

**THE EFFECTS OF SUPPORTIVE NURSING CARE AND
UPRIGHT POSITIONING DURING LABOR ON
LABOR PAIN, DURATION OF LABOR AND
APGAR SCORES OF NEWBORNS IN
THE FIRST-TIME MOTHERS**



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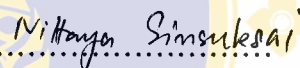
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.....
Miss Panida gumlae
Candidate


.....
Asst. Prof. Nittaya Sinsuksai,
Ph.D.
Major-Advisor


.....
Assoc. Prof. Supanee Athaseri,
M.Ed
Co-Advisor


.....
Asst. Prof. Thitima Champirat
M.Sc (Nursing)
Co-Advisor


.....
Assoc. Prof. Waraporn Thitinanthapan
D.D.S, Grad. Dip. Clin. Sc. (Endodontics)
M.Sc. (Clinical Science), Board in Endodontics
Acting Dean
Faculty of Graduate Studies


.....
Assoc. Prof. Kobkul Phanchaoenworakul,
Ph.D.
Acting chair
Master of Nursing science
Faculty of Nursing Mahidol University

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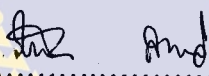
Was submitted to the Faculty of Graduates Studies, Mahidol University

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Major in Maternal and Child Nursing

On

July 21, 2004


Miss Panida gumlae
Candidate


Asst. Prof. Nittaya Sinsuksai,
Ph.D.
Chair


Asst. Prof. Pornpimol Raungvutilert,
M.D.
Member


Assoc. Prof. Supranee Athaseri,
M.Ed
Member


Assoc. Prof. Saipin Kasemkitwattana
D.N.S.
Member


Asst. Prof. Thitima Champirat,
M.Sc.
Member


Assoc. Prof. Waraporn Thitinanthapan
D.D.S, Grad. Dip. Clin. Sc. (Endodontics)
M.Sc. (Clinical Science), Board in Endodontics
Acting Dean
Faculty of Graduate Studies
Mahidol University


Assoc. Prof. Kobkul Phanchaoenworakul,
Ph.D.
Dean
Faculty of Nursing
Mahidol University

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Panida Gumlae

THE EFFECTS OF SUPPORTIVE NURSING AND UPRIGHT POSITIONING DURING LABOR ON LABOR PAIN, DURATION OF LABOR AND APGAR SCORES OF NEWBORN IN THE FIRST-TIME MOTHERS.

PANIDA GUMLAE 4237995 NSMC/M
M.N.S. (MATERNAL AND CHILD NURSING)

THESIS ADVISORS: NITTAYA SINSUKSAI, Ph.D, SUPRANEE ATHASERI, M.Ed., THITIMA CHAMPIRAT, M.Sc. (NURSING)

ABSTRACT

The purpose of this quasi-experimental research is to determine the effects of supportive nursing and upright positioning during labor on labor pain, duration of labor and Apgar scores in the first-time mothers. This study was based on Hodnett's concept of supportive nursing care and, the upright positioning during labor. Purposive sampling was composed of 60 first-time mothers who gave birth at Mukdaharn Hospital. They were divided into two groups: experimental and control group (n=30).

The data were collected using three instruments: the Personal Data Questionnaire and Labor Record Form, the Visual Analogue Scale and Position Observation Form. Data was analyzed with SPSS Program by percentage, mean, standard deviation, chi-square and independent t-test

The results of the study showed that labor pain in the experimental group was significantly less than that in the control group ($p < .05$). Duration of labor and Apgar scores in the experimental group was not significantly different from those in the control group ($p > .05$). The results of the study suggested that supportive nursing care and upright positioning during labor can help to reduce perception of labor pain.

KEY WORDS : SUPPORTIVE NURSING/LABOR PAIN/DURATION OF
LABOR/APGAR SCORES/UPRIGHT POSITION

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ผลของการพยาบาลแบบสนับสนุนประคับประคองร่วมกับการจัดทำศีรษะและลำตัวสูงในระยะคลอดต่อความเจ็บปวดในระยะคลอด, ระยะเวลาของการคลอด คะแนนแอฟการ์ของทารกแรกเกิดในผู้คลอดครั้งแรก (THE EFFECTS OF SUPPORTIVE NURSING CARE AND UPRIGHT POSITIONING DURING LABOR ON LABOR PAIN, DURATION OF LABOR AND APGAR SCORES OF NEWBORN IN THE FIRST-TIME MOTHERS)

ภณิดา กำแหง 4237995 NSMC/M

พย.ม. (การพยาบาลแม่และเด็ก)

คณะกรรมการควบคุมวิทยานิพนธ์ : นิตยา สีนสุกใส, Ph.D., สุปราณี อัทธเสรี, ค.ม., ชติมา จำปรัตน์ วท.ม. (พยาบาลศาสตร์)

