcomes. Social support in the form of continuous intra partum support is associated with the following outcomes. Labour is shorter (Langer *et al.*, 1998; Kennell *et al.*, 1991; Klaus *et al.*, 1986; Pascoe, 1993; Prakyekeow Gacum, 1991; Scott, Berkowitz, and Klaus, 1999; Scott, Klaus, and Klaus, 1999; Sosa *et al.*, 1980; Zhang *et al.*, 1996); spontaneous vaginal deliveries are more likely (Madi *et al.*, 1999; Zhang *et al.*, 1996); forceps extractions are fewer (Hodnett *et al.*, 2006; Scott, Berkowitz, and Klaus, 1999; Scott, Klaus, and Klaus, 1999; Zhang *et al.*, 1996); vacuum extractions are fewer (Madi *et al.*, 1999; Scott, Klaus, and Klaus, 1999); caesarean sections are fewer (Kennell *et al.*, 1991; Klaus *et al.*, 1986; Madi *et al.*, 1999; Hodnett *et al.*, 2006; Scott, Berkowitz, and Klaus, 1999; Scott, Klaus, and Klaus, 1999; Zhang *et al.*, 1996); oxytocin augmentation is decreased (Gagnon, Waghorn, and Covell, 1997; Hodnett, 2006; Hodnett *et al.*, 2002; Hodnett and Osborn, 1989; Klaus *et al.*, 1986; Madi *et al.*, 1999; Scott, Klaus, and Klaus, 1999; Scott, Berkowitz, and Klaus, 1999; Zhang *et al.*, 1996); use of analgesics is less (Hodnett, 2002; Hodnett *et al.*, 2006; Hodnett and Osborn, 1989; Madi *et al.*, 1999; Prakyekeow Gacum, 1991; Sauls, 2002; Scott, Berkowitz, and Klaus, 1999; Scott, Klaus, and Klaus, 1999); use of epidural anaesthesia is less (Gordon *et al.*, 1999; Kennell *et al.*, 1991); maternal control during labour is greater (Hodnett and Osborn, 1989; Langer *et al.*, 1998; Prakyekeow Gacum, 1991); coping behaviour increases (Gordon *et al.*, 1999; Hofmeyr *et al.*, 1991; Pranee Sangrungnapaphan, 1988; Sujinda Threenate, 2001; Wirarat Sodsong,

2005); and labour pain is less (Hofmeyr *et al.*, 1991; Scott, Klaus, and Klaus, 1999; Sujinda Threenate, 2001; Zhang *et al.*, 1996).

There are benefits to babies of mothers who received social support as well. Babies have fewer 5-minute Apgar scores that are less than 7 (Hodnett, 2006; Sauls, 2002), are less frequently admitted to the neonatal intensive care unit (Klaus *et al.*, 1986; Zhang *et al.*, 1996), are more likely to be discharged within 48 hours (Kennell *et al.*, 1991; Zhang *et al.*, 1996), display more maternal-infant interaction behaviours (Matin *et al.*, 1998; Sosa *et al.*, 1980; Scott, Klaus, and Klaus, 1999), and have higher breast feeding initiation and duration rates (Hodnett, 2006; Hofmeyr *et al.*, 1991; Langer *et al.*, 1998; Scott, Klaus, and Klaus, 1999; Zhang *et al.*, 1996).

Furthermore, social support is associated with more positive childbirth experiences (Prakyekeow Gacum, 1991), less anxiety (Hodnett, 2006; Hofmeyr *et al.*, 1991; Pranee Sangrungnapaphan, 1988; Scott, Klaus, and Klaus, 1999; Wolman *et al.*, 1993; Zhang *et al.*, 1996), higher self-esteem (Hofmeyr *et al.*, 1991), and less depression six weeks after delivery (Hodnett, 2006; Wolman *et al.*, 1993).

Source of Support for Women during Labour and Delivery

Typically, social support during labour and birth that takes place in institutions is provided by formal support persons such as nurses or doulas. Increasingly, social support is also provided by more informal sources such as partners/husbands, female relatives, or friends. In a review of relevant research related to the types of individuals who can offer effective support during labour and birth, it was found that social support by (1) nurses, (2) monitrices (lay midwives), (3) doulas, (4) untrained lay women, (5) partner/husbands, and (6) female relatives was provided.

Nurse as support provider

In a randomized controlled trial (RCT) of nulliparous term women (n=413), benefits of one-to-one nursing support during labour and birth were compared with usual care at hospital in Quebec, Canada (Gagnon, Waghorn, and Covell, 1997). Participants were assigned to one-to-one care (n= 209) from a nurse who provided emotional support, physical comfort, and instruction for relaxation and coping techniques. The control group received usual care (n=204). Nurse-support reduced the need for oxytocin enhancement by 17 percent. Differences were not found in duration of active labour and rates of caesarean section, epidural analgesia, admission to neonatal intensive care units, instrumental vaginal delivery, and perineal trauma. Threats to internal validity in this study includes the potential for analytical bias due to inability to blind nurses to group assignment, the lasting effects of care that was initiated before randomization, and inadequate statistical power.

A RCT was conducted to determine the efficacy of nurses as providers of support during labour and birth in Canadian and American hospitals (Hodnett *et al.*, 2002). Women with live single or twin foetuses (n=6,915) who were 34 or more weeks' pregnant were assigned to either continuous labour support by a trained nurse (n=3,454), or usual care by a nurse who had not received the support training (n=3,461). Rates of caesarean delivery were almost identical in the 2 groups but that there was less use oxytocin augmentation, continuous electronic foetal monitoring, and regional analgesia in the experimental group. No differences were found in length of delivery, spontaneous vaginal delivery rates, perineal trauma, neonatal asphyxia, need for higher level of nursery care, or length of hospital stay. No differences were noted in women's perceived control during childbirth or in depression rates 6 to 8 postpartum weeks. Researchers concluded that husbands in the

experimental group provided less support than they would have because a nurse was continuously present.

Using a quasi-experimental design, the effects of nursing support during labour on pain coping behaviors and the perception of childbirth experience of first-time mothers were assessed at Ramathibodi hospital in Thailand (Wiparat Sodsong, 2005). The sampling was purposive and consisted of 60 labouring women. The experimental group (n=30) received nursing support during labour including emotional, informational, and tangible support in addition to usual nursing care; whereas the control group (n=30) received only the usual nursing care. Labour pain coping behavior in the experimental group was assessed as significantly higher than that of the control group, but there was no statistically significant difference in the perception of childbirth experience between the two groups. A limitation of this study was a lack of control over extraneous variables because randomization was not used for group assignment.

Monitrice as support provider

A Canadian stratified RCT of low-risk primigravid women was conducted to evaluate the efficacy of continuous, one-to-one support by a monitrice on childbirth outcomes (Hodnett and Osborn, 1989). One hundred and three women were randomly assigned either to the experimental (n=49) or the control group (n=54). The experimental intervention consisted of continuous intra partum professional support by self-employed birth attendants who provided emotional support such as encouragement, reassurance, continuous physical presence; informational support such as instructions, explanations, and advice; tangible support such as physical comfort measures; and advocated for the women when deemed necessary. Women who received this support were less likely to have medication for pain relief,

episiotomies, or oxytocin. However, continuous supportive care provided by a lay midwife had no evident effect on labour length.

Doula as support provider

In an American RCT continuous labour support by doulas was evaluated for healthy labouring women at term who were experiencing singleton pregnancies (n=412) (Kennell *et al.*, 1991). Women were randomly assigned to one of three groups, i.e. (a) those who received supportive care from doula (experimental group) (n=212), (b) those who had an observer in the room who did not speak to women (observed group) (n=200), and (c) those who had no doula or observer (control group) (n=204). Continuous labour support by a doula reduced the duration of active labour, use of epidural anaesthesia, caesarean section rate, and incidence of maternal fever and sepsis in the neonate. Researchers suggested that women with a supportive companion received enhanced medical attention.

In a Mexican RCT psychosocial support during labour, delivery, and the immediate postpartum period by a female companion (doula) was evaluated in low risk nulliparous women with a single foetus, whose cervical dilatation was less than 6 centimetres (cm) (Langer *et al.*, 1998). Seven hundred and twenty-four women were randomly assigned to (a) be accompanied by a doula (n=361) who provided emotional support, information, physical support, communication, and immediate contact between mother and baby, or (b) to receive routine care (n=363). The frequency of exclusive breastfeeding one month after birth was higher in the intervention group but there were no between-group differences related to full breastfeeding. More women in the intervention group perceived a high degree of control over their delivery experience and the duration of their labour was shorter than in the control group.

Untrained lay woman as support provider

The first study that was found where the effects of social support on maternal and fetal outcomes were examined was conducted in Guatemala (Sosa *et al.*, 1980). In this study, healthy nulliparous women in early labour were randomly assigned to an experimental group (n=20) who received constant support from an untrained lay woman from the time of admission until delivery or to a control group (n=20) who received routine care. The constant support consisted of physical contact such as rubbing the mother's back and holding her hand; conversation; and the presence of a friendly companion who the women had not previously met. Results showed that the average length of time from admission to delivery was a significantly shorter for the experimental group (8.7 hours) than the control group (19.3 hours). Researchers concluded that the combination of the crowed hospital conditions, the absence of prenatal preparation classes, and the unfamiliar hospital environment may have markedly increased maternal anxiety and exaggerated the effect of the support companion. The small sample size may have further affected possibility of making a Type II error.

In a RCT to determine the effect of social support provided by untrained lay women during labour on maternal and neonatal morbidity in a Guatamalean hospital, low risk primigravid women (n=416) were randomly assigned to receive emotional support consisting of either friendly conversation, explanation and encouragement as well as physical support in the form of back rubs and holding her hands in addition to the routine care (n=168); or to usual care (n=249) (Klaus *et al.*, 1986). Women who had supportive female companions had shorter labours, fewer caesarean sections, less oxytocin augmentation, and fewer infants that needed to be admitted to neonatal intensive care.

A RCT (n=189 nulliparous, low-risk, labouring women) was conducted to evaluate the provision of supportive and volunteer companionship by lay women in South Africa (Hofmeyr *et al.*, 1991). Participants who had no supportive companion with them were randomly allocated to the experimental group (n=92) or the control group (n=97). In the experimental group female volunteer companions stayed with the women to whom they were allocated as continuously as possible and used touch and speech to comfort, reassure, and praise the women. The control group was offered routine care. The experimental group reported that they felt that they had coped well during labour and reported less pain and anxiety. Six weeks following their birth, they were more likely breastfeed exclusively at flexible intervals. In the same study, Wolman and colleagues (1993) also reported that the group receiving support attained higher self-esteem scores, lower postpartum depression, and lower anxiety ratings 6 weeks after their delivery.

Partner/husband as support provider

Using a retrospective comparative design, childbirth outcomes of Hong Kong women whose husbands were present during labour were compared with those whose husbands were absent (Ip, 2000). Nulliparous women (n=63) recruited from childbirth education classes were allocated to either the experimental (n=45) or the control group (n=18). No differences were found in levels of maternal anxiety or pain or length of labour. For women whose husbands were present during labour, their wives used significantly higher doses of analgesia than those whose husbands were absent. There were several threats to the validity of this study. Participants were not randomized to groups which limits experimental control over extraneous variables. A further threat was the small sample size and differences in the number of women in each group.

A quasi-experimental research study was conducted to determine the effects of husband participation during labour on the anxiety and coping behaviors of primigravidas at Srinagarind hospital Khonkaen province, Thailand (Pranee Sangrungnapaphan, 1988). The sample consisted of 20 pairs of primigravida women purposively selected and matched by occupation and education. The experimental group whose husbands participated during labour showed significantly lower anxiety and better coping behavior than the control group who were alone. However, a randomized sampling strategy was not used and the sample was small in this study.

An experimental research design was used to study the efficacy of husbands' assistance to their wives during the first stage of labour at a hospital in Chiang Rai province, Thailand (Prakyekeow Gacum, 1991). Sixty primigravid women were selected for the experimental (n=30) and control groups (n=30) using a sampling process whereby women were matched according to their education and career. The primigravid women who were assisted by their husbands demonstrated significantly higher self-control and had less need for pain medication. They had a shorter labour, and better perception of their birth experience than those who had no assistance. However, methodological problems limited the validity of the study's findings since a randomized sampling strategy was not used.

In a quasi-experimental Thai study, the effects of a childbirth preparation program were evaluated. In the program support by husbands to reduce pain and assist with coping was evaluated (Sujinda Threenate, 2001). The sample of primigravida women (n=30) who attended a prenatal clinic and were later admitted to the labour and delivery unit was purposively selected and assigned to experimental (n=15), or control groups (n=15). Pain levels and pain coping behaviours during delivery of women who received the childbirth preparation program emphasizing

husbands support was lower than the group that received normal preparation. Since a randomized sampling strategy was not used and the sample was small, findings must be viewed with caution.

Using a quasi-experimental design, the effects of husband preparation for spousal support during labour on satisfaction levels for both husbands and wives and pain coping behaviours was examined at a Thai hospital (Boonsong Supradith, 2002). The sampling was purposive and composed of 60 first-time parents. Husbands in the experimental group were taught support measure during the antenatal period (n=30); those in the control group were prepared after labour commenced (n=30). Husbands in both groups were allowed to support their wives during labour. No differences were found between groups in levels of paternal or maternal satisfaction or in maternal pain coping behaviours.

Female relative as support provider

In a RCT the effectiveness of a female relative as a labour companion to low-risk, primigravida women (n=109) was evaluated in Botswana, Southern Africa. Participants were randomized to an experimental group (n=53) who had a female relative with them during labour in addition to routine care, or a control group (n=56) who received routine care (Madi *et al.*, 1999). Women in the experimental group were more likely to have a spontaneous vaginal birth and to have less analgesia, less oxytocin, fewer amniotomies, fewer vacuum extractions, and fewer caesarean sections than those in the control group. However, researchers suggested that many questions still remain for example: What characteristics of support are important? When should the support role begin? What is the process by which support influences outcomes? A limitation of this study was the small sample size.

Based on a review of the relevant literature, social support provided by nurses or monitrices was not as effective as that provided by doulas, untrained lay women, or female relatives. These were no beneficial effect on duration of labour (Gagnon, Waghorn, and Covell, 1997; Hodnett *et al.*, 2002; Hodnett and Osborn, 1989), rates of spontaneous vaginal delivery (Hodnett *et al.*, 2002), rates of operative delivery (Gagnon, Waghorn, and Covell, 1997; Hodnett *et al.*, 2002), and maternal perception of the childbirth experience (Wiparat Sodsong, 2005). Rosen (2004) analyzed eight published reports of labour support by nurses, monitrices, trained lay women (doulas), untrained lay women, and female relatives. Support by untrained lay women, starting in early labour and continuing into the postpartum period, provided the most consistent beneficial effect on childbirth outcomes. Untrained lay women provided the friendly support in previous studies, but similar or greater benefits may be expected when a relative remains with women throughout the labour and delivery (Sosa *et al.*, 1980).

In Thailand, we do not use doulas or untrained lay women in attendance during labour and delivery. Studies about social support provided by nurses (Wiparat Sodsong, 2005) and husbands (Boonsang Supradith, 2002; Prakyekeow Gacum, 1991; Pranee Sangrungnapaphan, 1988; Sujinda Threenate, 2001) have been reported. Although, in many studies the beneficial effects of social support by nurses and husbands on childbirth and psychosocial outcomes are offered, both nurses and husbands have limitation in providing support. Nurses who are responsible for women and their babies well-being, even if capable of providing good support, are frequently employed in a system wherein they must give an individual woman a lower priority than their general clinical duties and their personal needs for breaks, sleep, and time off. Emotional and physical support may be given sporadically because of

clinical duties that cannot be postponed (Simkin and Friederick, 2000). Furthermore, the presence of husbands during labour is impracticable or unworkable because many Thai men seem to be uncomfortable, unconfident, and incompetent to meet either the psychological or physical needs of labouring women (Leventhal *et al.*, 1989). Husbands may find it hard to provide support during labour because of their own emotional involvement with their wives, babies, and the birth process (Nolan, 1995; Simkin and Friederick, 2000). In addition, Ip (2000) found that when husbands were present during labour, their wives used significantly higher doses of analgesia because the husband advocated this for his wife by requesting pain relief for her. One also has to consider that the presence of husbands may not be acceptable to other labouring women in crowded maternity units.

Support from close female relative seems to be needed and applicable. In a focus group (n=8) of postpartum Thai women, some wanted their relatives to be with them because they felt that they did not receive enough support from their health care providers. Many women said that it was good if one relative could be with them during labour. Some women reported that they would like to receive social support from their close relatives because they feel more comfortable asking for help from them (Chunuan, Kala, and Kochapakdee, 2004).

In a qualitative study, the views of 84 Zambian mothers and 40 health care providers were explored with respect to allowing women to be attended by a supportive companion during labour (Maimbolwa, Sikazwe, Yamba *et al.*, 2001). Most thought that welcoming and including support persons in maternity units would be beneficial because female relatives could help both labouring women and health care providers. Most health care providers further noted that informal support persons could help labouring women by giving them a sense of security. They noted that

hospital policy was the main reason for not allowing a family member or friend to stay with labouring women; the rationale was that social support persons could be a source of infection and that there was limited space in the maternity units. These are the same reasons that are given for restricting the presence of support persons for labouring women at public hospitals in Thailand. The concern about infection would seem to be unfounded because it has been shown that having visitors in a hospital setting is not associated with increased morbidity for mother or baby (Williams & Thomas, 1969; Unphenour, 1980 cited in Maimbolwa, Sikazwe, Yamba *et al.*, 2001). As for restricting the availability of support persons because of limited space, it is important to consider the beneficial effects of a support person on childbirth and psychosocial outcomes, thus ensuring that making space for them would become a priority.

One crucial goal of maternal care is to focus on a family-centered approach. As support persons, families are present during births at most American hospitals (Kroger, 2004). Social support has appeared in increasing numbers of official and legal documents as well as national and global initiatives (Pascali-Bonaro & Kroeger, 2004). For example, when the Society of Obstetricians and Gynaecologists of Canada's 1995 guidelines on management of dystocia, it was stated that the continuous availability of a caregiver to provide support should be a key component of all intra partum care programs designed for prevention and treatment of dystocia. In the Mother-Friendly Childbirth Initiative, it is further reported that the mother-friendly hospital or birth center should offer all women unrestricted access to birth companions of their choice. These support persons could include fathers, partners, relatives, and friends. In a Global Health Council document, it is stated that companionship by a family member or lay caregiver during labour improves maternal

satisfaction, shortens labour, improves the duration of breast feeding, and reduces the need for pain relief and operative delivery. Every intra partum woman has the right to be accompanied by a person she trusts, or if there is no one, then by somebody especially trained to provide emotional support.

Social Support by a Close Female Relative as Nursing Intervention

A RCT was conducted in Botswana to evaluate the effectiveness of a female relative as a supportive intervention. Participants were randomized to an experimental group who had a female relative with them during labour in addition to routine care, or a control group who received routine care only (Madi *et al.*, 1999). Although, in this study, remarkable outcomes were reported, the mere physical presence of a female relative is not enough (Enkin *et al.*, 2000). Support persons must engage in supportive activities, which encompass both physical comfort measures and an emotional presence in response to a woman's own needs and wishes. Her support companion may walk with her, message her back, offer her food and fluids, help her to find a comfortable position, or assist her with a bath or shower. The supportive person can also provide comfort measures such as counter pressure, ice packs or hot water bottles to painful areas of her body and assist her to use breathing patterns that may help her relax. Emotional support may include maintaining eye contact and providing information, praise, and encouragement. Thus, social support by a close female relative is appropriate to provide an emotional presence as well as specific comfort and support measures for labouring women.

How to choose support person

Choosing the appropriate close female relative to provide support during labour and birth is very important. The following questions should be seriously considered by pregnant women when they are making a decision about who would provided them intra partum support: (1) can you (labouring woman) count on her to come?, (2) does she want to be there?, (3) are you comfortable with her?, (4) will she give you appropriate support?, (5) how might she deal with the unexpected?, (6) will she be willing to attend a special educational session to prepare for the birth? (Hawkins and Knox, 2003). In addition, a close female relative who has experienced straightforward birth may be a stronger source of support. The type of support person most unlikely to support you is someone who: (1) needs direction and attention, (2) reacts badly under pressure, (3) does not acknowledge the midwives' role, and (4) is not confident that you can have a natural birth (Hawkins and Knox, 2003).

When to begin a close female relative role

Using available evidence about when to begin a supportive role during labour, it is recommended that social support by an untrained lay woman (Klaus *et al.*, 1986) or doula (Kennell *et al.*, 1991) begin on admission to labour ward and continue until 2 hours after the birth. In a study about the effects of continuous intra partum professional support, social support by a monitrice was provided continuously during early labour at home as well as during active labour on the maternity unit, childbirth and 1 to 2 hours post partum (Hodnett and Osborn, 1989). This study seems to give appropriate time for a close female relative in providing support to labouring woman.

Role of a close female relative

The supportive care provided by close female relatives and nurses may overlap but if care is planned and coordinated, the roles of both should be complementary in providing support to labouring women; both have different and important roles to fulfill on the labour unit. A close female relative supports labouring woman by staying her side continuously throughout labour and birth and providing emotional support and physical comfort. Nurses work shifts so may not be present for an entire labour. In addition they have clinical responsibilities, paperwork, and provide care to more than one labouring woman simultaneously. A beneficial nursing intervention that could enhance maternal care would be to prepare and support a female relative who would provide support to an intra partum family member on labour units at public hospitals in Thailand. The close female relative would be a valuable resource for both labouring women and nurses. Examples of activities that could be performed by close female relatives in Thailand are listed in Table 2.3.

Table 2.3 Supportive role of a close female relative

Time points	Activities
Home	• Stay with woman in early labour and accompany her from home to labour unit when there is an indication that labour is becoming active
Labour unit	• Stay with labouring woman as continuously as possible from early labour until 2 hours after the birth except for short meals and bath room breaks • Providing emotional support to intra partum woman o Talking and maintaining eye contact as needed o Holding her hand, touching, or hugging as needed o Encouraging and praising maternal efforts as needed • Provide physical comfort o Assisting with ambulation and helping to find a comfortable position o Using cool cloths on forehead o Massaging painful areas such as lower back, upper tight o Effleurage on abdominal o Coaching breathing through contractions o Coaching pushing efforts during delivery
Two hours post partum	• Encouraging breastfeeding • Looking after mother and baby

Trained versus untrained a close female relative

Resen (2004) analyzed eight randomized controlled trials where labour support provided by trained and untrained lay women, female relatives, nurses, and monitrices was evaluated. It was reported that support by untrained lay women starting in early labour and continuing into the postpartum period consistently had the most beneficial effects on childbirth outcomes. In another study where the views of mothers and health care staff on involving a support person during labour in Zambian maternities was explored (Maimbolwa *et al.*, 2001). It was found that although most mothers wanted to have a support person present during labour they said that support persons lacked training in maternity care and thus, were not competent to stay with a

labouring woman. Maimbolwa and colleagues suggested that one way to deal with this is to evaluate the effectiveness of allowing the support person to be present during antenatal care preparation for childbirth. It is reasonable to hypothesize that support by a close female relative will enhance maternal well-being and improve outcomes for mother and baby. It is also to assume that the close female relative will need information, environment, and support if she is to be on effective nursing intervention that will improve maternal/newborn outcomes.

Training course

Since the labouring woman and close female relative may both be busy or have other responsibilities, it might be easier to prepare them for giving and receiving support during the intra partum period if all of the information can be provided to them during 1-2 preparation classes that focus on information and practice. However, some important topics such as role of a close female relative and supporting techniques may be reviewed again when a close female relative accompanies a labouring woman to labour unit. The aim of having them attend the class together is to provide information about how to provide emotional and instrumental support to a labouring woman and how to interacting on the maternity ward. The focus will be the provision of basic information about the process of childbirth as well as suggestions for enhancing emotional and physical comfort. The preparation class should cover the following topics:

- The basic knowledge of childbirth
- Hospital care and procedures during labour and birth
- Role of a close female relative during labour and birth
- Techniques to promote comfort such as positioning, cold compresses, massage, effleurage, breathing and pushing techniques

- Early labour preparation for labouring women
- When to go to hospital
- How a close female relative behaves in a labour unit
- Hospital tour and answer questions posed by the maternal/close female relative dyad

Factors Related to Outcome Variables

In previous studies found in the social support in childbirth literature, it has been suggested that several childbirth outcomes, particularly duration of active labour, incidence of spontaneous vaginal delivery, and satisfaction with the childbirth experience would be especially sensitive to the effects of support from a close female relative during labour and delivery. The outcome variables are considered in the following:

Duration of active labour

Labour is divided into four stages (Murray and McKinney, 2006). The first stage of labour begins with the onset of true labour contractions and ends with complete dilatation (10 cm) and effacement (100%) of the cervix. The duration of first-stage labour averages 8 to 10 hours (range of 6 to 18 hours) for nulliparous women and 6 to 7 hours (range of 2 to 10 hours) for the multiparous women. This stage has two phases: latent and active.

The latent phase is slow and gradual and the initial opening of the cervix, may occur one to two days for a primiparous woman. It is very light contractions that may 20 minutes or more apart, gradually becoming closer, possibly up to five minutes apart. The cervix dilates (opens approximately three centimeters) and effaces (thins

out). Some women may not recognize that they are labour if their contractions are mild and irregular. The duration of latent labour averages 8 hours and 30 minutes for nulliparous women and 5 hours and 30 minutes for the multiparous women. Obstetric textbooks usually define the active labour according to cervical dilatation endpoints in the presence of regular uterine contractions, starting at 3-4 centimeters and ending at complete dilatation. The onset of the active labour indicates that the latent labour has been completed. When the active labour commences, uterine contractions progressively increase in frequency, intensity, and duration, and the rate of cervical dilatation increases (Albers, 2007). Contractions become more frequent usually 3 to 4 minutes apart and get stronger, lasting 45 seconds. Zhang, Troendle, Yancey (2002) calculated the labour curves of 1329 women at term with singleton fetuses in vertex presentation, who were in spontaneous labour, and verified that most nulliparas enter the active phase between 3 centimeters and 5 centimeters cervical dilatation. A study was to measure the duration of active labour in low-risk women who did not receive oxytocin or epidurals (n=2511) in nine hospitals in the United States in 1996; findings found that the mean length of the active phase, first stage was 7.7 hours for nulliparas and 5.6 for multiparas (Albers, 1999).

The second stage begins with complete dilation and full effacement of the cervix and end with the birth of the baby. The mean length of second stage was 54 minutes for nulliparas and 18 minutes for multiparas (Albers, 1999). The third stage begins with the birth of the baby and ends with the expulsion of the placenta. This stage is the shortest, lasting up to 30 minutes, with an average length of 5 to 10 minutes. No difference in duration exists between nulliparous women and multiparous women. The fourth stage of labour is the stage of physical recovery for the mother and infant. It starts from the delivery of the placenta and lasts through the

first 1 to 4 hours after birth. The effect of duration of active labour was considered because a reduction may have an impact on a women's well-being such as shortening the often painful labour experience, and on the costs for the health institution (Langer *et al.*, 1998).

Factors related to duration of active labour

Based on a review of the relevant literature, factors reported to be related to duration of labour were as follows:

1. Parity

The duration of active labour is different for women who have never given birth and for those who have previous given birth vaginally. Multiparous women usually deliver more quickly than nulliparous women (Murray and McKinney, 2006). In a study by Gross, Drobni and Keirse (2005) investigated what influences the duration of first stage labour in women with spontaneous labour and childbirth in a nonclinical setting. Researchers selected women for absence of pathology, absence of intervention, and completeness of data. Duration of first stage labour was analyzed with regression analysis for duration data or time-to-event analysis. The effects of fixed (age, parity, education, antenatal classes, infant birth weight, first cervical assessment) and time-varying factors (start of midwifery care, spontaneous rupture of) membranes) in labour were estimated with piecewise constant exponential hazard models. Findings revealed that only parity had a strong effect on the duration of first stage labour. In addition, cervical dilatation at first assessment and time varying factors, such as the timing of spontaneous rupture of membranes and midwifery care, each had a strong influence on labour duration; however, the sequence in which they occurred exerted an even stronger influence. First stage of labour was much shorter if the membranes ruptured before rather than after the start of care.

2. Characteristics of working

To study the factors influence on facilitation delivery and dystocia of primigravida women, Prapaiwan Danpradit (2002) was conducted survey research at Taksin Hospital during October, 2000 to September, 2001. Participants consist of 100 cases who met criteria: normal delivery, singleton, vertex presentation, and no complication in each group of facilitation (50 cases) and dystocia delivery (50 cases). Facilitation delivery group referred to duration of first stage labour 6 hours or less but were not less than 2 hours while dystocia delivery group referred to duration of first stage labour 22 hours or more. The results revealed that the factors effect on facilitation and dystocia delivery were characteristics of working during pregnancy. In facilitation delivery group showed that the major of working characteristics were physical moving such as working or standing (92.0%) and sitting (88%).

3. Active management

A RCT was to evaluate the efficacy of active management in duration of active labour among primiparours women. Researchers randomly assigned 1934 nulliparous women at low risk of complications of pregnancy, before 30 weeks' gestation, to active management of labour or to a usual-care group. The components of active management were customized childbirth classes; strict criteria for the diagnosis of labour; standardized management of labour, including early amniotomy and treatment with high-dose oxytocin; and one-to-one nursing. A low-risk subgroup was defined as including women with full-term, uncomplicated pregnancies who spontaneously went into labour (the protocol-eligible subgroup). Women meeting these criteria who had been randomly assigned to the active-management group were admitted to a separate unit where their labour was managed by trained, certified

nurse-midwives. In the protocol-eligible subgroup, the median duration of labour was shortened by 2.7 hours by active management (Frigoletto *et al.*, 1995).

Other factors reported to be related to duration of labour included body size, height, pelvic diameters (Prapaiwan Danpradit, 2002), midwifery care (Gross, Drobni and Keirse, 2005), social support during labour and delivery (Langer *et al.*, 1998; Kennell *et al.*, 1991; Klaus *et al.*, 1986; Pascoe, 1993; Prakyekeow Gacum, 1991; Scott, Berkowitz, and Klaus, 1999; Scott, Klaus, and Klaus, 1999; Sosa *et al.*, 1980; Zhang *et al.*, 1996). Moreover, factors associated with longer labours were electronic monitoring, ambulation, maternal age over 30 years, and narcotic analgesia (Albers, 1999).

Effect of support on duration of active labour

It was reported in several research reports, reviews, and meta-analysis that women who had support female companions throughout labour and delivery had a significantly shorter duration of labour (Langer *et al.*, 1998; Kennell *et al.*, 1991; Klaus *et al.*, 1986; Pascoe, 1993; Prakyekeow Gacum, 1991; Scott, Berkowitz, and Klaus, 1999; Scott, Klaus, and Klaus, 1999; Sosa *et al.*, 1980; Zhang *et al.*, 1996). The shorter duration was reported from one to ten hours. The mechanism by which social support is presumed to help the women is as a mediator of stress. The primary theorized mechanism of social support involves the cycle of fear-tension-pain (Dick-Read, 2005). It is hypothesized that escalating pain increases tension and anxiety during labour, which leads to an endogenous release of catecholamine, thus lowering uterine contractility with a resulting prolonged duration of active labour. Less anxiety decreases catecholamine levels, thereby improving uterine contractility and reducing the risk of prolonged labour (Lederman *et al*., 1978, 1985; Kennell *et al*., 1991).

Spontaneous vaginal delivery

Labour is the process by which the fetus, placenta and membranes are expelled through the birth canal. Normal labour or spontaneous vaginal delivery occurs between 37 and 42 weeks gestation. It defined by the World Health Organization (WHO) as low risk throughout, spontaneous in onset, with the fetus presenting by the vertex, culminating in the mother and infant in good condition (Matin and Hutchon, 2004). The normal mechanism of labour related to posturing and positioning that allows the baby to find the "easiest way out." For the most part the fetus is a passive respondent in the process of labour, while the mother provides the uterine forces and structural configuration of the passageway through which the passenger must travel. For a normal mechanism of labour to occur, both the fetal and maternal factors must be harmonious.

Factors related to spontaneous vaginal delivery

Spontaneous vaginal delivery is process by which a woman give birth a baby naturally. It implies that the birth occurred without the need for forceps, vacuum, or any other instrumentation. This term does not imply that every part of the birth was without medical care or intervention (Levine, 2006). Spontaneous vaginal delivery is influenced by three factors; passage, passenger, and power (Martin and Hutchon, 2000). If a woman has problem giving birth spontaneously, it is because of the misalignment of one of these factors. The first delivery problem occurs with passage when the woman's pelvis is too small. Another reason for failed spontaneous delivery may be due to the passenger that is the baby. The infant is sometimes too large for her body to deliver. Regarding power, the frequency of uterine contraction may be adequate but the intensity inadequate (Chen, n.d.).

There are also other types of delivery such as forceps extraction, vacuum extraction, and caesarean delivery. Forceps extraction refers to the use of forceps (metal instruments specially designed to guide the baby's head) to assist in the mother's efforts of pushing the baby out of the birth canal. Reasons to perform forceps delivery can be related to situations in the baby or the mother. It is an option when the baby show signs of abnormal heart rate. Other indications include compression of the umbilical cord, premature separation of the placenta, failure of progress in the second stage of labour, or when the second stage of labour should be shortened because of a medical condition (Levine, 2006).

Vacuum extraction is a suction device applied to the baby's head to allow the doctor to help deliver the baby by pulling and possibly repositioning the baby's head within the birth canal. Vacuum delivery may be indicated because of reasons related to the mother or reasons related to the baby. The vacuum extraction is used when rapid delivery is necessary to avoid injury to the baby and to avoid caesarean section. The main indications for a vacuum delivery includes (1) prolong labour, (2) maternal exhaustion, (3) dense epidural anesthesia, (4) maternal medical conditions, (5) evidence of fetal problem, and (6) correction of an abnormal position of the baby's head (Levine, 2006).

Caesarean section is an operation performed by an obstetrician to delivery a baby through an incision in the mother's abdomen. Caesarean section is performed when spontaneous vaginal delivery is not safe for mother and/or baby or when delivery must happen sooner rather than later. There are a number of reasons why a doctor may choose to perform a caesarean section. Failure to progress in labour is the most common indication for performance of caesarean section. There are two main incidents that can cause the suspension of labour: the mother's cervix may stop

dilating (two hours or more) or, after the cervix has completely dilated, the baby may fail to descend through the birth canal (after two hours of pushing). Other main reasons for caesarean section include fetal distress and fetus in the wrong position (mal presentation) (Levine, 2006).

Effect of support on spontaneous vaginal delivery

The findings of a meta-analysis showed that women with a doula support were twice as likely to have a spontaneous vaginal delivery and 50 percent less likely to have a forceps or cesarean delivery (Zhang *et al.*, 1996). Moreover, when a RCT was conducted to evaluate the effectiveness of a female relative as a labour companion, it was reported that women who had a female relative accompany them during labour were more likely to have a spontaneous vaginal delivery and less likely to have a vacuum extraction or caesarean delivery than those who had no female relative (Madi *et al.*, 1999). The mechanism of social support to improve outcome was that less anxiety would decrease catecholamine levels, thereby improving uterine contractility and reducing foetal distress by increasing placenta blood flow (Lederman, 1978, 1985). Thus, women who received support during labour and delivery have a greater incidence of spontaneous vaginal delivery.

Satisfaction with the childbirth experience

Satisfaction involves a positive attitude or affective response to an experience as well as a cognitive evaluation of the emotional response (Ross, 1998). Patient satisfaction is used by health care providers, administrators and policymakers to assess the quality of care make decision about the organization and provision of health care services, avoid malpractice litigation and maintain a competition edge in the health care arena (Goodman, Mackey, and Tavakoli, 2004). Understanding women's satisfaction with their childbirth experience is relevant to health care

providers, administrations, and policymakers as an indicator of maternal perception of the quality of her care (Hodnett, 2002).

Satisfaction with the childbirth experience is a complex variable that is difficult to define and measure (Johnston-Robledo, 1997). There is little definition consensus regarding satisfaction with the childbirth experience. Knapp (1996) defined satisfaction with the childbirth experience as a women's perception of her birth experience. A woman's satisfaction with her childbirth experience also has implications for the health and well-being of a woman and baby. The woman's satisfaction with her childbirth experience may have immediate and long-term effects on her health and her relationship with her infant (Goodman, Mackey, and Tavakoli, 2004). Satisfaction with the childbirth experience has been reported to contribute to a woman's sense of accomplishment and self-esteem (Simkin, 1991, 1992) and has led to expectations for future positive childbirth experiences (Slade *et al.*, 1993).

Satisfaction with a method of clinical management may involve how well the expectations and needs of labouring women were met (Bramadat and Drieger, 1993). A positive experience is derived from being able to participate actively in the birth experience and maintain a sense of control (Hodnett and Simmons-Tropea, 1987). Having expectations met and feeling a high level of personal control has consistently been associated with childbirth satisfaction. However, sometimes researchers have used the concept of personal control as an indicator of satisfaction (Goodman, Mackey, and Tavakoli, 2004). Women evaluation childbirth satisfaction based on the amount of personal control that they experience during labour and delivery (Simkin, 1991, 1992; Mackey, 1995, Walker *et al.*, 1995).

Factors related to satisfaction with the childbirth experience

It was reported in systematic reviews (Goodman, Mackey, and Tavakoli, 2004; Hodnett, 2002) that factors related to satisfaction with the childbirth experience were: (1) Expectation of nursing care. Women whose expectations for labour and delivery were met have reported higher satisfaction with their childbirth experience compared with those expectations were not met. (2) Health care providers' attitudes and behavior. The quality of women's relationship with and support from their health care providers during labour, in particular as regards nurses and midwives, are consistent strong predictors of satisfaction with the childbirth experience. (3) Participation in decision making. Having an active say in decisions about one's care was found to be an important dimension of women's satisfaction with their childbirth experience. (4) Labour pain. Labour pain is one factor related to satisfaction with the childbirth experience. Women who have experienced less labour pain have reported higher levels of satisfaction with the childbirth experience compared with women with more labour pain.

Others factors reported to be influential in satisfaction with their childbirth experience included previous pregnancy and birth experience (Charles *et al.*, 1978; Geary, Fanagan and Boylan, 1997), present childbirth experience and health outcomes of mother and baby (Seguin *et al.*, 1989), presence of a support person (Slade, 1993; Wilcock, Kobayashi and Murray, 1997), information/prenatal classes (Green, Coupland and Kitzinger, 1990; Wilcock, Kobayashi and Murray, 1997), duration of labour (Slade, 1993), intra partum medical intervention (Hodnett, 2002), and birth environment (Hodnett, 2002).

Effect of support on satisfaction with the childbirth experience

In several research reports, reviews, and meta-analysis the effects of social support on women's views of their childbirth experience were evaluated. Women who received continuous social support reported greater personal control during labour and birth (Hodnett and Osborn, 1989; Langer *et al.*, 1998; Prakyekeow Gacum, 1991), higher coping behaviour during labour (Gordon *et al.*, 1999; Hofmeyr *et al.*, 1991; Pranee Sangrungnapaphan, 1988; Sujinda Threenate, 2001; Wiparat Sodsong, 2005), higher satisfaction with the childbirth experience (Langer *et al.*, 1996), and more positive childbirth experiences (Prakyekeow Gacum, 1991).

Having a support person present may have influenced maternal feelings of satisfaction with the childbirth experience in several ways. Firstly, preparation classes can lead to greater satisfaction with the childbirth experience. It has been reported that women who attend a preparation class are more satisfied with their family member's participation during childbirth than those women who do not receive a preparation class (Goodman, Meckey, and Tavokoli, 2004; Hart and Foster, 1997; Quine *et al.*, 1993). Secondly, presence of a support person was one of the important factors associated with satisfaction with the childbirth experience (Bramadat and Driedger, 1993; Lipson and Telden, 1980; Littlefied and Adams, 1987; Mercer, Hackey and Bostrom, 1983; Mercer and Stainton, 1984). The presence of support person resulted in the maternal perception that someone who was present and that she would not be left alone. Lastly, it is asserted in psychological theory that in the presence of a companion, women feel empowered and more in control of their labour because they know that someone caring about them will always be there and could be called on to help if needed. With this belief the women are less likely to be as

anxious as those without companions, who may be afraid and uncertain (Lefcourt, 1984 cited in Madi *et al.*, 1999).

Conclusion

In Thailand, public hospitals have not yet allowed any relatives to be in labour and delivery rooms. As literatures have indicated that women, especially primiparous women, giving birth have to deal with their labour pain, anxiety, stress, unfamiliar environment alone. Social support is hypothesized to reduce maternal stress and improve childbirth outcomes including the duration of active labour, incidence of spontaneous vaginal delivery, and the level of maternal satisfaction with the childbirth experience. The most significant sources of social support are close relatives who are considered to be the first-order social network. The components of social support that have been reported to be helpful and applicable for women during labour and delivery are that support person must engage in supportive activities, which encompass both emotional and physical support.

CHAPTER III

METHODOLOGY

In this chapter the methodology that will be used for the proposed study will be described. The description includes the research design, population from which sample will be drawn and sampling strategy; experimental intervention, research instruments, and data collection procedures. Potential threats affecting the internal validity and reliability of the study findings will be discussed and steps taken to minimize these threats will be described. In addition, strategies to protect human research subjects in this study will be detailed. Finally the descriptive and inferential statistical analyses to be employed in this study will be explained.

Research Design

The design for this study was a posttest-only control group design (Burns and Grove, 2001; Sullivan-Bolyai, Grey, and Singh, 2005). In this design, participants were assigned randomly (R) to the experimental or the control group. The experimental intervention (X) was given only to those in the experimental group, and the posttests (O_2) are those measurements of the dependent variables that were made after the experimental intervention was introduced (Figure 3.1). Because of the nature of the proposed research; it was not possible to conduct pre tests in that outcomes could only measured after labour has been taken place. However, equivalency between groups on the demographic and obstetric variables that may contribute to

differences in the dependent variables was assessed and controlled during the statistical analysis.

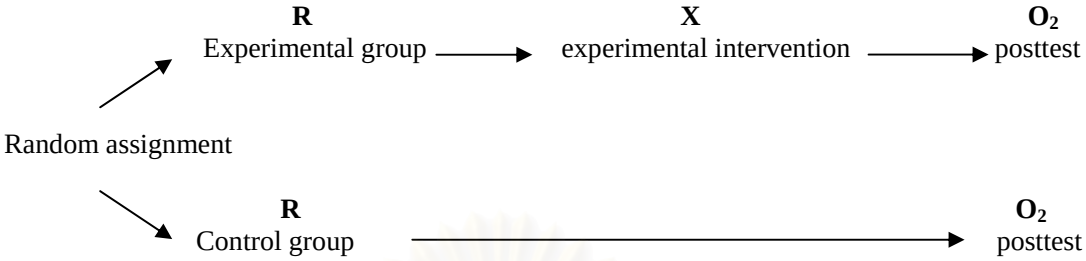

Figure 3.1 Posttest-only control group design (Sullivan-Bolyai, Grey, and Singh, 2005, p. 251)

Population and Sample

The population from where the sample would be recruited was primiparous Thai women who attended an antenatal clinic at Chonburi Hospital.

Inclusion criteria

Women would be included if they met four criteria. (1) A singleton fetus and presumed cephalic presentation, because we were comparing normal childbirth experience. (2) Pregnant at 36 weeks' gestation age or more, because it was close to term labour to control for the effect of attrition due to maternal obstetric complications after enrollment, as well as the focus was to prepare the close female relative at least one week prior to the expected date of confinement (EDC). This time was selected to ensure adequate time for recruiting a close female relative and appropriate preparation of the close female relative as a support companion. (3) Aged 18-30 years, because age less 18 years was teenage pregnancy (high risk pregnancy) and age over 30 years was associated with longer labour (Albers, 1999). This criterion was to control the effect of duration of active labour. (4) A close female

relative who was willing to remain them (i.e., the labouring women) for the duration of labour and delivery, to control for effect of attrition.

Exclusion criteria

Women would be excluded if they (1) were multiparous women, to control for effect of duration of active labour and previous pregnancy and birth experience; (2) had obstetric complications prior to the onset of term labour, because it put the women and babies at risk for health and attrition; (3) planed a caesarean section, to control for effect of attrition; and (4) received extra care from private obstetricians, because women might stand a chance of caesarean section as their request.

Randomization

Convenience sampling was used to recruit participants five days a week. Women who met the inclusion criteria was randomly assigned to either the experimental group who received a close female relative support of their choice as well as usual care, or control group who received usual care only. Group assignment was done using a simple computerized randomization and made before the procedure by using sealed envelopes with numbers previously assigned by random number list of GraphPad Software program (http//:www.graphpad.com./quickcalcs/randomize2.cfm). This technique minimizes the possibility of imbalance among potentially confounding variables and achieves better balance between the experimental and control group assignment (Conlon and Anderson, 1990; Zeller *et al.*, 1997). One would assume equivalence between groups based on randomization and sample size.

Sample size

It was reported in a previous study that was similar to the present study that when the social support intervention was effective, the duration of labour was shortened by approximately 1 hour (60 minutes) (Langer *et al*., 1998). This would be at least a medium effect in that the duration of active labour would be reduced from about 6 to 5 hours (i.e., > 15% reduction in duration of active labour). This reduction would also be viewed as clinically important. Therefore, if the sample size is calculated based on a medium effect size (defined by Cohen as .50) using conventional values for power 0.80 and a one-tailed test at the level of significance .05, it will be necessary to enroll 50 women in each group (Cohen, 1988, p. 54; Munro, 2001, p. 128).

It was important that attrition be anticipated and that sample size be increased to accommodate potential "drop outs". It is not likely that many will drop out but reasons for this might include members of the study group going into labour before their close female relative can be prepared to provide support; encountering major obstetric complications after enrollment and prior to the onset of labour that precludes the presence of a close female relative; and a personal decision to not participate after signing consent. To accommodate these possibilities the sample size would be increased by 20%. Therefore, the final sample size will be 60 in each group.

Setting

This study was conducted at Chonburi Hospital, which has about 782 beds and is a regional, urban teaching hospital. It is a central (provincial) hospital in the eastern part of Thailand. Each month the Chonburi Hospital served about 525 parturients, of which 228 of theses were primiparous women (September, 2006).

Experimental Intervention

There are three steps of the experimental intervention in this study; invitation, preparation class, and providing support activities during labour and delivery

Step 1: Invitation

Woman in the experimental group (pregnant woman at 36 weeks gestation or more) would be asked to bring a close female relative that she chooses to her next antenatal appointment (i.e., in 1 week) (when pregnant woman at least 37 weeks gestation age). The researcher also advised the pregnant woman to choose a close female relative who: (1) can count on her to come, (2) wants to be there, (3) woman feels comfortable with her, (4) will give appropriate support, (5) might deal with the unexpected events, (6) will be willing to attend preparation class, (7) is healthy, and/or (8) has experienced straightforward birth.

Step 2: Preparation class

The intervention was aimed at having a close female relative as a support companion for the labouring woman. The purpose was to prepare the close female relative at least one week prior to the EDC. This time was selected to ensure adequate time for recruiting close female relative and appropriate preparation of the close female relative.

At the next antenatal appointment, both the participant and the close female relative that she chooses would attend a preparation class about the support roles for woman during labour and delivery. This was done so that the anticipated female relative would receive adequate information regarding the basic knowledge of childbirth, the labour unit routine, learn how to be supportive during labour and

delivery, and learn what she can and cannot do at the hospital. The pregnant woman and her close female relative would also participate in a tour of the labour unit in order to prepare for the physical environment as well as able to provide supportive activities that encompassed both emotional support and physical comfort during labour and delivery. A lesson plan is presented in Appendix E.

Step 3: Close female relative provides support activities during labour and delivery

When a pregnant woman in the experimental group believed that she was in labour, a close female relative would accompany her to labour unit. When participant labouring woman and her close female relative were admitted to the labour unit, intra partum staff nurse would phone the researcher. The researcher would be there within 30 minutes and then introduce the close female relative to nursing staff and reviewed her supportive roles during labour and delivery. After that, the close female relative provided support activities for her labouring relative until 2 hours after delivery. During this time, the researcher would also monitor and encourage the close female relative once she was on the labour unit with her labouring relative to ensure that she provided the emotional support and physical comfort as instructed. Instruction to close female relatives included the following:

1. Being with labouring woman as continuously as possible from early labour (admission) until 2 hours after the birth except for short meals and bath room breaks.

2. Providing emotional support

2.1 Holding the woman's hand, touching, or hugging as needed

2.2 Talking to her and maintaining eye contact as needed

2.3 Encouraging and praising her efforts as needed and at least every 30 minutes

3. Providing physical comfort

3.1 Assisting with ambulation and helping to find a comfortable position every 1 hour

3.2 Using cool cloths on forehead as needed

3.3 Massaging on painful areas such as lower back, upper tight for 5 minutes every 30 minutes

3.4 Coaching breathing through contractions

3.5 Coaching pushing during delivery

3.6 Encouraging breast feeding

3.7 Looking after mother and baby during 2 hours post partum

The close female relative supporting roles are listed in Table 3.1. Details of the nurse/researcher's roles are listed in Table 3.2.

Table 3.1 Supportive roles of a close female relative

Time points	Responsibilities
Antenatal clinic	• Accompany study participant to her next antenatal appointment (i.e., in 1 week) • At the next appointment (pregnant women at least 37 weeks), a close female relative will be instructed about: (1) the basic knowledge of childbirth, (2) the labour unit routine, (3) how to look after her labouring relative, and (4) how to behave in a labour unit. She will also be given a tour to the labour unit and practice physical comfort techniques
Home	• Stay with woman in early labour and accompany the woman in labour from home to the labour unit
Labour unit	• Stay with labouring woman as continuously as possible from early labour (admission) until 2 hours after the birth except for short meals and bath room breaks • Provide emotional support o Hold the woman's hand, touch, or hug as needed o Talk to her and maintain eye contact as needed o Encourage and praise maternal efforts as needed and at least every 30 minutes • Provide physical comfort o Assist with ambulation and help to find a comfortable position every 1 hour o Use cool cloths on forehead as needed o Massage painful areas such as lower back, upper tight for at least 5 minutes every 30 minutes o Coach breathing through contractions o Coach pushing efforts during delivery
Two hours post partum	• Encourage breast feeding • Look after mother and baby

Table 3.2 Nurse/research's roles

Time points	Responsibilities
Antenatal clinic	• Researcher asks women who are randomized to the experimental group bring a close female relative to their next antenatal appointment • Researcher prepares a close female relative to be an effective support person for her labouring relative • Researcher provides a tour of the labour unit
Labour unit	• Researcher arrives at the labour unit after intra partum staff notified her that participant has been admitted • Research assesses participants obstetric history • Researcher introduces close female relative to nursing staff. • Researcher reviews supportive role during labour and delivery to close female relative. • Researcher monitors and encourages the close female relative to ensure that they are supportive and appropriate • Nurse establishes relationship with the close female relative, makes her feel comfortable, and informs • Nurse provides usual intra partum care for both the experimental and control group • Researcher assesses outcome variables including duration of active labour and incidence of spontaneous vaginal delivery
Post partum ward	• Co-researcher who is blind to group assignment measures participant satisfaction with the childbirth experience

Research Instruments

The research instruments used in this study include: (1) mother's demographic data collection tool, (2) obstetric data collection tool, (3) *Labour Agentry Scale*, (4) close female relative's perspective questionnaire, and (5) health care provider's perspective questionnaire.

Mother's demographic data collection tool

The researcher developed a tool to collect information regarding the demographic characteristics of study participants. Demographic data includes age, religion, marital status, education, occupation, and family income (Appendix A1).

Obstetric data collection tool

The researcher also developed a tool to collect information regarding the obstetrical characteristics of study participants. Obstetric data includes gestational age, weight, height, cervical dilation at first time assessment, duration of each stage of labour, shift of admission, membrane status (i.e., artificially or spontaneously ruptured), oxytocin augmentation, analgesics, complication during labour and delivery, and type of delivery (i.e., spontaneous vaginal delivery, forceps extraction, vacuum extraction, caesarean section), birth attendant, and health care provider during delivery. Newborn characteristics such as gender, birth weight, Apgar scores at 1 and 5 minutes of age, and complication during intra partum would also be recorded (Appendix A2).

Labour Agentry Scale (LAS)

The *LAS* (Hodnett, 1983) (Appendix A3) was chosen to measure feelings of maternal control during labour and was closely associated with satisfaction. This tool is based on the theory that maintaining personal control is a basic need, especially in labour. A positive experience is derived from being able to participate actively in the birth experience and maintain a sense of control (Hodnett and Simmons-Tropea, 1987). Having expectations met and feeling a high level of personal control has consistently been associated with childbirth satisfaction (Goodman, Mackey, and Tavokoli, 2004) and emerged as the best single predictor of satisfaction with the childbirth experience (Bramadat & Driedger, 1993). Researchers have used the

concept of personal control during labour as an indicator of satisfaction with the childbirth experience (Goodman, Mackey, and Tavokoli, 2004). Women evaluation childbirth satisfaction based on the amount of personal control that they experience during labour and delivery (Simkin, 1991, 1992; Mackey, 1995, Walker *et al.*, 1995).

The *LAS* was a 10-item scale including six positive and four negative descriptions of the perceived degree of control experienced during childbirth. Women ranked the item on a 7-point scale from (1) "almost all of the time" to (7) "never, or almost never". The scale is organized so that those choosing 7 for a positively-worded item and chose 1 for a negatively-worded item. The positive items were reversed for analysis. If a woman always experienced the positive feelings listed during birth and never experienced the negative feelings during the birth then she would score 70 on the *LAS*.

The 10 items *LAS* has been used in the UK sample (Kelly *et al*., 2001). The survey was posted to the women for completion at 8-12 weeks postnatal. Of the 2,570 questionnaires sent out, 1,550 (61%) were retuned. Factors analysis was used to assess whether the *LAS* had the intended factor structure in relation to the sample of 1,550 women. An initial two-factor model emerged, reflecting the negatively and positively worded questions respectively. The 10 items *LAS* had a Cronbach's alpha reliability of 0.84.

The *LAS* is a reliable and valid instrument. It is administered as soon as possible after labour. It has also shown to be stable when administered at 24-48 hours postpartum and at four to six weeks postpartum (Bramadat, 1990). Therefore, time of completion in relation to childbirth is not critical to the outcome.

The *LAS* was translated into Thai by back translation method. List of experts for back translation are presented in (Appendix B). Process of this method includes

the following steps: (1) forward translation (English language into Thai language) was performed by an associate professor of nursing at Burapha University who is an expert in maternity nursing; (2) the *LAS* (Thai version) was identified the inadequate expression of the translation by a bilingual doctoral student; (3) the *LAS* was translated back to English by a bilingual assistant professor of nursing at Kent State University and a bilingual assistant professor of engineering at Burapha University who graduated Master and Doctor Degree at University of Michigan; (4) an advisor who is a bilingual professor of nursing at Chulalongkorn University evaluated both the English language version and the Thai version; (5) the *LAS* Thai version was used in 20 primiparous post-partum women at 24 hours to test reliability. The Cronbach's alpha coefficient for the *LAS* Thai version was .80.

Close female relative's perspective questionnaire

For those in the experimental group, the researcher developed open-ended questions to collect information regarding the demographic characteristics of close female relative such as age, education, occupation, experienced straightforward childbirth, and relationship to the participant as well as to obtain their perspectives to having a close female relative to support a woman during labour and delivery (Appendix A4).

Health care provider's perspective questionnaire

The researcher also developed a tool to collect information regarding the demographic characteristics of a health care provider such as age, gender, occupation, and duration of work as well as to obtain their perspectives to having a close female relative to support a woman during labour and delivery and their suggestions how this nursing practice will be modified in hospital practice (Appendix A5).

Data Collection Procedures

After the study was approved by the Human Research Board of Chonburi Hospital (Appendix C), the researcher informed directors of the hospital about the beginning of the study and the approximate length of data collection.

The logistics of conducting this study would be discussed prior to this time. Then the nurse researcher met nurses at the antenatal clinic and labour unit to explain the study purpose and procedure. She described how the research intervention may be relevant for nursing practice; (a) asked intra partum staff to help by phoning when participants was admitted to the labour unit; (b) introduced the close female relative to nursing staff; (c) asked the staff nurses to cooperate by providing their usual nursing care to participants for both experimental and control groups; and (d) asked staff nurses to accept the close female relative during the study period as a person who can help them to provide good care. It was hoped that staff nurses would try to establish a relationship with these female relatives and make them feel comfortable and informed.

The data collection procedures for the target samples were conducted as follows:

1. A poster inviting women to be participants would be placed in the antenatal clinic and a phone number would be provided so those potential participants can contact the researcher.

2. The staff nurse also asked women if they were interested in the study and if they indicated that they might be, she would ask them if she could notify the researcher.

3. The researcher would provide oral information about the study purpose and procedure to women who demonstrated an interest in the study. She would also answer any questions that they concerned.

4. Those who wish to participate would read and sign an informed, written consent.

5. The researcher would give participant sealed envelope as the sequence to determine group assignment and then paste a bright color sticker in front of the participant's antenatal booklet to identify her group assignment for that participant: a green sticker for the control group and an orange sticker for the experimental group.

6. Woman in the control group

6.1 At the antenatal clinic, woman in the control group would be advised that researcher would see her when she was admitted at the labour unit and assess her obstetric history. The co-researcher would see her again after her birth (within 24 hours of delivery) and ask her to assess satisfaction with the childbirth experience and give her a baby gift set at that time.

6.2 At the labour unit, women in the control group would receive usual care from intra partum staff.

7. Woman in the experimental group

7.1 At the antenatal clinic, researcher advised woman in the experimental group to choose an appropriate close female relative who: (1) can count on her to come, (2) wants to be there, (3) feels comfortable with her, (4) will give appropriate support, (5) might deal with the unexpected events, (6) will be willing to attend preparation class, (7) is healthy, and/or (8) has experienced straightforward birth. The researcher also asked each woman to bring the close female relative that she chooses to her next antenatal appointment (i.e., in 1 week).

7.2 At the next antenatal appointment, both the participant and the close female relative that she chooses would attend a preparation class regarding support roles for the woman during labour and delivery. This was done so that the anticipated female relative would receive adequate information regarding the basic knowledge of childbirth, the labour unit routine, learn how to provide support during labour and delivery, and learn what she can and cannot do at the hospital. The pregnant woman and her close female relative would also practice physical comfort techniques and participate in a tour of the labour unit in order to prepare for the physical environment as well as able to provide supportive activities that encompass both emotional support and physical comfort during labour and delivery. After finishing the class, the researcher gave them a handbook entitled "The supportive roles for women during labour and delivery". It is hoped that they would review the lesson and practice the physical comfort techniques at home.

7.3 At the labour unit, women in the experimental group would receive the experimental intervention as well as the usual care. The experimental intervention was support from a close female relative during labour and delivery. It began when woman in the experimental group believed that she was in labour, a close female relative would accompany her to labour unit. When participant labouring woman was admitted to the labour unit, intra partum staff would phone researcher. The researcher would be there within 30 minutes and assessed her obstetric history. Then the researcher would introduce the close female relative to nursing staff and reviewed her supportive roles for woman during labour and delivery.

The intervention was the close female relative who was chosen by her would stay with her as continuously as possible from the time of hospital admission until 2 hours after the birth. She would also provide support activities that promote

both emotional support and physical comfort. These activities have been previously described and included “being there” “Being there” is the essence of emotional support and is expressed by holding the woman’s hand, touching, hugging, talking to her, maintaining eye contact, encouraging and praising her efforts, assisting with ambulation and finding a comfortable position, applying cool cloths, massaging, coaching breathing and pushing efforts as desired by the labouring women.

During this time, the researcher would also monitor and encourage the close female relative once she was on the labour unit with her labouring relative to ensure that she provided the emotional support and physical comfort as instructed.

7.4 About 1-2 hours post partum, researcher would assess the duration of active labour and type of delivery. To gather the duration of active labour, researcher would attend the progress of labour and ask this information from participants, as well as read the partograph record of the participants. To gather the type of delivery, researcher would observe the birth process and read the medical record of the participants. During this time, researcher would also interview a close female relative to obtain demographic data and her view to having a close female relative to support a woman during labour and delivery.

8. About 24 hours of delivery, the co-researcher, who would be “blind” to group assignment, would assess the satisfaction with the childbirth experience for every participant enrolled in the study. To gather data she would interview the mother to obtain self-report scores for the *LAS*. Then researcher or co-researcher would give a baby gift set to women in both groups and say thank you for their participation in this study.

9. About 1 month before complete data collection, researcher would ask health care providers to answer open-ended questions regarding demographic data and obtain their opinions about having a close female relative to support a woman during labour and delivery as well as their suggestions how this nursing practice will be modified in hospital practice. Flow of data collection procedures is presented in Figure 3.1.

A pilot study of 5 cases was conduced using these data collection procedures. The objectives for conducting the pilot study were (1) to determine the feasibility of the proposed study, (2) to identify problems of an experimental intervention, and (3) to examine the validity and reliability of the research instruments. Then the researcher reported any problems to advisors.

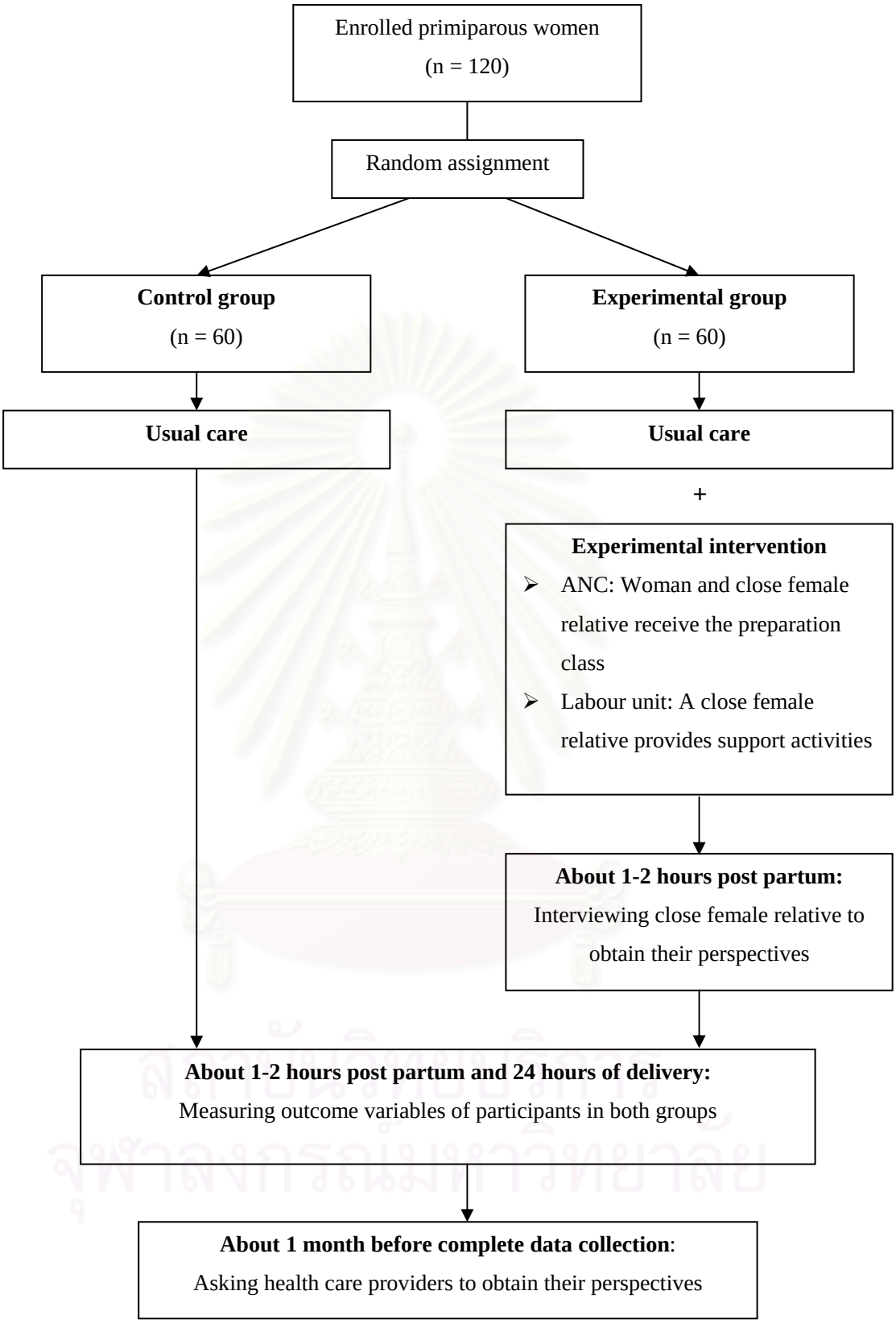

Figure 3.2 Flow of data collection procedures

Threats to Internal Validity in the Study

Internal validity is defined as the observed effect of the dependent variable that is actually due to the action of the independent variable and not to extraneous variables (Cook and Campbell, 1979). Threats to internal validity include history, maturation, testing, instrumentation, and selection bias (Sullivan-Bolyai, Grey, and Singh, 2005).

History refers to, in addition to the independent variable, another specific event that may have an effect on the dependent variable that may occur either inside or outside the experimental setting. In this study, it is possible that hospital staff may respond differently to those women who are attended by close female relatives. For example, in a previous study it was noted that women received more analgesia if their husbands were present. To address this potential threat, every effort was made to encourage nurses to respond in the same manner to these women as they did to women in the control group or other patients who are not in the study. Also, the researcher had an opportunity on some occasions, to observe the nurse with study participants in both the experimental and control groups.

Maturity refers to the developmental, biological, or psychological processes that operate within an individual as a function of time and are external to the events of this investigation. It is possible that risk factors may arise after women are enrolled in the study or other factors might arise that affect the duration of active labour. This could constitute a threat to maturity. However, the threat should be minimized by the randomization process in that each woman will have an equally likely chance of being in either group. If the sample size is sufficient these processes should be equally distributed across groups.

Testing refers to the effect of taking a pretest on the subject's posttest score. There is no pretest and posttest in this study so there is no testing effect.

Instrumentation threats are changes in the measurement of the variables or observational techniques that may account for changes in the obtained measurement. Where appropriate, validity and reliability of instruments have been assessed and reported. To minimize instrumentation threats in this study, the same instrument (i.e., *Labour Agentry Scale*) was used for all participants. In addition same person collected this outcome data from all participants and to minimize the bias, this person was well trained before starting data collection and blinded to group assignment.

Selection bias is an observed effect due to preexisting differences between those who volunteer for the study and the larger population from which they were selected (Cook and Campbell, 1979). It is the nature of clinical trial to recruit convenience or volunteer samples since the parameters of the population are rarely known. To maintain high ethical standards, only volunteers can be recruited. Volunteers are often the most educated and older women. Selection bias was minimized in this study by randomizing volunteers to either the experimental or control group. Thus it should not bias one group or the other.

Protection of Human Subjects

The dissertation proposal was reviewed by the Institutional Review Board (IRB) of Chulalongkorn University and the Human Research Board of Chonburi Hospital. Potential participants were approached and asked to participate in the study by a person who is either a staff nurse or a researcher. If a woman indicated that she was interested in the study, the researcher explained the study purpose and procedures

to her. She was informed any potential risks and benefits to participating and also the time commitment. Information was provided both orally and in writing. A written informed consent was obtained (Appendix D1). A copy of the consent form was given to each participant. The researcher also informed participants that they are free to withdraw from the study at any time and that this would not affect their maternity care in any way and that the researcher would tell no one that she was in the study. There is no known risk to the participants due to the intervention. Women in the experimental group may benefit from receiving additional social support. The researcher assigned a code number to each participant so that information that she provides would be anonymous since her name did not appear on any record of the study.

Data analysis

The data were analyzed by using the Statistical Package for the Social Sciences for Personal Computer (SPSS/PC). Descriptive statistics that were used to analyze the demographic, obstetric, and newborn characteristics included frequencies, percentages, measures of central tendency (mean), variability (standard deviation). Chi-square and independent t-test were used to analyze group differences in demographic, obstetric, and newborn variables. To identify covariates, Spearman rank correlation coefficient for categorized and non-normally distributed variables was used to test the correlation between the selected potentially confounding variables and dependent variables (Mattson, 1993). If correlations were greater than .30 between those selected potentially confounding variables and dependent variables,

they were treated as the covariates in the data analysis (Cook and Campbell, 1979). The alpha was set at .05, two-tailed.

An analysis of covariance (ANCOVA) was used to compare between group differences (means, standard deviations) in the duration of active labour between the experimental and the control group (one selected potentially confounding variable influences the duration of active labour). For incidence of spontaneous vaginal delivery with categorical variables, Chi-square analysis was performed. An independent t-test was also used to compare between group differences in satisfaction with the childbirth experience (*LAS*) scores (Munro, 2001). The alpha was set at .05, one-tailed.

Conclusion

A posttest-only control group design was conducted to compare the effects of support by a close female relative during labour and delivery on duration of active labour, incidence of spontaneous vaginal delivery, and satisfaction with the childbirth experience in primiparous Thai women. Group assignment was based on simple computerized randomization. Sufficient power to detect true between-group differences was achieved if enrolling enough women in each group according to Cohen's 1988 criteria. Each woman in experimental group received support from a close female relative of her choice as well as usual care from hospital admission until 2 hours following delivery, while those in the control group received only usual care. After delivery, the duration of active labour, incidence of spontaneous vaginal delivery, and satisfaction with the childbirth experience were compared between the 2 groups using ANCOVA, independent t-test and chi-square test. ANCOVA was

conducted to compensate for potentially confounding variables that might influence the dependent variables. This technique has the ability to reduce the error variance in the dependent variable; thus increasing the power of the analysis.

CHAPTER IV

RESULTS

The results of the effects of *support by a close female relative during labour and delivery* on *duration of active labour, incidence of spontaneous vaginal delivery,* and *satisfaction with childbirth experience* are presented in three sections. In the first section the sample is described and covariates are identified. In the second section the statistical analyses of the research hypotheses are presented. In the third section information about the perspectives of close female relatives and health care providers on having a close female relative to support a woman during labour and delivery is provided.

Sample Description

The sample was composed of all eligible primiparous Thai women who attended an antenatal clinic at Chonburi Hospital during the 7 month recruiting period (November 2006 to May 2007). One hundred and twenty women who met inclusion criteria were approached to participate. Twenty (20%) women withdrew from the study after enrollment which included 12 (12%) from the experimental group and 8 (8%) from the control group. Reasons for withdrawal from the study were: (1) six (6%) women delivered at other hospital and (2) 4 (4%) women were diagnosed with pregnancy induced hypertension (PIH) prior to birth. In addition, the specific reasons of withdraw for the experimental group were: 3 (3%) close female relatives (CFR) were unable to attend because they occupied with their busy work, 3 (3%) CFR were

away from the community when women in labour, and 2 (2%) delivered before the CFR were enlisted to participate in the study. The specific reasons of withdraw for the control group were: 1 (1%) woman had fetus in the breech position and 1 (1%) woman delivered by elective caesarean section from private obstetrician. The reasons for withdrew presented in Table 4.1.

Table 4.1 Reasons of withdrew from the study

Reasons	Group			
	Experimental		Control	
	n	%	n	%
1. Women delivered at other hospital	2	2	4	4
2. Women were diagnosed with PIH prior to birth	2	2	2	2
3. CFR occupied with their busy work	3	3	-	-
4. CFR stayed distance when women in labour	3	3	-	-
5. Delivery occurred before CFR participated study	2	2	-	-
6. Woman had fetus in the breech position	-	-	1	1
7. Woman delivered by elective caesarean section	-	-	1	1
Total	**12**	**12**	**8**	**8**

Chi-square and independent t-test were used to test the differences between groups with respect to demographic, obstetric, newborn and dependent variables. There were no significant differences in demographic, obstetric, newborn and dependent variables between the experimental and the control group of the 100 women who completed the study and the 14 women who dropped out (missing 6 cases). Therefore, there were 100 women: 48 in the experimental group and 52 in the control group. The research hypotheses were tested with these women.

Demographic characteristics

The 100 women ranged in age from 18 to 30 years, 43 (43%) women were 21 to 25 years old (M = 22.8 years, SD = 3.6). All of the women were Buddhist and married. Thirty-four (34%) completed 9th grade education; 50 (50%) did not work outside their home; and 44 (44%) had a monthly family income less than 10,000 Baht. Chi-square analysis was used to test the differences between-groups for demographic characteristics. There were no significant differences between-groups with respect to age, education, occupation, and monthly family income. Categorical demographic characteristics are shown in Table 4.2.

Table 4.2 Demographic characteristics of the experimental and control groups

Characteristics	Experimental (n = 48)		Control (n = 52)		Total (n = 100)		χ^2	df	p
	n	%	n	%	n	%			
Age (years)							3.64	2	.16
18-20	19	39.6	16	30.8	35	35.0			
21-25	16	33.3	27	51.9	43	43.0			
26-30	13	27.1	9	17.3	22	22.0			
Average age	M = 23.1		M = 22.4		M = 22.8				
	SD = 4.0		SD = 3.3		SD = 3.6				
Education							3.33	4	.50
Grade 6	4	8.3	6	11.5	10	10.0			
Grade 9	20	41.7	14	26.9	34	34.0			
Grade 12	11	22.9	18	34.6	29	29.0			
Diploma	8	16.7	10	19.2	18	18.0			
Bachelor	5	10.4	4	7.7	9	9.0			
Occupation							.60	2	.74
Housewife	23	47.9	27	51.9	50	50.0			
Employee	20	41.7	18	34.6	38	38.0			
Small business	5	10.4	7	13.5	12	12.0			
Family income							4.68	3	.20
$\leq$ 10,000	23	47.9	21	40.4	44	44.0			
10,001-15,000	12	25.0	23	44.2	35	35.0			
15,001-20,000	9	18.8	5	9.6	14	14.0			
> 20,000	4	8.3	3	5.8	7	7.0			

Obstetric characteristics

Obstetric characteristics included the following variables. There were maternal characteristics of gestational age, weight, height, cervical dilation at first time assessment, shift when admitted, how membranes ruptured. Whether or not oxytocin or analgesia was administered as well as duration of ruptured of membranes and oxytocin administration prior to birth, complications during labour and delivery,

types of delivery were other obstetric variables, and duration of labour. Provider characteristics were also noted and included attendance by a nursing student, type of health care provider during delivery, and shift when birth occurred.

Obstetric characteristics for both groups are presented in Table 4.3. The average gestational age was 39.4 weeks (wks). The average maternal weight was 64.3 kilograms (kg), the average maternal height was 156.3 centimeters (cm), and the average cervical dilation at first time assessment was 3.3. Using *independent t-tests*, differences were not found between the experimental and the control group with respect to gestational age, maternal weight or height, and cervical dilation at the time if first assessment.

Table 4.3 Obstetric characteristics of the experimental and control groups

Characteristics	Experimental (n = 48)		Control (n = 52)		Total (n = 100)		t	df	p
	M	SD	M	SD	M	SD			
Gestational age (wks)	39.4	.9	39.4	1.0	39.4	.9	.16	98	.87
Weight (kg)	64.1	7.8	64.5	8.0	64.3	7.9	-.23	98	.82
Height (cm)	156.3	6.0	156.4	5.2	156.3	5.6	-.12	98	.91
Cervical dilation at first time assessment (cm)	3.6	2.4	3.0	1.8	3.3	2.1	1.30	98	.20

Almost half (44%) of the women were admitted to the labour unit during the night shift. The majority of the women had their membranes artificially ruptured (59%); did not receive oxytocin during labour and delivery (64%); and did not receive analgesics during labour (75%). Using crosstabs, there were no differences between groups in shift when they were admitted to the labour unit, administration of oxytocin,

and administration of analgesics. Significant differences between groups were found in how membranes ruptured. Fewer women in the experimental group (47.9%) experienced artificial rupture of membranes than did women in the control group (69.2%). Over half (52.1%) of the women in the experimental group experienced spontaneous rupture of membranes; often prior to admission (see Table 4.4).

Table 4.4 Obstetric characteristics of the experimental and control groups (continue)

Characteristics	Experimental (n = 48)		Control (n = 52)		Total (n = 100)		χ^2	df	p
	n	%	N	%	n	%			
Shift of admission							2.05	2	.36
Day	14	29.2	19	36.5	33	33.0			
Evening	14	29.2	9	17.3	23	23.0			
Night	20	41.7	24	46.2	44	44.0			
Types of membrane rupture							4.69	1	.03*
Artificial	23	47.9	36	69.2	59	59.0			
Spontaneous	25	52.1	16	30.8	41	41.0			
- Prior to admission	16	66.7	9	56.3	25	62.5			
- After admission	8	33.3	7	43.8	15	37.7			
Received oxytocin							.51	1	.47
No	29	60.4	35	67.3	64	64.0			
Yes	19	39.6	17	32.7	36	36.0			
Received analgesic							.21	1	.64
No	37	77.1	38	73.1	75	75.0			
Yes, once time	11	22.9	14	26.9	25	25.0			

* $p < 0.05$, two-tailed

Spearman rank correlation coefficient for categorized variables (using a dummy coding method) was used to test the relationships between types of membrane rupture and 3 dependent variables: duration of active labour, incidences of spontaneous vaginal delivery, and satisfaction with childbirth experience. There were

significant relationships between groups with respect to how membranes ruptured and duration of active labour, r = -.26, p<.05 (see Table 4.12). Only correlations greater than .30 were considered to be a covariate. Therefore, how membranes ruptured was not used as a covariate in this study because the correlation was less than .30.

It is shown in Table 4.5 and Table 4.6 that the average duration for ruptured membranes was 5.1 hours and average length of time following administration of oxytocin prior to birth was 1.4 hours. Between-groups comparisons of the mean of the duration of ruptured membranes and time of administration of oxytocin prior to birth were calculated using an independent t-test. Significant differences between groups were not found with respect to the duration of ruptured membranes and the time of administration oxytocin prior to birth.

Table 4.5 Duration of rupture of membrane for the experimental and control groups

Duration of ruptured membranes	**Experimental (n = 44[a])**		**Control (n = 44[a])**		**Total (n = 88[a])**		**t**	**df**	**p**
	M	**SD**	**M**	**SD**	**M**	**SD**			
in hour	5.7	4.9	4.5	2.9	5.1	4.1	1.38	70.25	.17

[a] Participants who delivered by C/S before their cervix was fully dilated are excluded from this portion of the analysis so that the duration of active labour in this study could be more accurately assessed.

Table 4.6 Length of time that oxytocin was administered prior to birth in the experimental and control groups

Time of administration oxytocin	Expeimental (n = 48)		Control (n = 52)		Total (n = 100)		t	df	p
	M	SD	M	SD	M	SD			
in hour	1.6	2.9	1.2	2.6	1.4	2.7	.36	98	.51

The majority of the women (58%) did not have complications. Forty-two (42%) had one or more complications. The most frequent complications were prolonged rupture of membranes (PROM), prolonged latent labour and fetal distress as showed in Table 4.7.

Table 4.7 Complications during labour and delivery in the experimental and control groups

Characteristics	Experimental (n = 48)		Control (n = 52)		Total (n = 100)		χ^2	df	p
	n	%	n	%	n	%			
Complications during labour and delivery							.22	1	.64
No	29	60.4	29	55.8	58	58.0			
Yes	19	39.6	23	44.2	42	42.0			
- PROM	6	12.5	4	7.7	10	10.0			
- Membrane leak	0	0.0	3	5.8	3	3.0			
- Prolong latent	4	8.3	4	7.7	8	8.0			
- Prolong active	2	4.2	1	1.9	3	3.0			
- Prolong 2nd stage	2	4.2	1	1.9	3	3.0			
- Fetal distress	2	4.2	3	5.8	5	5.0			
- Thick meconium	0	0.0	3	5.8	3	3.0			
- Thin meconium	3	6.3	1	1.9	4	4.0			
- Fetal distress and thick meconium	0	0.0	3	5.8	3	3.0			

At study completion, 58 (58%) women had spontaneous vaginal deliveries while 42 (42%) had assisted deliveries that included C/S, vacuum extraction (V/E), or forceps extraction (F/E). Among the women who had assisted deliveries, the major indication for C/S was cephalo-pelvic disproportion (CPD), while the major indications of V/E and F/E were prophylactic treatment. Results are presented in Table 4.8.

Table 4.8 Types of delivery and indications for assisted birth in the experimental and control groups

Characteristics	Experimental (n = 48)		Control (n = 52)		Total (n = 100)		χ^2	df	p
	n	%	n	%	n	%			
Between group comparison of types of delivery and their indications							1.02	3	.80
Spontaneous delivery	**27**	**56.3**	**31**	**59.6**	**58**	**58.0**			
Caesarean section	**8**	**16.7**	**11**	**21.2**	**19**	**19.0**			
- CPD	7	14.6	4	7.7	11	11.0			
- Thick meconium	0	0.0	4	7.7	4	4.0			
- Fetal distress	1	0.0	2	3.8	2	2.0			
- Fail V/E	1	2.1	1	1.9	2	2.0			
Vacuum extraction	**12**	**25.0**	**9**	**17.3**	**21**	**21.0**			
- Prophylaxis	7	14.6	7	13.5	14	14.0			
- Prolong 2nd stage	4	8.3	2	3.8	6	6.0			
- Fetal distress	1	2.1	0	0.0	1	1.0			
Forceps extraction	**1**	**2.1**	**1**	**1.9**	**2**	**2.0**			
- Prophylaxis	1	2.1	1	2.1	2	2.0			

It is shown in Table 4.9 that the average duration of first stage labour was 11.1 hours, duration of second stage labour was 56.2 minutes, duration of the third stage labour was 6.7 minutes, and overall duration of labour was 12.2 hours. There were no significant differences between the support and the control group in each stage of labour or for the total duration of labour.

Table 4.9 Duration of labour of the experimental and control groups

Duration of labour	**Experimental (N = 44[a])**		**Control (N = 44[a])**		**Total (N = 88[a])**		**t**	**df**	**p**
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**			
1st stage in hour	10.6	5.4	11.7	7.7	11.1	6.7	.12	86	.43
2nd stage in minute	62.6	37.7	49.8	37.2	56.2	37.8	.53	86	.11
3rd stage in minute	6.1	4.1	7.2	5.5	6.7	4.9	-1.07	79.10	.29
Total in hour	11.7	5.4	12.6	7.8	12.2	6.7	-.66	86	.51

[a] Participants who delivered by cesarean delivery before their cervix was fully dilated are excluded from this portion of the analysis.

It is shown in the Table 4.10 that the majority (78%) of the women were not attended by nursing students. Residents (41%) and midwives (41%) attended the majority of births. Over half (54%) delivered during the day shift. Chi-square analysis was used to test between-group differences. There were no significant differences between the experimental and the control group with respect to having a student nurse present, types of provider and shift in which the delivery occurred.

Table 4.10 Provider characteristics between the experimental and control groups

Characteristics	Experimental (n = 48)		Control (n = 52)		Total (n = 100)		χ^2	df	p
	n	%	n	%	n	%			
Birth attended by nursing student							.07	1	.79
No	38	79.2	40	76.9	78	78.0			
Yes	10	20.8	12	23.1	22	22.0			
Health care provider during delivery							.75	3	.86
Resident	21	43.8	20	38.5	41	41.0			
Midwife	18	37.5	23	44.2	41	41.0			
Nursing student	6	12.5	7	13.5	13	13.0			
Medical student	3	6.3	2	3.8	5	5.0			
Shift of delivery							.19	2	.91
Day	27	56.3	27	51.9	54	54.0			
Evening	9	18.8	11	21.2	20	20.0			
Night	12	25.0	14	26.9	26	26.0			

Newborn characteristics

Newborn gender, birth weight, 1 and 5 minute Apgar scores, and complications during intra partum period were assessed. The majority (58%) of the newborn were boys. Thirty-eight (38%) newborns weighed from 2,801 to 3,200 grams (gm) (M = 3114.4 gm, SD = 371.5). Most (93%) newborns had Apgar scores ranging from 8 to 10 at one minute of age. There were no newborns in the experimental group with scores less than 4, while 3 (5.8%) in the control group had scores ranging from 0 to 3. Almost all (99%) of the newborns had 5-minute Apgar scores ranging from 8 to 10. Most (90%) did not have complications during intra partum period. Complications were reported for 10 (10%) newborns. The major complication was meconium aspiration and was reported for only those in the control group (5%). Differences between groups were evaluated by using Chi Square

analysis. There were no significant differences between the experimental and the control group in newborn gender, birth weight, Apgar scores at 1 and 5 minute, and intra partum complications. Findings are presented in Table 4.11.

Table 4.11 Newborn characteristics of the experimental and control groups

Characteristics	Experimental (n = 48)		Control (n = 52)		Total (n = 100)		χ^2	df	p
	n	%	n	%	n	%			
Newborn gender							.12	1	.73
Female	20	43.8	21	40.4	42	42.0			
Male	27	56.3	31	59.6	58	58.0			
Birth weight (gm)							2.69	3	.44
≤ 2,800	7	14.6	14	26.9	21	21.0			
2,801-3,200	21	43.8	17	32.7	38	38.0			
3,201-3,600	15	31.3	15	28.8	30	30.0			
> 3,600	5	10.4	6	11.5	11	11.0			
Average	M = 3126.0		M = 3103.7		M = 3114.4				
	SD = 373.9		SD = 372.6		SD = 371.5				
1 minute Apgar score							2.58	2	.24
0-3	0	0.0	3	5.8	3	3.0			
4-7	2	4.2	2	3.8	4	4.0			
8-10	46	95.8	47	90.4	93	93.0			
5 minute Apgar score							.93	1	.33
4-7	0	0.0	1	1.9	1	1.0			
8-10	48	100	51	98.1	99	99.0			
Newborn's complications							.28	1	.59
No	44	91.7	46	88.5	90	90.0			
Yes	4	8.3	6	11.5	10	10.0			
- Meconium aspiration	0	0.0	5	9.6	5	5.0			
- Respiration compression	1	2.1	0	0.0	1	1.0			
- Subgaleal hemorrage	1	2.1	0	0.0	1	1.0			
- Congenital heart disease	0	0.0	1	1.9	1	1.0			
- Cleft lip and cleft palate	1	2.1	0	0.0	1	1.0			
- Deodenal atresia	1	2.1	0	0.0	1	1.0			

Identification of covariates

There were 12 selected potentially confounding variables. These were age, occupation, weight, height, cervical dilation at time of first assessment, how membranes ruptured, administration of oxytocin, administration of analgesia, duration of ruptured membranes, presence of nursing student, shift when delivery occurred, and newborn's birth weight. The Spearman rank correlation coefficient for categorized and non-normally distributed variables was used to identify the relationships among selected potentially confounding variables and 3 dependent variables. Only correlations greater than .30 were considered as the covariates (Cook and Campbell, 1979). There were no correlations greater than .30 among those variables, except between duration of ruptured membranes and duration of active labour, $r = .49$, $p<.01$ (see Table 4.12). Therefore, duration of ruptured membranes was used as the covariate when analyzing the effects of support by a close female relative on the duration of active labour.

Table 4.12 Correlation between selected potentially confounding and dependent variables

Confounding variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	-														
2. Occupation	.42**	-													
3. Weight	.04	-.11	-												
4. Height	.08	-.08	.41**	-											
5. Cervical dilation	-.37**	-.08	-.13	.04	-										
6. Types of membrane rupture	.04	.18	.07	-.02	.08	-									
7. Received oxytocin	.11	.12	.03	.01	-.31**	.05	-								
8. Received analgesic	.23*	.02	.05	.02	-.38**	-.25*	.38**	-							
9. Duration of rupture membranes	.27**	.12	.02	.06	-.38**	.18	.39**	.38**	-						
10. Birth attendant by student	.19	.10	.05	.16	-.11	-.20*	.15	.42**	.23*	-					
11. Shift of delivery	.01	-.08	-.14	-.07	-.13	-.25*	.02	.12	.09	.25*	-				
12. Birth weight	.06	-.03	.33**	.33**	.02	.12	.08	.05	.20	.17	.04	-			
13. Duration of active labour [a]	.04	-.03	-.02	-.02	-.17	-.26*	.09	.22*	**.49****	.22*	.14	.05	-		
14. Type of delivery [a]	-.11	-.04	.19	.12	.18	.01	-.08	-.07	-.24*	.16	-.01	-.09	-.08	-	
15. Satisfaction with childbirth [a]	.10	-.00	-.01	-.10	.09	-.03	-.16	-.05	.01	.05	.27**	-.01	.04	.05	-

* p < .05, two-tailed; ** p < .01, two-tailed;

[a] Dependent variable

Research Hypotheses Testing

Hypothesis 1: Women who receive support from a close female relative during labour and delivery will have shorter duration of active labour than those who receive usual care.

To answer Hypotheses 1, the analytic strategy was ANCOVA. ANCOVA combines analysis of variance (ANOVA) and regression equations to measure the differences among group means. This technique has the ability to reduce the error variance in the dependent variable; thus increasing the power of the analysis. With ANCOVA, the control of the extraneous variation provides a more accurate estimate of the real variation or difference among groups (Munro, 2001). There are 6 assumptions underlying the ANCOVA:

(1) The groups are mutually exclusive. Mutually exclusive means that a participant can contribute just one score to one of the two groups. For this study, participants were randomly assigned to one of 2 groups (i.e., experimental and control using a simple computerized randomization). A participant could only enroll in this study on one occasion. Therefore, groups were mutually exclusive.

(2) The dependent variable should be normally distributed. The dependent variable for this study was the duration of active labour. The Shapino-Wilk test for sample sizes less than 50 (Juraruk Baramee, 2007), indicated that scores (i.e., lengths of active labour) were normally distributed in the experimental ($n = 44$, $p = .21$) and the control groups ($n = 44$, $p = .19$). This is a function of sample size with a normal distribution more likely to be observed in a larger sample.

(3) The variance of the groups should be equivalent (homogeneity of variance). The Levene's test showed that equality of variance ($p = .46$) was observed for the duration of active labour.

(4) The covariate is a continuous variable. The covariate was duration of time that membranes were ruptured. The level of measurement for time is ratio, thus time is a continuous variable.

(5) The covariate and the dependent variable must show a linear relationship. Test for linearity by using F-test indicated that the duration of time following rupture of membranes and the duration of active labour had a linear relationship ($p = .01$).

(6) The direction and strength of the relationship between the covariate and the dependent variable must be similar in each group (homogeneity of regression across groups). As previously discussed, Spearman rank correlation coefficient was used to test correlations between the duration of ruptured membranes and the duration of active labour. These two variables were moderately correlated, $r = .49$. The test for homogeneity of regression indicated that there was homogeneity of regression across groups ($p = .07$).

In brief, all assumptions underlying ANCOVA were not violated. ANCOVA then was used to test this hypothesis with group assignment (experimental or control) as the independent variable, duration of rupture of membranes as the covariate variable, and duration of active labour as the dependent variable. After adjusting for duration of active labour by controlling duration of rupture of membranes (covariate), there were significant differences in duration of active labour between groups ($p<.05$, one tailed) (see Table 4.13). Women in the experimental group (M = 4 hours and 23 minutes, SD = 1 hours and 26 minutes) had shorter duration of active labour than

those in the control group (M = 5 hours and 9 minutes, SD = 1 hours and 37 minutes) (see Table 4.14). Therefore, Hypothesis 1 was supported.

Table 4.13 Comparison of duration of active labour between the experimental and control groups by controlling duration of rupture of membranes

Source of variance	SS	df	MS	F	P
Covariate	138881.53	1	138881.53	19.98	.000
Between group (Adjusted)	46042.87	1	46042.87	6.62	.012*
Within group (Error)	590711.08	85	6949.54		
Total	7969175.00	88			

Note: n = 44 in the experimental group and n = 44 in the control group because participants who delivered by C/S before their cervix was fully dilated are excluded from this portion of the analysis

* p<.05, one-tailed

Table 4.14 Adjusted mean of duration of active labour for the experimental and control groups

Group	n*	Mean	Std. Deviation	Adjusted mean	Mean difference
Experimental	44	4 hours and 29 minutes	1 hours and 26 minutes	4 hours and 23 minutes	46 minutes
Control	44	5 hours and 3 minutes	1 hours and 37 minutes	5 hours and 9 minutes	
Total	88	4 hours and 46 minutes	1 hours and 33 minutes		

Note: * Participants who delivered by C/S before their cervix was fully dilated are excluded from this portion of the analysis

Hypothesis 2: Women who receive support from a close female relative during labour and delivery will have a higher incidence of spontaneous vaginal delivery than those who receive usual care.

To answer Hypothesis 2, Chi-square analysis was performed. Chi-square is non-parametric statistic. It can be used with one or more groups. It compares the actual frequency in each group with the expected frequency. The question is whether the expected frequency is significantly difference from the actual frequency (Munro, 2001). There are two assumptions underlying Chi-square analysis:

(1) Frequency data: The dependent variable using this statistic was the incidence of spontaneous vaginal delivery. Therefore, frequency data are obtained.

(2) Measures are independent of each other. Participants were in one of the 2 groups. They remained in the group to which they were randomized so they were independent of each other.

Both assumptions underlying Chi-square analysis were met. Chi-square then was used to compare the differences between the experimental and the control groups in expected frequency versus actual frequency of spontaneous vaginal delivery. Results showed that whether or not a woman received support from a close female relative during labour and delivery, significant differences in the incidence of spontaneous vaginal delivery were not found ($p>.05$, one-tailed) (see Table 4.15). Therefore, Hypothesis 2 was not supported.

Table 4.15 Comparison of incidences of spontaneous vaginal delivery between the experimental and control groups

Type of delivery	Experimental (n = 48)		Control (n = 52)		Total (n = 100)		χ^2	df	p
	n	%	n	%	n	%			
Spontaneous vaginal delivery	27	56.3	31	59.6	58	58.0	.12	1	.73
Assisted delivery	21	43.7	21	40.4	42	42.0			
Total	48	100	52	100	100	100			

Hypothesis 3: As demonstrated by a higher score on the *Labour Agentry Scale (LAS), w*omen who receive support from a close female relative during labour and delivery will be more satisfied with their childbirth experience than those who receive usual care.

To answer Hypothesis 3, independent t-tests were performed. Independent t-tests are used to test between-groups differences, when the participants differ with respect to other extraneous variables. Means and distributions in each group are compared (Munro, 2001). There are three assumptions underlying the independent t-test:

(1) The independent variable is categorical and contains two groups. The dependent variable should be continuous. The independent variable in this study was group assignment. This is a categorical variable that was present or not present depending on the group to which the participant was randomly assigned. In this study, they were assigned to either the experimental or the control group.

(2) The distribution of the dependent variable is normal. The dependent variable using this statistic was *satisfaction with childbirth experience*. The Shapino-Wilk test indicated that the distribution was normal for the experimental group (n = 48, p = .09) and the Kolmogorov-Smirnov test for moderate to large sample size ($n \geq 50$) (Baramee, 2007), indicated that it was also normally distributed in the control group (n = 52, p = .12).

(3) Homogeneity of variance: The Levene's test demonstrated equality of variance (p = .19) in scores to assess satisfaction with childbirth experience.

The three assumptions underlying independent t-test were not violated. Independent t-tests were used to compare levels of *satisfaction with childbirth experience* in the support and the control groups. There was a significant between-groups difference in *LAS* scores (p < .01, one-tailed). Women in the experimental group (M = 53.81, SD = 8.55) were more satisfied with their childbirth experience than those in the control group (M = 47.83, SD = 10.82) as shown in Table 4.16. Therefore, Hypothesis 3 was supported.

Table 4.16 Comparison of satisfaction with childbirth experience as demonstrated by scores on the *Labour Agentry Scale* between the experimental and control groups

Group	n	Mean	Std. Deviation	Mean Difference	t	df	p
Experimental	48	53.81	8.55	5.98	3.05	98	.0015**
Control	52	47.83	10.82				

** p<.01, one-tailed

Perspectives of Close Female Relatives and Health Care Providers

The perspectives of close female relatives and health care providers on having a close female relative to support a woman during labour and delivery are presented. Also, suggestions about how this nursing practice will be modified for hospital practice will be presented.

Perspectives of the close female relatives

After completed the intervention program, the researcher asked close female relatives randomized to the experimental group about how they believed they were the supportive companions for their close female relative during labour and delivery.

Informants included 48 close female relatives ranging in age from 18 to 65 years (M = 40.9 years, SD = 10.9). Over half (52.1%) of the close female relatives finished primary school. Equal numbers (35.4%) either did not work outside their homes or had paid employment. Most (91.6%) of them had one or more childbirth experiences. Mothers (35.4%) were most often chosen to be the close female relatives that provided support during labour and delivery. Findings are presented in Table 4.17.

Table 4.17 Close female relative characteristics (n = 48)

Characteristics	n	%
Age (years)		
19-30	9	18.7
31-40	10	20.8
41-50	19	39.6
51-65	10	20.8
Average age	M = 40.9 years, SD = 10.9	
Education		
No education	4	8.3
Primary school	25	52.1
High school	16	33.3
Bachelor	3	6.2
Occupation		
Housewife	17	35.4
Employee	17	35.3
Small business	6	12.5
Agriculture	5	10.4
Government personnel	3	6.2
Childbirth experience		
No	4	8.3
Yes	44	91.6
Kind of close female relative		
Mother	17	35.4
Mother in-law	11	22.9
Sister	9	18.7
Sister in-law	6	12.5
Close friend	3	6.2
Aunt	2	4.1

The close female relatives were asked, “how do you feel that you were a support companion for your female relative during labour and delivery?” Of these, 48 (100%) close female relatives responded. It is shown in Table 4.18 that the majority (58.3%) of the close female relatives said that they felt delighted to help their relative in labour and 12 (25%) stated that they felt pound of themselves for doing that. A small group of close female relatives (6.2%) reported feelings uncomfortable during the labour and birth. For example, they felt tense when they saw their relative having a painful or long labour and felt fear when they saw a lot of blood during the birth (4.1%).

Table 4.18 Feelings of close female relatives when they were a support companion for their relative women during labour and delivery (n = 48)

Feelings	n	%
Delighted to help their relative in labour	28	58.3
Proud of themselves to help their relative in labour	12	25.0
Gaining knowledge and experience about birth process	5	10.4
Excited by seeing the birth process	5	10.4
Respect for the hard work of the nurses and doctors	4	8.3
Compassion when seeing their relative having a painful labour	3	6.2
Tense when they saw their relative having a painful or long labour	3	6.2
Fear when they saw a lot of blood during their relative’s birth	2	4.1

Note: Some close female relatives responded with more than one feeling

Furthermore, after completion delivery, some women in the experimental group said that “I am very lucky that mother stayed with me almost all the time in labour unit, I can’t ever imagine going in there alone without my mother”.

Forty-eight (100%) close female relatives offered responses to the question, "which support activities that you provided during labour and delivery were beneficial for your relative women?" The close female relatives noted that the supportive activities that they provided encompassed both physical comfort and emotional support. The most prevalent emotional support, the most prevalent activities were encouraging and praising women efforts (41.0%) (39/95); holding women's hands, touching, or hugging (28.4%); and staying with women almost all the time (13.7%). For physical comfort activities were massaging women's painful areas (34.2%) (27/79), using cool cloths on women's face (22.8%), and taking women to toilet or serving a bed pan (19.0%). Results are presented in Table 4.19.

Table 4.19 Supportive activities that close female relatives thought had beneficial effects for their relative during labour and delivery

Supportive activities	n	%
Emotional support		
- Encouraging and praising efforts	39	41.0
- Holding hands, touching, or hugging	27	28.4
- Being present almost all the time	13	13.7
- Talking or giving advice during painful period	8	8.4
- Coaching breathing exercises	3	3.1
- Coaching pushing efforts during delivery	3	3.1
- Praying	2	2.1
Physical comfort		
- Massaging painful areas	27	34.2
- Using cool face cloths	18	22.8
- Accompanying to toilet or serving a bed pan	15	19.0
- Helping to find a comfortable position	10	12.6
- Abdominal effleurage	6	7.6
- Giving ammonia or a heart stimulant	3	3.8

Responses were invited for the question, “during the time you provided supportive care for your close female relative in the labour unit, did you need some help to facilitate your supportive role during labour and delivery? If so, please specify”. All 48 (100%) close female relatives were responded. Most (81.2%) of them said that they had no need for help to facilitate their supportive role during labour and delivery because nurses gave them some help appropriately (47.9%) and 6 (12.5%) close female relatives stated that they felt comfortable on the labour unit. Only some (18.8 %) close female relatives noted that they needed some help. For example, they would like nurses make them feel more comfortable as well as give them information and consultation (4.2%) and to frequently visit their relative if she was having painful labour (4.2%). Results are illustrated in Table 4.20.

Table 4.20 Help which close female relatives needed for facilitate their roles (n = 48)

Help	n	%
No need, because	**39**	**81.2**
- Nurses gave them some help appropriately	23	47.9
- They felt comfortable during their time on the labour unit	6	12.5
- Nurses gave them an advice appropriately	6	12.5
- Nurses offered them a place to rest	2	4.2
- Nurses encouraged their efforts appropriately	2	4.2
Need, they would like nurses:	**9**	**18.8**
- To help them to feel more comfortable as well as provide information and consultantation	2	4.2
- Come to see their relatives women when they having painful labour	2	4.2
- Answer their questions willingly	1	2.1
- Be friendly	1	2.1
- Speak in a pleasant tone	1	2.1
- Encourage patient efforts	1	2.1
- Not to be blaming if the CFR did not know something	1	2.1

Close female relatives were asked to respond to the question, “do you think hospital should introduce this nursing intervention (having close female relative to provide support during labour and delivery) as ongoing hospital practice?”. All 48 (100%) close female relative were replied. All (100%) of the close female relatives asserted that they would like hospital institute this nursing intervention as an ongoing hospital practice because of its very beneficial effects on patients, nurses, and the relatives themselves. The beneficial effects on patients included reducing the feelings of isolation and increasing the feelings of mental comfort (20.8%), as well as increasing patients’ cooperation through encouragement (14.6%). They also noted that allowing relatives to provide support to women during labour and delivery gave them a chance to take care of and help someone that they care about (12.5%). In addition, 5 (10.4%) close female relatives said that nurses had many patients to take care of and had much work to complete so having relatives to support women in labour will assist nurses to take close care of all the patients all the time. This would decrease the nursing workload. Findings of this section are presented in Table 4.21.

Table 4.21 Perspectives of close female relatives to bringing this nursing practice into hospital practice (n = 48)

Perspectives	n*	%
Hospital should bring this nursing practice into hospital practice, because of	**48**	**100**
- Reduce feelings of isolation and increase feelings of mental comfort	10	20.8
- Increasing patients’ efforts	7	14.6
- Have a chance to take care of and help relative	6	12.5
- Assist nurses to take care the patients and decrease their workload	5	10.4
- Increase relationship between relative and woman	2	4.2
- Reduce pain and fear	2	4.2

* 16 close female relatives do not specify the reasons

Perspectives of the health care providers

Informants included 15 health care providers: 12 (80%) nurses-midwives, 2 (8%) residents, and 1 (4%) obstetrician. They ranged in age 23 to 56 years (M = 38.0 years, SD = 10.4). Most (93.3%) of them were female. The average duration of working in their profession was 15.2 years.

They were asked to respond in writing to the question, “what do you think are there beneficial effects of having a close female relative to support a woman during labour and delivery?” All 15 (100%) health care providers responded. Most (80.0%) of the health care providers stated that having a close female relative present had positive effects and 3 (20%) noted that it had undesirable effects. From the written responses that were offered, about 53.8% (35/65) related what they believed the effects to be on “labouring women”. The next written responses related what they believed the effects to be on “clinical practice” (26.1%) and 20.0% related the effects that they believe this intervention had on “relationships”. Examples of written responses are presented in Table 4.22.

Table 4.22 Effects of having a close female relative to support a woman during labour and delivery as reported by health care providers

Effects	n	%
Labouring women	**35**	**53.8**
- Increasing the efforts and feelings of mental comfort	12	18.5
- Reduce anxiety and fear for childbirth	7	10.7
- Increased physical comfort	5	7.7
- Reduced feelings of isolation	4	6.1
- Reduced labour pain and crying out	4	6.1
- Reduced maternal patience with labour pain and caused them to loose emotional control	3	4.6
Clinical practices	**17**	**26.1**
- Assists nurses to take care the patients and decreases some of the nursing workload	9	13.8
- Improves work environment by reducing “crying out”	4	6.1
- Inconvenient because of limited space	2	3.1
- Inconvenient because patient requires more help	1	1.5
- Less privacy for health professionals	1	1.5
Relationships	**13**	**20.0**
- Improves relationships between health care providers and relatives	9	13.8
- Improves relationship between both CFR and labouring women	2	3.1
- Developing a sympathetic understanding of nurses work	2	3.1

Of the 15 health care providers who responded to the question “is it possible to integrate this nursing intervention (having close female relative to provide support during labour and delivery) into hospital practice? And what are your suggestions about doing this?”. Three (20%) stated that introducing a CFR should be integrated into hospital practice. It encourages a family-center approach to maternal care. However, 6 (40%) health care providers noted that it is not suitable for a large public hospital like Chonburi Hospital because of crowded patients and limited space. They anticipated problems if emergency situations occurred or patients require more help.

From the written suggestions about integrating this nursing intervention into hospital practice 47% (8/17) of responses were related to the theme “protocol”, 29.4% were related to “policy”, and 23.5% were related to “place” as shown in Table 4.23.

Table 4.23 Suggestions about integrating this nursing intervention into hospital practice (n = 15)

Suggestions	n	%
Protocol	**8**	**47.0**
- Training both a support person and labouring woman	5	29.4
- There should be 2 preparation classes: the first class focuses on information, the second class focuses on practice	1	5.9
- Relatives should have childbirth experience, not be too old, and be healthy	1	5.9
- Supportive care should begin in the active phase and last until delivery, except if more than one woman delivered at the same time	1	5.9
Policy	**5**	**29.4**
- Hospital should allow husbands to be a support person for a woman	2	11.8
- Hospital administrators should encourage health care providers to integrate this nursing intervention in hospital practice	2	11.8
- This nursing practice should be established by national health policy as indicators in measuring hospital quality	1	5.9
Place	**4**	**23.5**
- Have a private labour room for each patient	1	5.9
- Home-like birth setting	1	5.9
- Have a lounge room for relatives to relax	1	5.9
- Have a specific hospital that provides this nursing practice	1	5.9

Note: Some close female relatives responded with more than one suggestion

Conclusion

Women who received support from a close female relative during labour and delivery had significantly shorter duration of active labour and were more satisfied with their childbirth experience than those who received usual care. However, there were no differences between women who received support from a close female during labour and delivery and those who received usual care in the incidence of spontaneous vaginal delivery. Qualitative data provided evidence regarding the acceptability of having close female relative support during labour and delivery. The close female relatives and health care providers perceived its benefit to labouring women and its feasibility to implement in hospital. Suggestions to facilitate the integration of this nursing intervention into hospital practice including protocol, policy, and place of delivery are detailed.

CHAPTER V

DISCUSSION

A summary of the findings will be presented in this chapter. Findings of the supportive intervention will be discussed and compared to previous research in this area. Strengths and limitations of the research design are presented, followed by the implications for theory, practices, and research.

Summary of the Study

When a woman gives birth in a hospital that does not allow someone she knows to accompany her, she may experience a loss of support from her family members. She may have to deal with pain, anxiety, and stress alone in an unfamiliar environment. Social support during labour and delivery is an important factor in reducing maternal stress and improving childbirth outcomes. The purpose of this study was to compare an intervention of support by a close female relative during labour and delivery with the standard of care. Dependant variables were duration of active labour, incidence of spontaneous vaginal delivery, and satisfaction with the childbirth. *Convoy Model of Social Support* (Kahn and Antonucci, 1980) was the conceptual framework for the study. A posttest-only control group design was conducted in a 782-bed regional teaching hospital in the eastern part of Thailand. One hundred primiparous women who had uncomplicated pregnancies, gestational ages of 36 or more weeks, and met inclusion criteria were randomly assigned to either an experimental (n = 48) or a control group (n = 52). The woman in the experimental

group received the support from a close female relative of her choice from the time of hospital admission until 2 hours after birth as well as a usual care while those in the control group received only a usual care. Women in the experimental group had a significantly shorter duration of active labour than those in the control group ($p<.05$). There were no differences between groups with respect to the incidence of spontaneous vaginal delivery ($p=.73$). Women in the experimental group were more satisfied with their childbirth experience than those in the control group ($p<.01$). Qualitative data provided preliminary evidence regarding the acceptability of having close female relative support during labour and delivery. The close female relatives and health care providers perceived its benefit to labouring women and its feasibility to implement in hospital. The findings will be further discussed within the context of research hypotheses.

Discussion of the Findings

The first research hypothesis, "women who received support from a close female relative during labour and delivery have a shorter duration of active labour", was supported. The mean duration of active labour for women in the experimental group was 4 hours and 23 minutes while that in the control group was 5 hours and 9 minutes. The effect of the intervention on duration of active labour is has important clinical implications. A reduction in the length of active labour may facilitate maternal well-being by shortening a painful experience and even prevention interventions to enhance labour, thereby reducing the chance of associated morbidities and costs for the health institution (Langer *et al.*, 1998).

The primary theorized mechanism by which social support affects human labour involves the fear-tension-pain cycle (Dick-Read, 2005). It is hypothesized that escalating pain increases tension and anxiety during labour, which leads to an endogenous release of catecholamine, thus lowering uterine contractility with a resulting prolonged duration of active labour. In contrast, less anxiety decreases catecholamine levels, thereby improving uterine contractility and reducing the risk of prolonged labour (Lederman *et al*., 1978; 1985; Kennell *et al*., 1991).

According to the *Convoy Model of Social Support*, the duration of active labour are moderated by social support provided by a close female relative. The mechanism by which the social support provided by a close female relative reduces the duration of active labour is by mediating anxiety and stress.

A further explanation for the effect that *support from a female companion* has on the duration of active labour might be that maternal anxiety is reduced through support intervention, thus limiting the effect of the escalating cycle of fear, tension, and pain hypothesized in Grantly Dick-Read's classic work, *Childbirth Without Fear (2005)*. At the antenatal clinic, routinely nurses provide pregnant women with information about fetal growth and development, diet, exercise, hygiene, self-monitoring of foetal movement, and self-monitoring of complications during pregnancy. These contents were considered to ensure a health and well-being for pregnant women and their foetuses. However, the intervention was aimed at having a close female relative as a support companion for the labouring woman. Thus, in the preparation class of this study; both pregnant woman in the experimental group and her close female relative also learned basic information about the process of childbirth and were given suggestions for enhancing emotional and physical comfort from researcher. This knowledge can improve maternal understanding of what is going on

within her body during labour and delivery and knowledge with respect to how to facilitate the labour process and cope with labour pain. This may reduce her fear and anxiety when she is in an unfamiliar situation and increase her confidence of facing labour stress.

When labour commenced a close female relative who was known and chosen by each woman in the intervention group accompanied her to labour unit. When woman and her close female relative were admitted at the labour unit, intra partum nurse provided intermittent physical, emotional, and informational support. The close female relative also provided support activities by staying with woman from admission until 2 hours after birth. During this time, the close female relative encouraged and praised the efforts of the labouring woman. She also provided familiarity by holding her hand as well as touching, and hugging her. Most of all, the labouring woman knew that her family member would be there for her almost all the time. These supportive activities have been viewed as an important aspect of emotional support. House (1981) presents emotional support as the most important category through which the perception of support is conveyed to others. Emotional support activities reduce feelings of isolation; increase feelings of mental comfort; and reduce fear, anxiety, and labour pain. In the cycle as hypothesized by Grantly Dick-Read; less fear, leads to less anxiety, and less labour pain, which decreases release of catecholamine; thus strengthening uterine contractions and shortening the duration of active labour (Lederman *et al*., 1978, 1985; Kennell *et al*., 1991).

Furthermore, the close female relative provided support by carrying out activities that promote physical comfort. The most prevalent physical comfort activities included massaging painful areas such as the back and lower abdomen, applying cool face cloths to the forehead and assisting with ambulation and position

changes. Massage relieves pain by relaxing underlying muscles, cool cloths can enhance physical comfort, and ambulation and position changes promote the progress of labour.

This finding is consistent with previous research where it was found that women who had support from a female companion throughout labour and delivery had significantly shorter durations of labour (Langer *et al*., 1998; Kennell *et al*., 1991; Klaus *et al*., 1986; Pascoe, 1993; Prakyekeow Gacum, 1991; Scott, Berkowitz, and Klaus, 1999; Scott, Klaus, and Klaus, 1999; Sosa *et al*., 1980; Zhang *et al*., 1996).

The second research hypothesis, *support from a close female relative will increase the incidence of spontaneous vaginal delivery*, was not supported in this study. The incidence of vacuum extraction (V/E) for women in the experimental group was higher than the control group (25.0% vs. 17.3%) but the incidence of caesarean section (C/S) was lower for women in the experimental group than the control group (16.7% vs. 21.2%).

A possible explanation might be that spontaneous vaginal delivery is influenced by three factors; passage, passenger, and power (Martin and Hutchon, 2004). If a woman is unable to give birth spontaneously, it is because of the misalignment of one of these factors. For example, if the pelvis is too small *passage* will be prevented. Another reason for failed spontaneous delivery may be that the *passenger* (foetus) is too large for the maternal pelvis. The frequency of uterine contraction may be adequate but the intensity inadequate so that there is insufficient *power* to propel the foetus toward the pelvic floor (Chen, n.d.).

In this study, the reason for a lower incidence of spontaneous vaginal delivery for women in the experimental group might be the power from pushing efforts. Even though women in both groups received equal routine nursing care, when there was a

nursing shortage in a hospital setting (2-3 patients : 1 nurse) the close female relative was considered a resource for nursing staff. In this role, she may have been the one who encouraged maternal pushing efforts. It was the researcher's observation in the study that when women reached full cervical dilatation, the nurses spend more time coaching those women in the control group and encouraging these women to push. For the women in experimental group, a close female relative at the woman's side tried to imitate the health care provider's instructions to encourage the labouring woman to push but may have been less persuasive than experienced nurses, especially if maternal distress seemed to increase from with pushing efforts. A reduction of pushing effort results in a longer duration of second stage of labour (Roberts and Hanson, 2007). Just like this study found that women in the experimental group had longer duration of second stage than those in the control group (62.6 minutes vs. 49.8 minutes). Prolonged second stage of labour as a consequence of ineffective pushing efforts in the experimental group could become the rational for vacuum extraction. From these findings, it is recommended that the role of a close female relative be focused mainly both emotional and physical support. One preparation class that provided all of information and practice including coaching to push and praising maternal efforts may not be adequate to gain knowledge and become competent in helping a close female relative to push effectively.

It has been reported by previous researchers that increased levels of catecholamine, along with lactic acid from increased maternal pushing efforts and subsequent fatigue, may diminish the quality of contractions and slow labour progress (Nordstrom, Achanna, Kaka, and Arulkumaran, 2001; Quenby, Pierce, Brigham, and Wray, 2004). In contrast, the longer duration of the second stage may tire women and make it difficult for them to exert adequate pushing that will facilitate the birth of

their babies without assistance (Roberts and Woolley, 1996). Therefore, whether or not a woman received support from a close female relative during labour and delivery, significant differences in the incidence of spontaneous vaginal delivery were not found.

This result is similar to findings from previous studies where it was found that woman who received support from nurses did not appear to have a greater incidence of spontaneous vaginal delivery (Hodnett *et al*., 2002) and or a reduced incidence of assisted delivery (Gagnon, Waghorn, and Covell, 1997).

The third research hypothesis that women in the experimental group who received support from a close female relative during labour and delivery were more satisfied with their childbirth experience was supported. An explanation may be found in the fulfillment theory that patient satisfaction with the outcome of an experience is due to the "amount of satisfaction received from a situation, regardless of how much one feels they should and/or want to receive" (Bramadat and Driedger, 1993). Satisfaction involves how well the expectations and needs of labouring women are met (Bramadat and Drieger, 1993). A positive experience is derived from being able to participate actively in the birth experience and maintain a sense of control (Hodnett and Simmons-Tropea, 1987). Having expectations met and feeling a high level of personal control has consistently been associated with childbirth satisfaction.

According to the *Convoy Model of Social Support*, the satisfaction with the childbirth experience is moderated by social support provided by a close female relative. The mechanism by which a close female relative who is present during labour and delivery helps the women is through higher satisfaction with the childbirth experience. The satisfaction ameliorates the effects of anxiety and stress.

In this study, having a close female relative present may have influenced maternal feelings of satisfaction with her childbirth experience in the following ways. Firstly, a preparation class for each woman and her close female relative was provided. Preparation classes can lead to greater satisfaction with the childbirth experience in several ways. It informs women and their close family member of (1) realistic expectations, (2) comfort techniques to maintain control during labour, and (3) how to receive and give support during labour and delivery. It has been reported that women who attend a preparation class are more satisfied with their family member's participation during childbirth than those women who do not receive a preparation class (Goodman, Meckey, and Tavokoli, 2004; Hart and Foster, 1997; Quine *et al*., 1993). If a family member provides support, maternal satisfaction with participation during childbirth is more likely (Goodman, Meckey, and Tavokoli, 2004).

Secondly, the support of a close female relative resulted in the maternal perception that someone who she knew and chose to be with her was present and that she would not be left alone. The presence of a support person was one of the important factors associated with satisfaction with the childbirth experience (Bramadat and Driedger, 1993; Littlefied and Adams, 1987; Mercer, Hackey and Bostrom, 1983). Similar to this study, some women in the experimental group said after their birth that "I am very lucky that mother stayed with me almost all the time in labour unit, I can't ever imagine going in there alone without my mother".

On the other hand, women were more likely to be dissatisfied with their childbirth experience if a family member could not be present or if a family member was present physically but not providing support (Bramadat and Driedger, 1993). In this study, close female relatives were present almost all the time and provided

support that promoted emotional support and physical comfort. These could create a positive affect that elevates maternal self-confidence and self-control during labour and birth. Close female relatives and health care providers in this study reported that having a close female relative present had positive effects such as reducing maternal feelings of isolation, fear, anxiety, and pain while increasing the feeling of mental and physical comfort. In psychological theory, it is asserted that in the presence of a support companion, women feel empowered and more in control of their labour because they know that someone caring about them will always be there and could be called on to help if needed. With this belief the women are less likely to be as anxious as those without companions, who may be afraid and uncertain (Lefcourt, 1984 cited in Madi *et al*., 1999).

The findings in this study are consistent with those of other researchers who conducted reviews and meta-analyses where the effects of social support on women's views of their childbirth experience were assessed. Women who received continuous social support reported greater personal control during labour and birth (Hodnett and Osborn, 1989; Langer *et al*., 1998; Prakyekeow Gacum, 1991), higher coping behaviours during labour (Gordon *et al*., 1999; Hofmeyr *et al*., 1991; Pranee Sangrungnapaphan, 1988; Sujinda Threenate, 2001; Wiparat Sodsong, 2005), higher levels of satisfaction with childbirth (Langer *et al*., 1998), and a more positive childbirth experience (Prakyekeow Gacum, 1991).

Strengths and Limitations of the Study

The strength of the study is the research design. While the primary method was a quantitative study, qualitative data were collected by asking the close female

relatives and health care providers how they felt about having a close female relative for maternal support during labour and delivery and what modifications would enhance this is nursing intervention so that it could be effective integrated into hospital practice. This information is essential to understand how this nursing intervention could be modified in ways that would make it appropriate for and acceptable to those practicing within a hospital setting. The results of this study can be used to make a decision whether or not to proceed with this nursing intervention, (i.e., it speaks to the feasibility and transferability of the study).

A limitation that needs to be examined is how it is assessed that active labour has commenced. In case of women admitted after beginning the active labour, the start time of active labour was assessed only by asking women the time that they believed active labour had started. It is possible that women may recall error and be unable to recall an exact time. However, there is no reason to suspect that because both the experimental and control group would provide less accurate information regarding this (15 cases in experimental group vs. 16 cases in control group).

Research Implications

Implications for theory

The conceptual framework proposed this study is based on the *Convoy Model of Social Support* (Kahn and Antonucci, 1980). In the *Convoy Model of Social Support* it is asserted that social support is an important determinate of well-being both by directly or indirectly moderating the effects of stress. The results of this study clarify the conceptual framework linking social support and well-being. The social support convoy in this study was labouring women admitted to a hospital at labour

unit who need/desire support from a convoy structure and convoy function because they are experiencing pain in an unfamiliar birth environment. The convoy structure is a close female relative of their choice and the convoy function is support. Social support is more adequate if the support person is known and chosen by labouring women to stay with them as continuously as possible during labour. This support person is more likely to identify actions and activities that promote both emotional support (affect) and physical comfort (aid) to that particular woman. If a labouring woman received adequate social support from a close female relative, it was hypothesized that certain outcomes could be anticipated. These included a shorter duration of active labour, increased incidence of spontaneous vaginal delivery, and enhanced satisfaction with the childbirth experience.

The conceptual framework is extended and clarified in that a close female relative was important in that she provided supportive care that led to a shorter duration of active labour and higher satisfaction with the childbirth experience. However, this type of supportive care did not lead to a higher incidence of spontaneous vaginal delivery, which is an example of health and well-being in the general convoy theory. The mechanism by which the support from a close female relative led to a shorter duration of active labour is hypothesized to be as a stress mediator. The mechanism by which support from a close female relative helped women achieve higher satisfaction with their childbirth experience is hypothesized be by reducing the effects of stress. It is possible that further exploration of these mechanisms will lead to more refined theories of how stress resulting from lack of close personal contact and unfamiliar environments can be ameliorated through further nursing interventions.

Implications for practice

Evidence is provided that support from a close female relative during labour and delivery is safe and beneficial for primiparous Thai women. The intervention shortens the duration of active labour and enhances maternal satisfaction with the childbirth experience. In addition, the women and close female relatives both evaluated this intervention favorably. It is recommended that this nursing intervention should be available for labouring women in public hospitals in Thailand. The followings suggestions were made to facilitate the integration of this nursing intervention into hospital practice.

1. Intervention program

Preparation classes could include both the support person and labouring woman. One preparation class that provided all of information and practice including coaching to push and praising maternal efforts may not be adequate to gain knowledge and become competent in helping a close female relative to push effectively. Thus, there should be 2 preparation classes. The first class focuses on information. The second class focuses on practice. Both classes are done in order to prepare for the physical environment as well as able to provide supportive activities that encompass both emotional support and physical comfort during labour and delivery. After finishing the class, they should receive handbook so that they review the lesson and practice the physical comfort techniques at home.

Support activities could include both emotional support and physical comfort. These support activities should begin in the active labour and last until a few hours after delivery. During support person provides support activities on the labour unit, she would like health care providers to provide information and consultantation as well as help them to feel comfortable.

Support is more meaningful if woman is able to choose her support person during labour and delivery. This may include mother, mother in-law, sister, close friend, or husband. Health care providers need to respect her choice regarding whom that woman wants to provide support and to offer nursing support to both woman and her choice of support person.

2. Hospital policy

Of the 15 health care providers who responded to the question “is it possible to integrate this nursing intervention into hospital practice?”. Three (20%) stated that introducing a close female relative should be integrated into hospital practice. It encourages a family-center approach to maternal care. However, 6 (40%) health care providers noted that it is not suitable for a large public hospital like Chonburi Hospital because of crowded patients and limited space. They anticipated problems if emergency situations occurred or patients require more help. As for restricting the availability of support persons because of crowded patients and limited space, it is important to consider the beneficial effects of a support companion on duration of active labour and satisfaction with the childbirth experience, thus ensuring that making space for them would become a priority. Hospital should also provide lounge room for support person to relax. Furthermore, hospital administrators should encourage health care providers to integrate this nursing intervention in hospital practice.

3. National health policy

The results of this study provided evidence base data to support policymaker decision making on valuing a close female relative as a source of support for labouring women and handed out how to proceed with this nursing intervention in hospital practice. In the situation has shortage of nurses and midwives in Thailand so

it is not possible for them to provide all of the women needed support during labour and delivery. The integration of this nursing intervention as part of a comprehensive strategy to provide appropriate care to women and their families in public hospitals in Thailand is clinically significant. It is recommended that national health policy should establish specific hospital that provides this nursing intervention. In addition, this nursing practice should be established by national health policy as indicators in measuring hospital quality.

Implications for Research

Support from a close female relative during labour and delivery was a safe and effective intervention for decreasing the duration of active labour and enhancing satisfaction with the childbirth experience for primiparous Thai women in this study. As only low risk primiparous women were included, in further research with respect to the effects of this intervention in other populations such as multiparous women, adolescents, high risk pregnancy women (e.g., those desiring vaginal birth after Caesarean), and other cultural groups within Thailand. Measures of the pain, anxiety, mother-newborn bonding, and breast feeding should be included in further exploration of the effects of the support from a close female relative during labour and delivery. Furthermore, maternal support from their husband or male partner during labour and delivery needs to be rigorously examined. The sample size for this study was relatively small and therefore there is a possibility that reduced power may have led to Type II errors in that outliers may have created the potential for not finding true between-group differences. The power of this study can be increased by increasing the sample size so that other outcomes can be carefully examined. It was not possible to obtain a random sample of health care providers to evaluate the impact of this nursing intervention on their practice. However, those that were interviewed were

able to provide insights that can be used to identify both facilitators of and potential barriers to integration of this nursing intervention to a maternity setting. A carefully considered qualitative study may provide greater insights into barriers to using an intervention of close female relative as well as facilitators that could promote it.

Conclusion

Two hypotheses of the study were support. The intervention of support by a close female relative during labour and delivery had a significant in shortening duration of active labour and enhancing satisfaction with childbirth experience. The results of the study extended and clarified the *Convoy Model of Social Support* in that a close female relative was the important support person that provided support activities. Future investigation should identify the effects of this intervention in other population. This nursing intervention should be available for labouring women in public hospital in Thailand. Suggestions to facilitate the integration of this nursing intervention into hospital practice are detailed.

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APPENDICES

Appendix A1

Mother's Demographic Data Collection Tool

Directions: In the following questions, please indicate your answers by placing a check mark (√) in front of the best description and/or by filling in the blanks.

1. Age……years

2. Religion

[ ] Buddhism

[ ] Islam

[ ] Christian

3. Marital status

[ ] Married

[ ] Divorced/separated

4. Education

[ ] Grade 6 [ ] Grade 9

[ ] Grade 12 / Vocational certificate [ ] Diploma / High vocational certificate

[ ] Bachelor's degree [ ] Other……

5. Occupation

[ ] Housewife

[ ] Work outside home, please specify……

6. Family income per month

[ ] ≤ 5,000 Baht [ ] 5,001-10,000 Baht

[ ] 10,001-15,000 Baht [ ] 15,001-20,000 Baht

[ ] > 20,000 Baht

Appendix A2

Obstetric Data Collection Tool

1. Date of admission…….Time…….

2. Gestational age……weeks, estimated by..…….

3. Weight……kilograms, Height……centimeters

4. Cervical dilation when admission……

5. Duration of labour

   - Onset of labour…….....Date……
   - Onset of active labour ……Length of latent labour …….hours…….minutes
   - Onset of fully dilatation…….Length of active labour …….hours……..minutes
   - Birth of baby…….Length of second stage……....hours…....minutes
   - Birth of placenta……Length of third stage……..hours….....minutes

6. Rupture of membranes

   [ ] Spontaneous, time……length of time prior to birth…….hours……minutes

   [ ] Artificial, time…….length of time prior to birth……..hours……minutes

7. Received oxytocin

   [ ] No

   [ ] Yes, time……length of time prior to birth……hours……minutes

8. Number of doses analgesics medication

   [ ] None

   [ ] Once, Time…….Date……..

   [ ] More than one, Time……..Date……..

9. Complication during labour and delivery

[ ] No

[ ] Yes ……..

10. Type of delivery

[ ] Spontaneous vaginal delivery

[ ] Forceps extraction due to…….

[ ] Vacuum extraction due to…….

[ ] Caesarian section due to……..

11. Birth attended by nursing student

[ ] No

[ ] Yes

12. Health care provider during delivery

[ ] Obstetrician

[ ] Nurse, midwife

[ ] Doctoral student

[ ] Nursing student

13. Newborn's sex

[ ] Female

[ ] Male

14. Weight……grams

15. Apgar score

- At 1 minute …….
- At 5 minute……..

16. Newborn's complication during intra partum

[ ] No [ ] Yes……

Appendix A3

The Labour Agentry Scale

Your Feelings About Your Childbirth Experience

Just as no two women are exactly alike, no two women have exactly the same experiences during labour. Please try to recall your labour as vividly as you can. Think about your feelings during labour and birth. Of course, you probable had many different feelings, but try to remember what it was generally like for you during this time.

How to Use the Scale: This question is used as an example

I felt confident Almost Always ☐☐☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

If you felt confident **almost all of the time,** tick the box in this position

Almost Always ☑☐☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

If you felt confident **a lot but not always,** tick the box in this position

Almost Always ☐☑☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

If you felt confident **a little more than half the time,** tick the box in this position

Almost Always ☐☐☑☐☐☐☐ Rarely
1 2 3 4 5 6 7

If you felt confident **about half the time,** tick the box in this position

Almost Always ☐☐☐☑☐☐☐ Rarely
1 2 3 4 5 6 7

If you felt confident **slightly less than half the time,** tick the box in this position

Almost Always ☐☐☐☐☑☐☐ Rarely
1 2 3 4 5 6 7

If you **sometimes** felt confident**,** tick the box in this position

Almost Always ☐☐☐☐☐☑☐ Rarely
1 2 3 4 5 6 7

If you **never or almost never** felt confident, tick the box in this position

Almost Always ☐☐☐☐☐☐☑ Rarely
1 2 3 4 5 6 7

Please try to rate each statement on its own. Do not consider the other statements. The position of the boxes in relation to 'almost always' and 'rarely' is what is important**.**

Your Feelings About Your Childbirth Experience

Please see the opposite page for instructions on completing this scale.

1. I felt tense Almost Always ☐☐☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

2. I felt important Almost Always ☐☐☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

3. I felt confident Almost Always ☐☐☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

4. I was in control Almost Always ☐☐☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

5. I felt fearful Almost Always ☐☐☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

6. I felt relaxed Almost Always ☐☐☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

7. I felt good about my behavior Almost Always ☐☐☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

8. I felt helpless Almost Always ☐☐☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

9. I felt I was with people who care about me Almost Always ☐☐☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

10. I felt like a failure Almost Always ☐☐☐☐☐☐☐ Rarely
1 2 3 4 5 6 7

Appendix A4

Close Female Relative's Perspective Questionnaire

Part 1

Directions: In the following questions, please indicate your answers by placing a check mark (√) in front of the best description and/or by filling in the blanks.

1. Age……years

2. Education

[ ] Grade 6 [ ] Grade 9

[ ] Grade 12 [ ] Vocational certificate

[ ] Bachelor's degree [ ] Other……

3. Occupation

[ ] No

[ ] Housewife

[ ] Work outside home, please specify……

4. Experienced straightforward birth

[ ] No

[ ] Yes

5. Relationship with woman

[ ] Mother [ ] Sister

[ ] Close friend [ ] Other……

Part 2

Please give your opinion and suggestion with the following questions:

1. How do you feel that you were a supportive companion for your relative woman during labour and delivery?

……

……

……

2. Do you think which support activities that you provided during labour and delivery were beneficial for your relative woman?

……

……

……

3. During the time you provided supportive care for your relative woman at labour unit, did you need some help to facilitate your supportive role during labour and delivery? If so, please specify.

……

……

……

…….

4. Do you think hospital should introduce this nursing intervention as ongoing hospital practice?

……

……

……

Appendix A5

Health Care Provider's Perspective Questionnaire

Part 1

Directions: In the following questions, please indicate your answers by placing a check mark (√) in front of the best description and/or by filling in the blanks.

1. Age……years

2. Sex

    [ ] Male

    [ ] Female

3. Education

    [ ] Bachelor's degree

    [ ] Master's degree

    [ ] Other……

4. Occupation

    [ ] Obstetrician

    [ ] Resident

    [ ] Nurse/Midwife

5. Length of occupation……years

Part 2

Please give your opinion and suggestion with the following questions:

1. What do you think are there beneficial effects of having a close female relative to support a woman during labour and delivery?

1.1 Labouring women…….

……

……

1.2 Clinical practice……

……

……

1.3 Relationship between health care providers and labouring women as well as their female relatives……

…….

……

1.4 Other…….

……

……

2. Is it possible to integrate this nursing intervention into hospital practice?

……

……

……

……

……

APPENDIX B

List of Experts for Back-Translation

1. Associate Professor Dr. Wannee Deoisres

   Faculty of Nursing, Burapha University, Thailand

2. Assistance Professor Dr. Ratchneewan Ross

   College of Nursing, Kent State University, USA

3. Assistance Professor Dr. Akkarat Wongkaew

   Faculty of Engineering, Burapha University, Thailand

เอกสารเลขที่ 33 /2549

เอกสารรับรองโครงการวิจัย
โดย คณะกรรมการวิจัย โรงพยาบาลชลบุรี

.....

โครงการวิจัย : ผลของการสนับสนุนทางสังคมโดยญาติผู้หญิงที่ใกล้ชิดในระหว่างการเจ็บครรภ์และการคลอดต่อผลลัพธ์ของการคลอดและจิตสังคม

ผู้ดำเนินการวิจัยหลัก : นางศิริวรรณ ยืนยง

หน่วยงานที่รับผิดชอบ : คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

คณะกรรมการวิจัย โรงพยาบาลชลบุรี ได้พิจารณาแล้ว เห็นว่าสมควรให้ดำเนินการวิจัยในขอบข่ายของโครงการวิจัยที่เสนอได้ ตั้งแต่วันที่ออกหนังสือรับรองฉบับนี้ จนถึง 30 มิถุนายน 2550

ออกหนังสือ ณ วันที่ 24 พฤศจิกายน 2549

ลงนาม
(แพทย์หญิงผุดพรรณ กิตติคุณ)
ประธานคณะกรรมการวิจัย

ลงนาม
(นายอัษฎา ทียพันธ์)
นายแพทย์ 10
ด้านโรคหัวใจ สาขาอายุรกรรม
รักษาการในตำแหน่งผู้อำนวยการโรงพยาบาลชลบุรี

Appendix D1

ใบยินยอมของประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย (สำหรับหญิงตั้งครรภ์)

(Informed Consent Form for Pregnant Woman)

ชื่อโครงการวิจัย: ผลของการสนับสนุนจากญาติผู้หญิงที่ใกล้ชิดในระหว่างการเจ็บครรภ์และการคลอดต่อระยะเวลาการเจ็บครรภ์คลอด อุบัติการณ์การคลอดปกติ และความพึงพอใจต่อประสบการณ์การคลอด

เลขที่ของประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย.....

ข้าพเจ้า (นาง, นางสาว) .....ขอให้ความยินยอมที่จะเข้าร่วมโครงการวิจัยของ นาง ศิริวรรณ ยืนยง นิสิตดุษฎีบัณฑิต คณะพยาบาลศาสตร์จุฬาลงกรณ์มหาวิทยาลัย ที่มีวัตถุประสงค์เพื่อ ศึกษารูปแบบการดูแลมารดาในขณะคลอดที่จะช่วยให้ระยะเวลาการคลอดลดลง คลอดปกติสูงขึ้น และความพึงพอใจต่อประสบการณ์การคลอดมากขึ้น

ถ้าข้าพเจ้าเข้าร่วมโครงการวิจัยนี้ ผู้วิจัยจะให้ข้าพเจ้าสุ่มโดยเปิดซองจดหมายปิดผนึกเพื่อให้ทราบว่าข้าพเจ้าจะเข้ากลุ่มใด ถ้าข้าพเจ้าสุ่มได้กลุ่มที่มีญาติผู้หญิงเข้าไปให้การสนับสนุนในขณะคลอด ข้าพเจ้าจะพาญาติผู้หญิงมารับการสอนเพื่อเตรียมความรู้ในขณะที่ข้าพเจ้ามาฝากครรภ์ครั้งต่อไป และเมื่อข้าพเจ้าเจ็บท้องคลอด ญาติผู้นี้จะพาข้าพเจ้ามาโรงพยาบาล และคอยดูแลช่วยเหลือข้าพเจ้าจนกว่าจะคลอด แต่ถ้าข้าพเจ้าสุ่มได้กลุ่มที่ไม่มีญาติผู้หญิงเข้าไปให้การสนับสนุนในขณะคลอด ข้าพเจ้าจะได้รับการดูแลช่วยเหลือจากแพทย์และพยาบาลตามปกติที่โรงพยาบาลปฏิบัติ

ข้าพเจ้าทราบว่าผู้วิจัยจะขอให้ข้าพเจ้าเซ็นใบยินยอมการเข้าร่วมโครงการวิจัยด้วยความสมัครใจหลังจากที่ข้าพเจ้าตัดสินใจเข้าร่วมโครงการวิจัย และได้รับสำเนาใบยินยอมดังกล่าวจากผู้วิจัยจำนวน 1 ฉบับ และภายหลังจากที่ข้าพเจ้าคลอดแล้วภายใน 24 ชั่วโมง ผู้วิจัยจะประเมินผลการคลอดโดยดูจากแฟ้มเวชระเบียนของข้าพเจ้า และจะขอให้ข้าพเจ้าช่วยตอบแบบสอบถามความรู้สึกเกี่ยวกับประสบการณ์การคลอด หลังจากนั้นผู้วิจัยจะมอบของขวัญเด็กอ่อนให้ข้าพเจ้าเพื่อเป็นการขอบคุณที่เข้าร่วมโครงการวิจัย

การเข้าร่วมโครงการวิจัยครั้งนี้ ผู้วิจัยได้อธิบายให้ข้าพเจ้าทราบเกี่ยวกับโครงการวิจัยอย่างละเอียด ไม่มีสิ่งใดปกปิด ผู้วิจัยยินดีที่จะตอบคำถามทุกคำถามของข้าพเจ้า ผู้วิจัยรับรองว่าจะเก็บข้อมูลของข้าพเจ้าเป็นความลับ จะเปิดเผยเฉพาะในเนื้อหาที่เป็นผลสรุปการวิจัยเท่านั้น

ข้าพเจ้ายินยอมเข้าร่วมโครงการวิจัยด้วยความสมัครใจ และสามารถที่จะถอนตัวจากโครงการ วิจัยนี้เมื่อใดก็ได้ ทั้งนี้โดยไม่มีผลกระทบต่อประโยชน์ที่ข้าพเจ้าจะได้รับจากการรักษาพยาบาลในโรงพยาบาลแห่งนี้ และในกรณีที่เกิดข้อข้องใจหรือปัญหาที่ข้าพเจ้าต้องการปรึกษากับผู้วิจัย ข้าพเจ้าสามารถติดต่อกับผู้วิจัยคือ นาง ศิริวรรณ ยืนยง ได้ที่โรงพยาบาลชลบุรี หรือที่เบอร์โทรศัพท์ 06-111-0211, 038-746-010

.....	ลงนาม.....
สถานที่/วันที่	ผู้มีส่วนร่วมในการวิจัย
.....	ลงนาม.....
สถานที่/วันที่	ผู้วิจัย
.....	ลงนาม.....
สถานที่/วันที่	พยาน

Appendix D2

ใบยินยอมของประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย (สำหรับญาติผู้หญิง)

(Informed Consent Form for Close Female Relative)

ชื่อโครงการวิจัย: ผลของการสนับสนุนจากญาติผู้หญิงที่ใกล้ชิดในระหว่างการเจ็บครรภ์และการคลอดต่อระยะเวลาการเจ็บครรภ์คลอด อุบัติการณ์การคลอดปกติ และความพึงพอใจต่อประสบการณ์การคลอด

เลขที่ของประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย.....

ข้าพเจ้า (นาง, นางสาว) .....ขอให้ความยินยอมที่จะเข้าร่วมโครงการวิจัยของ นาง ศิริวรรณ ยืนยง นิสิตดุษฎีบัณฑิต คณะพยาบาลศาสตร์จุฬาลงกรณ์มหาวิทยาลัย ที่มีวัตถุประสงค์เพื่อ ศึกษารูปแบบการดูแลมารดาในขณะคลอดที่จะช่วยให้ระยะเวลาการคลอดลดลง คลอดปกติสูงขึ้น และความพึงพอใจต่อประสบการณ์การคลอดมากขึ้น

ถ้าข้าพเจ้าเข้าร่วมโครงการวิจัยนี้ ผู้วิจัยจะให้ข้าพเจ้ามาโรงพยาบาลพร้อมกับญาติในขณะที่เขามาฝากครรภ์เพื่อรับการสอนเรื่อง บทบาทของญาติในการดูแลช่วยเหลือมารดาในระหว่างการตั้งครรภ์และการคลอด และเมื่อญาติของข้าพเจ้าเจ็บท้องคลอด ข้าพเจ้าจะพาเขามาโรงพยาบาล และคอยดูแลช่วยเหลือเขาตั้งแต่พยาบาลรับเขาไว้ในโรงพยาบาลจนถึง 2 ชั่วโมงหลังจากที่เขาคลอดเสร็จ เช่น ช่วยเคลื่อนไหวร่างกายและจัดท่าให้สุขสบาย, ใช้ผ้าชุบน้ำเช็ดหน้า-เช็ดตัว, นวดหลัง, ลูบหน้าท้อง, ช่วยฝึกการหายใจและเบ่งคลอด, จับมือ, สัมผัสร่างกาย, หรือโอบกอด, พูดคุย, พูดให้กำลังใจ, และกล่าวชม ตลอดจนกระตุ้นให้เขาให้นมลูกและคอยดูแลช่วยเหลือเขาและลูกหลังจากที่คลอดเสร็จ

ข้าพเจ้าทราบว่าผู้วิจัยจะขอให้ข้าพเจ้าเซ็นใบยินยอมการเข้าร่วมโครงการวิจัยด้วยความสมัครใจหลังจากที่ข้าพเจ้าตัดสินใจเข้าร่วมโครงการวิจัย และได้รับสำเนาใบยินยอมดังกล่าวจากผู้วิจัยจำนวน 1 ฉบับ และภายหลังจากที่ญาติของข้าพเจ้าคลอดแล้ว ผู้วิจัยจะขอให้ข้าพเจ้าช่วยตอบแบบสอบถามความคิดเห็นเกี่ยวกับการให้การดูแลช่วยเหลือมารดาในขณะคลอด

การเข้าร่วมโครงการวิจัยครั้งนี้ ผู้วิจัยได้อธิบายให้ข้าพเจ้าทราบเกี่ยวกับโครงการวิจัยอย่างละเอียด ไม่มีสิ่งใดปกปิด ผู้วิจัยยินดีที่จะตอบคำถามทุกคำถามของข้าพเจ้า ผู้วิจัยรับรองว่าจะเก็บข้อมูลของข้าพเจ้าเป็นความลับ จะเปิดเผยเฉพาะในเนื้อหาที่เป็นผลสรุปการวิจัยเท่านั้น

ข้าพเจ้ายินยอมเข้าร่วมโครงการวิจัยด้วยความสมัครใจ และสามารถที่จะถอนตัวจากโครงการวิจัยนี้เมื่อใดก็ได้ทั้งนี้โดยไม่มีผลกระทบต่อประโยชน์ที่ญาติของข้าพเจ้าจะได้รับจากการรักษาพยาบาลในโรงพยาบาลแห่งนี้ และในกรณีที่เกิดข้อข้องใจหรือปัญหาที่ข้าพเจ้าต้องการปรึกษากับผู้วิจัย ข้าพเจ้าสามารถติดต่อกับผู้วิจัยคือ นาง ศิริวรรณ ยืนยง ได้ที่โรงพยาบาลชลบุรี หรือที่เบอร์โทรศัพท์ 06-111-0211, 038-746-010

.....	ลงนาม.....
สถานที่/วันที่	ผู้มีส่วนร่วมในการวิจัย
.....	ลงนาม.....
สถานที่/วันที่	ผู้วิจัย
.....	ลงนาม.....
สถานที่/วันที่	พยาน

Appendix D3

ใบยินยอมของประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย สำหรับบุคลากรทางการแพทย์

(Informed Consent Form for Health Care Providers)

ชื่อโครงการวิจัย: ผลของการสนับสนุนจากญาติผู้หญิงที่ใกล้ชิดในระหว่างการเจ็บครรภ์และการคลอดต่อระยะเวลาการเจ็บครรภ์คลอด อุบัติการณ์การคลอดปกติ และความพึงพอใจต่อประสบการณ์การคลอด

เลขที่ของประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย.....

ข้าพเจ้า (นาย, นาง, นางสาว) ..... ขอให้ความยินยอมที่จะเข้าร่วมโครงการวิจัยของ นาง ศิริวรรณ ยืนยง นิสิตดุษฎีบัณฑิต คณะพยาบาลศาสตร์จุฬาลงกรณ์มหาวิทยาลัย ที่มีวัตถุประสงค์เพื่อศึกษารูปแบบการดูแลมารดาในขณะคลอดที่จะช่วยให้ระยะเวลาการคลอดลดลง คลอดปกติสูงขึ้น และความพึงพอใจต่อประสบการณ์การคลอดมากขึ้น

รายละเอียดของการศึกษาวิจัยมีดังนี้ ผู้วิจัยจะให้กลุ่มตัวอย่างสุ่มโดยเปิดซองจดหมายปิดผนึกเข้ากลุ่มทดลอง (Experimental group) หรือกลุ่มควบคุม (Control group) หญิงตั้งครรภ์ที่สุ่มได้กลุ่มทดลองจะนำญาติผู้หญิงที่ใกล้ชิดตามที่ตนเองเลือกมาโรงพยาบาลพร้อมกับหญิงตั้งครรภ์เมื่อมาฝากครรภ์ครั้งต่อไป เพื่อรับการเตรียมตัวก่อนให้การดูแลมารดาในระหว่างการเจ็บครรภ์และการคลอด และเมื่อหญิงตั้งครรภ์เจ็บครรภ์คลอด ญาติผู้นี้จะพาหญิงตั้งครรภ์มาโรงพยาบาล และอยู่ในห้องคลอดกับหญิงตั้งครรภ์ และคอยดูแลช่วยเหลือหญิงตั้งครรภ์จนกว่าจะคลอด เช่น ช่วยเคลื่อนไหวร่างกายและจัดท่าให้สุขสบาย, ใช้ผ้าชุบน้ำเช็ดหน้า-เช็ดตัว, นวดหลัง, ลูบหน้าท้อง, ช่วยฝึกการหายใจและเบ่งคลอด, จับมือ, สัมผัสร่างกาย, หรือโอบกอด, พูดคุย, พูดให้กำลังใจ, และกล่าวชม ตลอดจนกระตุ้นมารดาเพื่อให้นมลูกหลังจากที่คลอดแล้ว และช่วยดูแลมารดาและบุตรจนกว่าจะย้ายไปที่แผนกหลังคลอด ส่วนหญิงตั้งครรภ์ที่สุ่มได้กลุ่มควบคุม จะได้รับการดูแลรักษาจากแพทย์และพยาบาลตามปกติที่โรงพยาบาลปฏิบัติ

การเข้าร่วมโครงการวิจัยครั้งนี้ ข้าพเจ้าทราบว่าผู้วิจัยจะขอให้ข้าพเจ้าเซ็นใบยินยอมการเข้าร่วมโครงการวิจัยด้วยความสมัครใจหลังจากที่ข้าพเจ้าตัดสินใจเข้าร่วมโครงการวิจัย และผู้วิจัยจะขอให้ข้าพเจ้าช่วยตอบแบบสอบถามความความคิดเห็นเกี่ยวกับการให้ญาติผู้หญิงเข้ามาดูแลช่วยเหลือมารดาในขณะคลอด

ผู้วิจัยได้อธิบายให้ข้าพเจ้าทราบเกี่ยวกับโครงการวิจัยอย่างละเอียด ไม่มีสิ่งใดปกปิด ผู้วิจัยยินดีที่จะตอบคำถามทุกคำถามของข้าพเจ้า ผู้วิจัยรับรองว่าจะเก็บข้อมูลของข้าพเจ้าเป็นความลับ จะเปิดเผยเฉพาะในเนื้อหาที่เป็นผลสรุปการวิจัยเท่านั้น

ข้าพเจ้ายินยอมเข้าร่วมโครงการวิจัยด้วยความสมัครใจ และสามารถที่จะถอนตัวจากโครงการวิจัยนี้เมื่อใดก็ได้ และในกรณีที่เกิดข้อข้องใจหรือปัญหาที่ข้าพเจ้าต้องการปรึกษากับผู้วิจัย ข้าพเจ้าสามารถติดต่อกับผู้วิจัยคือ นาง ศิริวรรณ ยืนยง ได้ที่โรงพยาบาลชลบุรี หรือที่เบอร์โทรศัพท์ 06-111-0211, 038-746-010

.....	ลงนาม.....
สถานที่/วันที่	ผู้มีส่วนร่วมในการวิจัย
.....	ลงนาม.....
สถานที่/วันที่	ผู้วิจัย
.....	ลงนาม.....
สถานที่/วันที่	**พยาน**

Appendix E

Lesson Plan

เรื่อง บทบาทของญาติในการดูแลช่วยเหลือมารดาในระหว่างการตั้งครรภ์และการคลอด

ผู้เรียน หญิงตั้งครรภ์และญาติผู้หญิง

ระยะเวลาการสอน 2 ชั่วโมง

รูปแบบการสอน สอนเป็นรายกลุ่มๆ ละประมาณ 2-3 คู่

สถานที่สอน หน่วยฝากครรภ์โรงพยาบาลชลบุรี

ผู้สอน นาง ศิริวรรณ ยืนยง นิสิตหลักสูตรพยาบาลศาสตรดุษฎีบัณฑิต คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

วัตถุประสงค์ทั่วไป

1. เพื่อให้หญิงตั้งครรภ์และญาติมีความรู้ความเข้าใจเกี่ยวกับความรู้พื้นฐานเกี่ยวกับการเจ็บครรภ์และการคลอด ตลอดจนการดูแลรักษาของโรงพยาบาลในขณะที่หญิงตั้งครรภ์มาคลอด
2. เพื่อให้ญาติมีความรู้ความเข้าใจเกี่ยวกับบทบาทของตนเองในการดูแลช่วยเหลือมารดาในระหว่างการเจ็บครรภ์และการคลอด ตลอดจนมีทักษะและความสามารถในการใช้เทคนิคต่างๆ เพื่อช่วยให้มารดาเกิดความสุขสบายและบรรเทาความเจ็บปวดในระหว่างการเจ็บครรภ์และการคลอด
3. เพื่อให้ญาติสามารถปฏิบัติตัวในขณะที่เข้ามาดูแลช่วยเหลือมารดาได้อย่างถูกต้องและเหมาะสม
4. เพื่อให้หญิงตั้งครรภ์สามารถเตรียมตัวและดูแลตนเองเบื้องต้นในขณะที่มีอาการเริ่มเจ็บครรภ์ และสามารถมาโรงพยาบาลเพื่อมาคลอดในเวลาที่เหมาะสม

วัตถุประสงค์	เนื้อหาและกิจกรรมการสอน	อุปกรณ์การสอน	การประเมินผล
- สร้างสัมพันธภาพ	**<u>เกริ่นนำเข้าสู่บทเรียน</u>** 1. ผู้สอนแนะนำตัวเองและขอบคุณหญิงตั้งครรภ์และญาติที่มาเข้าฟังการสอนในวันนี้ หลังจากนั้นผู้สอนให้หญิงตั้งครรภ์และญาติแนะนำตัวเอง และให้ญาติเล่าถึงประสบการณ์การคลอดของตนเองให้ฟัง 2. ผู้สอนบอกวัตถุประสงค์การสอนให้หญิงตั้งครรภ์และญาติทราบ		- สังเกตจากสีหน้าและการให้ความร่วมมือ
- ให้มีความเข้าใจลักษณะการเจ็บครรภ์และการคลอดโดยทั่วไป	**<u>ความรู้เบื้องต้นเกี่ยวกับการเจ็บครรภ์และการคลอด</u>** หญิงตั้งครรภ์ส่วนใหญ่เมื่อตั้งครรภ์ครบ 9 เดือนจะเริ่มมีอาการเจ็บครรภ์ และสามารถคลอดปกติทางช่องคลอดได้เองโดยธรรมชาติ การเจ็บครรภ์และการคลอดเป็นอย่างไร? เนื้อหาต่อไปนี้ผู้สอนจะอธิบายให้ผู้ที่จะเป็นคุณแม่คนใหม่และญาติได้ทราบ... โดยทั่วไปการคลอดจะแบ่งเป็น 3 ระยะ **ระยะที่ 1** ของการคลอด เป็นระยะที่มดลูกมีการหดรัดตัวเพื่อทำให้ปากมดลูกเปิด ปากมดลูกจะต้องเปิดหมด 10 เซนติเมตรจึงจะทำให้ทารกสามารถคลอดผ่านออกมาได้ ระยะนี้อาจใช้เวลานานถึง 18 ชั่วโมง สำหรับมารดาที่ไม่เคยผ่านคลอดมาก่อน ระยะนี้แบ่งเป็น 2 ระยะคือ ระยะมดลูกหดรัดตัวห่างและระยะที่มดลูกหดรัดตัวถี่ - ระยะที่มดลูกหดรัดตัวห่าง มดลูกจะหดรัดตัวเบาๆ ทุกๆ 20 นาที และเมื่อเวลาผ่านไปมดลูกจะค่อยๆ หดรัดตัวแรงขึ้นและถี่ขึ้นเป็นทุกๆ 5 นาที ในมารดาที่คลอดครั้งแรกอาจจะใช้เวลาเป็นวันๆ ที่มดลูกจะหดตัวถี่ขึ้น ระยะนี้ปากมดลูกจะค่อยๆ เริ่มเปิดจนกระทั่งเปิด 3 เซนติเมตร มารดาจะมีอาการเจ็บครรภ์แต่ไม่มากและสามารถพอทนได้ ถ้ามารดามาโรงพยาบาลในระยะที่เจ็บครรภ์ห่างๆ ทางโรงพยาบาลจะให้มารดากลับบ้านเพราะต้องใช้เวลาอีกนานจึงจะคลอด	- แผ่นภาพเนื้อหาความรู้เกี่ยวกับการเจ็บครรภ์และการคลอด	- สังเกตจากความตั้งใจและความสนใจ

วัตถุประสงค์	เนื้อหาและกิจกรรมการสอน	อุปกรณ์การสอน	การประเมินผล
	- ระยะที่มดลูกหดรัดตัวถี่ มดลูกจะหดรัดตัวแรงมากขึ้น โดยเจ็บทุกๆ 4-5 นาที และการเจ็บแต่ละครั้งอาจเจ็บนานถึง 1 นาที การลุกเดินหรือเคลื่อนไหวร่างกายก็ไม่ทำให้อาการเจ็บลดลง มารดาจะเริ่มรู้สึกทนไม่ไหว มารดาส่วนใหญ่จะมาโรงพยาบาลในระยะนี้ พยาบาลจะรับมารดาไว้ในโรงพยาบาล และเมื่อเวลาผ่านไปมากยิ่งขึ้นมดลูกจะหดรัดตัวแรงยิ่งขึ้นและอาจหดรัดตัวทุกๆ 2-3 นาที มารดาอาจจะหมดอารมณ์ขันไม่สนใจสิ่งแวดล้อม ไม่อยากพูดคุยกับใครเพราะปวดมาก สิ่งนี้เป็นสิ่งปกติที่เกิดกับผู้คลอดทุกคน พยาบาลจะคอยมาดูแลผู้คลอดเป็นระยะ มารดาส่วนใหญ่สามารถผ่านพ้นระยะนี้ไปได้ ระยะนี้อาจใช้เวลาอีก 6-8 ชั่วโมงในการอยู่ในห้องคลอดจึงจะทำให้ปากมดลูกเปิดหมด 10 เซนติเมตร ระยะนี้ญาติจะเป็นผู้มีบทบาทที่สำคัญในการให้การดูแลช่วยเหลือมารดาร่วมด้วย **ระยะที่** 2 ของการคลอด เป็นระยะที่ปากมดลูกเปิดหมด 10 เซนติเมตร มารดาจะมีความรู้สึกอยากเบ่งเพราะศีรษะทารกมากดบริเวณทวารหนักของมารดา มารดาท้องแรกส่วนใหญ่จะใช้เวลาในการเบ่งให้ทารกคลอดออกมาโดยใช้เวลาประมาณ 1-2 ชั่วโมง **ระยะที่** 3 ของการคลอด เป็นระยะที่รกคลอด หลังจากที่มารดาคลอดทารกแล้ว ความเจ็บปวดต่างๆ จะหายไป พยาบาลอาจจะบอกให้คุณแม่ช่วยเบ่งอีกครั้งเพื่อให้รกคลอดออกมา โดยทั่วไประยะนี้ใช้เวลาไม่นานประมาณ 10-20 นาที **<u>การดูแลรักษาของโรงพยาบาลในขณะที่มารดามาคลอด</u>** เมื่อมารดามีอาการเจ็บครรภ์คลอดและมาโรงพยาบาล เจ้าหน้าที่ของโรงพยาบาลจะพามารดามาที่ห้องคลอด เมื่อมาถึงห้องคลอดพยาบาลจะซักประวัติเกี่ยวกับอาการเจ็บครรภ์ ตรวจร่างกาย และตรวจภายในถ้าพบว่ามารดาเข้าสู่ระยะคลอด พยาบาลจะรับมารดาไว้ในห้องคลอด หลังจากนั้นพยาบาลจะโกนขน		
- เพื่อให้ทราบแนวทางการดูแลรักษาของโรงพยาบาล		- แผ่นภาพเนื้อหาเกี่ยวกับแนวทางการดูแลรักษา	- สังเกตจากความตั้งใจและความสนใจ - การซักถาม

วัตถุประสงค์	เนื้อหาและกิจกรรมการสอน	อุปกรณ์การสอน	การประเมินผล
	บริเวณอวัยวะสืบพันธุ์และสวนอุจจาระ และให้มารดานอนในห้องรอคลอด ในระยะนี้พยาบาลจะไม่ได้อนุญาตให้มารดารับประทานน้ำและอาหาร มารดาอาจได้รับน้ำเกลือทดแทนทางเส้นเลือด พยาบาลจะมาประเมินการหดรัดตัวของมดลูกโดยใช้มือสัมผัสที่หน้าท้องมารดาและประเมินการเต้นของหัวใจทารกโดยใช้หูฟังฟังบริเวณหน้าท้องของมารดาทุกๆ 30 นาที พยาบาลอาจจะขอตรวจภายในเพื่อประเมินการเปิดของปากมดลูกเป็นระยะทุกๆ 2-3 ชั่วโมง ในระหว่างนี้ญาติจะเป็นผู้มีบทบาทสำคัญในการช่วยดูแลมารดาให้มีความสุขสบายและมีกำลังใจเพื่อให้ผ่านพ้นช่วงเวลาที่ลำบากจากการเจ็บครรภ์นี้ไปได้ ในช่วงนี้ถ้ามารดาและญาติมีปัญหาหรือข้อสงสัยต่างๆ สามารถพูดคุยซักถามพยาบาลได้ ถ้าเป็นปัญหาที่เกินหน้าที่และความรับผิดชอบของพยาบาลที่จะแก้ไขได้ พยาบาลจะรายงานให้แพทย์ทราบเพื่อแก้ปัญหาต่อไป เมื่อระยะเวลาผ่านไป ปากมดลูกจะเปิดมากขึ้น เมื่อปากมดลูกเปิดหมด 10 เซนติเมตร พยาบาลจะย้ายมารดาไปในห้องคลอดเพื่อช่วยทำคลอด ในระหว่างนี้มารดาก็ยังต้องการการดูแลช่วยเหลือจากญาติต่อไปจนกว่าการคลอดจะเสร็จสิ้น **<u>บทบาทของญาติในการดูแลช่วยเหลือมารดาระหว่างการเจ็บครรภ์และการคลอด</u>** การเจ็บครรภ์และการคลอดเป็นสิ่งธรรมชาติของร่างกายที่มารดาทุกคนต้องเผชิญ ญาติที่เข้ามาอยู่กับมารดาระหว่างการเจ็บครรภ์และการคลอดไม่ได้เป็นผู้ที่จะทำให้ความเจ็บปวดจากการเจ็บครรภ์คลอดหายไป แต่ญาติจะเป็นผู้ที่มีบทบาทสำคัญในการช่วยดูแลมารดาให้มีความสุขสบายทางด้านร่างกายและมีกำลังใจที่ดีที่จะช่วยให้มารดาผ่านพ้นช่วงเวลาที่ยากลำบากจากการเจ็บครรภ์และการคลอดไปได้ด้วยดี บทบาทที่สำคัญของญาติในระหว่างการเจ็บครรภ์และการคลอดมีดังนี้ 1. พาผู้คลอดมาโรงพยาบาลเมื่อผู้คลอดมีอาการเจ็บครรภ์ถี่ขึ้น 2. อยู่กับผู้คลอดตลอดระยะเวลาการเจ็บครรภ์และการคลอดตั้งแต่ผู้คลอดมาโรงพยาบาลจนกระทั่ง	ของโรงพยาบาล - หลังจากที่สอนเนื้อหาต่างๆ เสร็จแล้วพาไปดูสถานการณ์จริงในห้องคลอด	
- เพื่อให้มีความรู้ความเข้าใจบทบาทของตนเองในการดูแลช่วยเหลือมารดาในระหว่างการเจ็บครรภ์และการคลอด		- แผนภาพแสดงบทบาทของญาติในการดูแลช่วยเหลือมารดาในระหว่างการเจ็บครรภ์และการคลอด	- สังเกตจากความตั้งใจและความสนใจ - การซักถาม

วัตถุประสงค์	เนื้อหาและกิจกรรมการสอน	อุปกรณ์การสอน	การประเมินผล
	ผู้คลอดคลอดเสร็จและนอนพักในห้องคลอด 2 ชั่วโมงก่อนที่จะย้ายไปที่แผนกหลังคลอด ยกเว้นช่วงเวลาสั้นๆ ที่ญาติไปรับประทานอาหารและเข้าห้องน้ำ การที่ผู้คลอดมีญาติที่รู้จักและสนิทสนมอยู่ด้วยตลอดระยะเวลาการเจ็บครรภ์และการคลอดจะทำให้ผู้คลอดรู้สึกสบายใจ มีกำลังใจ และช่วยลดความวิตกกังวลต่างๆ ของผู้คลอดลงได้ 3. ดูแลผู้คลอดให้เกิดความสุขสบายทางด้านร่างกาย โดยปฏิบัติดังนี้ 3.1 ช่วยเคลื่อนไหวร่างกายและจัดท่าให้ผู้คลอดเกิดความสุขสบายทุกๆ 1 ชั่วโมง หรือตามที่ผู้คลอดต้องการ 3.2 ใช้ผ้าชุบน้ำเย็นเช็ดหน้า-เช็ดตัวและวางบริเวณหน้าผากผู้คลอดทุกๆ 1 ชั่วโมง หรือตามที่ผู้คลอดต้องการ 3.3 นวดบริเวณที่ผู้คลอดปวดมาก เช่น หลังส่วนล่างและต้นขา โดยนวดนาน 5 นาที ทุกๆ 30 นาที 3.4 หายใจตามเทคนิคการหายใจพร้อมกับผู้คลอดเมื่อมดลูกมีการหดรัดตัว 3.5 ช่วยเบ่งคลอด และบอกผู้คลอดให้ทราบถึงความก้าวหน้าของการเบ่งคลอดเป็นระยะ เช่น เมื่อเห็นศีรษะทารกออกมาให้เห็นทางช่องคลอด เป็นต้น 4. ดูแลสนับสนุนให้กำลังใจแก่ผู้คลอด โดยปฏิบัติดังนี้ 4.1 จับมือผู้คลอดนาน 5-10 นาที ทุกๆ 1 ชั่วโมง 4.2 พูดคุยและสบตาผู้คลอดตามที่ผู้คลอดต้องการ 4.3 พูดให้กำลังใจผู้คลอดและกล่าวชมผู้คลอดอย่างน้อยทุก 30 นาที หรือตามที่ผู้คลอดต้องการ 5. สนับสนุนผู้คลอดในการให้นมลูกหลังจากที่ทารกคลอดออกมา		

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- เพื่อให้ญาติสามารถใช้เทคนิคต่างๆ ในการดูแลมารดาให้เกิดความสุขสบายและช่วยบรรเทาความเจ็บปวดในระหว่างการเจ็บครรภ์และการคลอด	6. ช่วยดูแลผู้คลอดและทารกในช่วง 2 ชั่วโมงหลังจากที่มารดาคลอดเสร็จ **<u>หมายเหตุ</u>** เนื่องจากโดยทั่วไปโรงพยาบาลไม่ได้อนุญาตให้ญาติเข้ามาอยู่ในห้องคลอดกับผู้คลอด ดังนั้นในระหว่างที่ญาติเข้ามาให้การดูแลมารดาในห้องคลอด ขอให้ญาติอยู่เฉพาะบริเวณเตียงของผู้คลอดที่เป็นญาติของตนเองเท่านั้น และไม่ควรส่งเสียงดังที่อาจทำให้เกิดการรบกวนผู้คลอดคนอื่น และที่สำคัญญาติควรทำบทบาทของตนเองให้ดีที่สุดเพื่อช่วยให้ผู้คลอดผ่านพ้นการคลอดไปได้ด้วยดี ถ้ามีสิ่งใดสงสัยสามารถสอบถามได้โดยใช้คำพูดที่สุภาพนุ่มนวลจะทำให้เจ้าหน้าที่ทุกคนเต็มใจที่จะให้คำแนะนำและความช่วยเหลือ **<u>เทคนิคที่ใช้เพื่อให้เกิดความสุขสบายและบรรเทาความเจ็บปวดในระหว่างการเจ็บครรภ์และการคลอด</u>** เทคนิคต่างๆ ที่ใช้โดยทั่วไปมีดังนี้ 1. ช่วยเคลื่อนไหวร่างกายและจัดท่าให้ผู้คลอดเกิดความสุขสบาย: ท่าที่เหมาะสมคือท่านั่งหรือท่ากึ่งนั่งเพราะจะช่วยทำให้การคลอดก้าวหน้าเร็วขึ้น นอกจากนี้ท่ายืนและท่าคุกเข่าโดยมีญาติเป็นผู้ช่วยประคองก็เป็นท่าที่ดีและช่วยให้อาการปวดลดลงและยังทำให้ผู้คลอดเกิดความอบอุ่นจากการที่มีญาติช่วยประคอง 2. ประคบเย็น: ความเย็นเกิดจากการใช้ผ้าชุบน้ำเย็น โดยนำผ้าเย็นมาเช็ดหน้า-เช็ดตัวและวางไว้บริเวณหน้าผากของผู้คลอด จะช่วยทำให้ผู้คลอดรู้สึกสดชื่นขึ้นและลดความตึงเครียดให้น้อยลง 3. การนวด: บริเวณที่ผู้คลอดปวดมากในระหว่างเจ็บครรภ์คือบริเวณหลังส่วนล่างและต้นขา ญาติสามารถช่วยนวดบริเวณดังกล่าวหรือบริเวณที่ผู้คลอดอยากให้นวด การนวดจะช่วยลดความตึงเครียดให้น้อยลงและช่วยลดความเจ็บปวดลงได้	- ที่นอนและหมอน	- สังเกตจากความตั้งใจและความสนใจการฝึกปฏิบัติ - สามารถสาธิตย้อนกลับได้ถูกต้องอย่างน้อย 70%

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	4. เทคนิคการหายใจ: เทคนิคการหายใจที่ใช้ในขณะที่กำลังเจ็บครรภ์มีดังนี้ เมื่อมดลูกเริ่มหดรัดตัวให้มารดาสูดลมหายใจเข้าทางจมูกช้าๆ แล้วค่อยๆ ผ่อนลมหายใจออกทางปากช้าๆ โดยเปิดปากเล็กน้อย ทำเช่นนี้เรื่อยๆ จนมดลูกคลายตัว ถ้ามดลูกมีการหดรัดตัวแรงขึ้น มารดารู้สึกว่าการหายใจแบบนี้ไม่ได้ผล ให้มารดาหายใจเข้าออกทางปากแบบตื้นในอัตราที่เร็วขึ้น 5. เทคนิคการเบ่งคลอด: ญาติอาจจะช่วยพยาบาลในการเชียร์เบ่งในขณะที่ปากมดลูกของผู้คลอดเปิดหมดแล้ว การเชียร์เบ่งจะทำให้มารดาเบ่งอย่างมีประสิทธิภาพและสามารถคลอดได้เร็วขึ้น โดยทั่วไปพยาบาลจะสอนเทคนิคการเบ่งคลอดดังนี้ เมื่อมดลูกมีการหดรัดตัวพยาบาลจะให้ผู้คลอดสูดลมหายใจเข้า 2-3 ครั้ง ครั้งที่ 3 จะให้ผู้คลอดกลั้นลมหายใจไว้สักพัก แล้วเบ่งลงก้นยาวๆ หลังจากนั้นทำแบบเดิม และเบ่งซ้ำอีก 2 ครั้ง เมื่อมดลูกคลายตัวให้มารดาพักให้เต็มที่เพื่อจะได้มีแรงเบ่งเมื่อมดลูกหดรัดตัวในครั้งต่อไป นอกจากนี้ในขณะช่วยเชียร์เบ่งญาติควรบอกผู้คลอดให้ทราบถึงความก้าวหน้าของการเบ่งคลอด เช่น เมื่อเห็นศีรษะทารกออกมาให้เห็นทางช่องคลอด รวมทั้งกล่าวชมผู้คลอดเป็นระยะๆ จะทำให้มารดามีกำลังใจในการเบ่งคลอดมากขึ้น **<u>การเตรียมตัวและการดูแลตนเองในขณะที่มีอาการเริ่มเจ็บครรภ์</u>** เมื่อผู้คลอดเริ่มมีอาการเจ็บครรภ์ ช่วงนี้อาจใช้ เวลาอีกหลายชั่วโมงหรือเป็นวันที่ผู้คลอดครรภ์แรกจะมีอาการเจ็บครรภ์ถี่และมาโรงพยาบาลได้ ดังนั้นวิธีที่ดีที่สุดคือผู้คลอดควรเตรียมตัวและดูแลตนเองเบื้องต้นในขณะอยู่ที่บ้าน โดยปฏิบัติดังนี้ 1. โทรศัพท์หาญาติผู้หญิงที่จะมาให้การดูแลผู้คลอดในห้องคลอด เพื่อบอกให้เธอทราบ เธอจะได้มีเวลาในการจัดการงานต่างๆ ให้เรียบร้อยก่อนที่จะไปโรงพยาบาลและอยู่กับผู้คลอดจนกระทั่งคลอด		
- เพื่อให้ผู้คลอดสามารถเตรียมตัวและดูแลตนเองเบื้องต้นก่อนมาโรงพยาบาลได้ถูกต้อง		- แผนภาพเนื้อหาความรู้เกี่ยวกับการเตรียมตัวและการดูแลตนเองในขณะที่มีอาการเริ่มเจ็บครรภ์	- สังเกตจากความตั้งใจและความสนใจ - การพูดคุยซักถาม

วัตถุประสงค์	เนื้อหาและกิจกรรมการสอน	อุปกรณ์การสอน	การประเมินผล
	2. เตรียมสิ่งของต่างๆ ที่จะมาโรงพยาบาล พร้อมทั้งเตรียมสมุดฝากครรภ์ไว้ให้พร้อม เพื่อจะได้นำมาโรงพยาบาลเมื่อมีอาการเจ็บครรภ์ถี่ 3. การดูแลตนเองในขณะที่เริ่มมีอาการเจ็บครรภ์ก่อนที่จะมาโรงพยาบาล 3.1 พักผ่อน: ผู้คลอดบางคนอาจไม่สามารถพักผ่อนได้แม้กระทั่งในช่วงเจ็บครรภ์ห่างๆ แต่การพักผ่อนเป็นสิ่งที่สำคัญที่จะช่วยให้ผู้คลอดมีแรงเพื่อเผชิญกับการเจ็บครรภ์ที่รุนแรงมากขึ้นต่อไป ดังนั้นวิธีที่ดีที่สุดคือเมื่อผู้คลอดเริ่มมีอาการเจ็บครรภ์ห่างๆ ผู้คลอดควรงีบหลับเพื่อเก็บแรงไว้ใช้เมื่อมีอาการเจ็บครรภ์มากขึ้น 3.2 การรับประทานอาหารและน้ำ: เมื่อผู้คลอดมาโรงพยาบาลทางโรงพยาบาลจะไม่อนุญาตให้รับประทานอะไร เพื่อป้องกันไม่ให้เกิดการสำลักอาหารในกรณีผู้คลอดมีอาการผิดปกติและต้องผ่าตัดคลอด ดังนั้นในช่วงที่ผู้คลอดอยู่บ้านจึงควรรับประทานอาหารที่ย่อยง่ายและดื่มน้ำเปล่าหรือน้ำผลไม้ เพื่อจะได้มีแรงในขณะที่ไปอยู่โรงพยาบาลในช่วงที่เจ็บครรภ์ถี่ขึ้น 3.3 การเคลื่อนไหวและเปลี่ยนท่าทาง: การเคลื่อนไหวเป็นวิธีที่ดีในการช่วยลดอาการปวดจากการเจ็บครรภ์ ดังนั้นเมื่อมีอาการเจ็บครรภ์มากขึ้นผู้คลอดอาจใช้วิธีการเดินไป-เดินมาจะช่วยทำให้อาการเจ็บครรภ์ลดน้อยลง และยังทำให้ทารกเคลื่อนต่ำลง ซึ่งจะทำให้การคลอดก้าวหน้าเร็วขึ้นอีกด้วย **<u>อาการแสดงที่มารดาควรมาโรงพยาบาล</u>** หญิงตั้งครรภ์ควรมาโรงพยาบาลเพื่อมาคลอดเมื่อมีอาการดังนี้		
- เพื่อให้มารดาสามารถมาโรงพยาบาลในช่วงเวลาที่เหมาะสม	1. มีอาการเจ็บครรภ์ถี่ทุกๆ 4-5 นาที และในแต่ละครั้งเจ็บนานเกือบ 1 นาที และต้องมีอาการเช่นนี้เป็นเวลาอย่างน้อย 1 ชั่วโมง 2. มีอาการปวดมากเมื่อมดลูกหดรัดตัว ถึงแม้ว่าจะใช้เทคนิคต่างๆ เพื่อลดความเจ็บปวดแล้วก็ยังไม่ดีขึ้น 3. ผู้คลอดไม่สามารถพูดคุยต่อไปได้ในขณะที่มดลูกหดรัดตัว	- แผนภาพเนื้อหาเกี่ยวกับอาการแสดงที่มารดาควรมาโรงพยาบาล	- สามารถบอกอาการที่ควรมาโรงพยาบาลได้อย่างน้อย 3 ข้อ - สังเกตจากความ

วัตถุประสงค์	เนื้อหาและกิจกรรมการสอน	อุปกรณ์การสอน	การประเมินผล
- เพื่อให้ญาติสามารถปฏิบัติตัวในขณะอยู่ในห้องคลอดได้อย่างถูกต้องเหมาะสม	4. มีมูกปนเลือดออกมาทางช่องคลอด 5. ถุงน้ำคร่ำแตก **<u>ข้อควรปฏิบัติของญาติเมื่อเข้ามาดูแลมารดาในห้องคลอด</u>** โดยปกติทางโรงพยาบาลไม่ได้อนุญาตให้ญาติเข้ามาดูแลช่วยเหลือมารดาในขณะคลอด ดังนั้นเมื่อญาติเข้ามาในห้องคลอดเพื่อดูแลช่วยเหลือมารดาให้ผ่านการคลอดไปได้ด้วยดี จึงควรจะต้องปฏิบัติดังนี้ 1. เมื่อเข้ามาในเขตสะอาดของห้องคลอด ควรเปลี่ยนรองเท้า และสวมเสื้อคลุมของโรงพยาบาล พร้อมทั้งใส่หมวกคลุมผมให้เรียบร้อย ก่อนที่จะเข้าไปดูแลช่วยเหลือมารดาในห้องรอคลอด 2. ในขณะที่ญาติอยู่ในห้องคลอด ควรอยู่เฉพาะเตียงของมารดาที่เป็นญาติของตนเอง และให้การดูแลช่วยเหลือญาติให้ดีที่สุดเท่าที่จะสามารถทำได้ ตามที่ได้รับการสอนมา 3. ในกรณีที่แพทย์-พยาบาลต้องการตรวจ หรือให้การดูแลรักษาต่าง ๆ แก่มารดา ญาติควรช่วยให้แพทย์-พยาบาลสามารถตรวจรักษาได้อย่างสะดวก ไม่ขวางทางการปฏิบัติงานของแพทย์-พยาบาล 4. ในระหว่างที่มารดาอยู่ในความดูแลของแพทย์-พยาบาล ถ้ามารดาหรือญาติมีสิ่งใดสงสัยหรือต้องการคำแนะนำ สามารถสอบถามแพทย์-พยาบาลได้ โดยใช้คำพูดที่นุ่มนวลและสุภาพ จะทำให้แพทย์-พยาบาลทุกคนเต็มใจที่จะให้คำแนะนำและให้ความช่วยเหลือแก่ท่าน 5. ถ้าญาติต้องการออกไปนอกห้องคลอดเพื่อทำธุระต่าง ๆ เช่น รับประทานอาหาร โทรศัพท์ หรือพูดคุยกับญาติ ควรบอกให้ผู้วิจัยหรือพยาบาลทราบก่อน และไม่ควรออกไปทำธุระนานเกิน 30 นาที 6. เมื่อญาติจะออกไปนอกห้องคลอด ควรถอดเสื้อคลุมแขวนไว้ในห้องที่จัดให้ และเปลี่ยนรองเท้าก่อนออกนอกเขตสะอาดของห้องคลอด และเมื่อกลับเข้ามาให้เปลี่ยนรองเท้าและสวมเสื้อคลุมเหมือนเดิม	- แผนภาพเนื้อหาเกี่ยวกับข้อควรปฏิบัติของญาติเมื่อเข้ามาดูแลมารดาในห้องคลอด	สนใจและการพูดคุยซักถาม

วัตถุประสงค์	เนื้อหาและกิจกรรมการสอน	อุปกรณ์การสอน	การประเมินผล
- เพื่อให้เกิดความคุ้นเคยกับสถานที่และเจาหน้าที่ - เพื่อให้ตระหนักถึงบทบาทที่สำคัญของญาติในการดูแลช่วยเหลือผู้คลอดในขณะคลอด	**<u>พาดูห้องคลอด</u>** ผู้สอนพาหญิงตั้งครรภ์และญาติดูห้องต่างๆ ที่ต้องมาใช้ในขณะที่มาคลอด ได้แก่ ห้องรับใหม่ ห้องรอคลอด ห้องคลอด พร้อมทั้งแนะนำให้รู้จักพยาบาลและเจ้าหน้าที่ต่างๆ ภายในห้องคลอด หลังจากนั้นผู้สอนเปิดโอกาสให้หญิงตั้งครรภ์และญาติได้พูดคุยซักถามข้อสงสัยต่างๆ **<u>สรุป</u>** การเจ็บครรภ์และการคลอดเป็นสิ่งธรรมชาติที่เกิดขึ้นแก่ผู้คลอดทุกคน การคลอดในโรงพยาบาลช่วยทำให้ปลอดภัย แต่มารดาอาจต้องเจอกับสิ่งแวดล้อมที่ไม่คุ้นเคย ผู้คนที่ไม่รู้จัก การมีญาติผู้หญิงที่ผู้คลอดรู้จักและสนิทสนมมาอยู่ด้วยในระหว่างการเจ็บครรภ์และการคลอด และคอยให้การดูแลช่วยเหลือเพื่อให้เกิดความสุขสบายทางร่างกายและคอยให้กำลังใจระหว่างการคลอด จะทำให้เกิดผลดีต่อมารดาและทารกที่จะคลอดออกมา ดังนั้นญาติจึงเป็นผู้ที่มีบทบาทสำคัญต่อการคลอดที่จะมาถึงอันใกล้นี้ของมารดาเป็นอย่างมาก ผู้สอนขอให้ญาติกลับไปทบทวนบทบาทต่างๆ ของตนเองที่จะช่วยดูแลช่วยเหลือมารดาในระหว่างการเจ็บครรภ์และการคลอด ถ้ามีอะไรไม่เข้าใจหรือมีข้อสงสัย สามารถโทรมาปรึกษาหรือสอบถามผู้สอนได้ตลอดเวลาที่เบอร์โทรศัพท์ 086-111-0211 ขอขอบคุณมารดาและญาติทุกคนที่มาร่วมเข้าฟังการสอนในวันนี้ ก่อนกลับใครมีข้อสงสัยอะไรที่ต้องการซักถามสามารถซักถามได้เลยค่ะ	- สถานที่จริง	- สังเกตจากความสนใจและสีหน้าท่าทาง - หญิงตั้งครรภ์และญาติสามารถช่วยกันสรุปบทบาทของญาติในการดูแลช่วยเหลือผู้คลอดในขณะคลอดอย่างน้อย 70%

APPENDIX F

Example of Support Activities

Women in labour unit

CFR stays with woman in labour

CFR holds hand, touches, talks to woman

CFR uses cool face cloths

CFR helps to find comfortable position

CFR assists with ambulation

CFR massages painful area

CFR encourages woman efforts

Cervical dilation 9 cm. now

Nurse Aid transfers her to delivery room

CFR still stays there and provides support

Preparation for giving birth

CFR encourages pushing efforts

Baby passes birth cannel

Baby was born

After birth, CFR encourages breast feeding

CFR looks after baby and mother

One day after delivery, at post partum ward

APPENDIX G

Effect Size for this Study

An effect size *(d)* is the difference in the means between two groups divided by the pooled standard deviation (Cohen, 1988):

$$d = \frac{[M_1 - M_2]}{\text{SD pooled}}$$

In this study, women in the experimental group have mean duration of active labour of 4 hours and 23 minutes = 263 minutes while women in the control group have mean duration of active labour of 5 hours and 9 minutes = 309 minutes, and the pooled standard deviation is 1 hours and 33 minutes = 93 minutes, the effect size is:

$$d = \frac{[263 \text{ minutes} - 309 \text{ minutes}]}{93 \text{ minutes}}$$

$$d = \frac{46}{93}$$

$$d = .50$$

Therefore, effect size for this study is about .50

BIOGRAPHY

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