บทคัดย่อ

การวิจัยทดลองนี้มีวัตถุประสงค์เพื่อศึกษาผลของการพยาบาลแบบสนับสนุนประคับประคองร่วมกับการจัดทำศีรษะและลำตัวสูงในระยะคลอดต่อความเจ็บปวด ระยะเวลาของการคลอด คะแนนแอฟการ์ นาทที่ 1 และ 5 ของทารกแรกเกิด ในผู้คลอดครั้งแรก โดยการใช้กรอบแนวคิดการพยาบาลแบบสนับสนุนประคับประคองมารดาในระยะคลอดของฮอดเน็ตต์ (Hodnett) การเลือกกลุ่มตัวอย่างเป็นแบบเฉพาะเจาะจง คือ หญิงตั้งครรภ์ที่มาคลอดในโรงพยาบาลมุกดาหาร จังหวัดมุกดาหาร จำนวน 60 ราย แบ่งเป็น 2 กลุ่มคือกลุ่มทดลองและกลุ่มควบคุม กลุ่มทดลองเป็นผู้คลอดที่ได้รับการพยาบาลแบบสนับสนุนประคับประคองร่วมกับการจัดทำศีรษะและลำตัวสูงในระยะคลอด กลุ่มควบคุมเป็นผู้คลอดที่ได้รับการดูแลโดยปกติในห้องคลอด โรงพยาบาลมุกดาหาร เก็บข้อมูลโดยใช้แบบสอบถามข้อมูลส่วนบุคคล แบบบันทึกข้อมูลเกี่ยวกับการคลอด แบบวัดความเจ็บปวด (Visual Analogue Scale) นำข้อมูลส่วนบุคคลของกลุ่มตัวอย่างมาทดสอบความแตกต่างด้วยการทดสอบไคสแควร์ (χ^2 test) เปรียบเทียบความแตกต่างของคะแนนความเจ็บปวด ระยะเวลาของการคลอด และคะแนนแอฟการ์นาทที่ 1 และ 5 ของทารกแรกเกิด ในผู้คลอดครั้งแรกด้วยการทดสอบค่าที (independent t-test)

ผลการวิจัยพบว่า 1. ค่าเฉลี่ยคะแนนความเจ็บปวดในกลุ่มผู้คลอดที่ได้รับการพยาบาลแบบสนับสนุนประคับประคองร่วมกับการจัดทำศีรษะและลำตัวสูงในระยะคลอดต่ำกว่ากลุ่มผู้คลอดที่ได้รับการพยาบาลตามปกติ อย่างมีนัยสำคัญทางสถิติ ($p < .05$) 2. ค่าเฉลี่ยของระยะเวลาในการคลอดระหว่างกลุ่มผู้คลอดที่ได้รับการพยาบาลแบบสนับสนุนประคับประคองร่วมกับการจัดทำศีรษะและลำตัวสูงในระยะคลอดสั้นกว่าระยะเวลาของการคลอดในกลุ่มผู้คลอดที่ได้รับการพยาบาลตามปกติอย่างไม่มีนัยสำคัญทางสถิติ ($p > .05$) และ 3. คะแนนแอฟการ์ของทารกแรกเกิดในนาทที่ 1 และนาทที่ 5 ในกลุ่มผู้คลอดที่ได้รับการดูแลแบบสนับสนุนประคับประคองร่วมกับการจัดทำศีรษะและลำตัวสูงในระยะคลอดมีคะแนนสูงกว่าในกลุ่มผู้คลอดที่ได้รับการดูแลตามปกติ อย่างไม่มีนัยสำคัญทางสถิติ ($p > .05$)

จากผลการวิจัย มีข้อเสนอแนะว่าแผนการพยาบาลแบบสนับสนุนประคับประคองร่วมกับการจัดทำศีรษะและลำตัวสูงในระยะคลอดสามารถนำมาเป็นแนวทางในการดูแลผู้คลอดในระยะคลอดเพื่อลดการรับรู้ความเจ็บปวดจากการคลอดได้ดี

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CHAPTER 1

INTRODUCTION

Background and Significance of the Study

Labor is natural processes that fetus, placenta, and membranes are expelled out of the uterus (Pellitteri, 1992; Cunningham, et al., 1997, Burroughs & Leifer, 2000). These processes lead to physical and emotional changes and bring about uncomfortable feeling and labor pain. What causes labor pain is not clearly known. The most popular hypothesis is the stimulation from prostaglandin. Prostaglandin causes uterine contraction, cervical softening, effacement, dilation and descending of the presenting part. This changing puts pressure on the passage and nearby organs such as vagina, urethra and bladder (Moore, 1983; Olds, London & Ladewige, 1980). Moreover, it induces labor pain, which causes stress to every laboring woman especially the first - time laboring women who have no direct experience of labor. When approaching active phase, it increases fear and stress from severe pain. In addition, these women are fearful that the fetus and themselves may be in danger. They may also feel uncomfortable of strange environment in labor and delivery room. The effects of fear, stress and anxiety can increase pain level and duration of labor (Dick- Read, 1984).

Fear of labor pain stimulates sympathetic nervous system and causes releasing of cathecholamine. This leads to arterial vasoconstriction. This mechanism decreases transferring of oxygen and nutrients to the uterus, and increases tension and pain due to ischemic myometrium during uterine contraction (Dick-Read, 1984). Tension of smooth muscle of lower uterine segment and cervix resists to uterine contraction, therefore, the labor process is slow down (Reeder, Martin & Koniak, 1987). The laboring women's fear, tension and pain are increased. This is a continuous cycle called fear – tension – pain syndrome. In addition, this syndrome decreases uterine blood circulation and oxygen while increases metabolism during labor that may cause birth asphyxia.

At Labor and Delivery Unit in Mukdaharn Hospital, normal care is defined as nursing activities provided by nurses to help laboring women get through labor and delivery process safely. The women's relatives are not allowed to be in the Labor and Delivery unit. The laboring women are asked to lie on their sides, particularly on the left side to let blood circulation free. Nurses are health personnels who take care closely to the laboring women and have direct role to help them release fear, anxiety, tension, and pain during labor. When fear and anxiety are decreased, tension and pain can be reduced. The uterine contractions are expected to be normal and labor should not be prolonged. The laboring women who can cope well with labor pain have low rate of cesarean section and use less sedative drug, resulting in good outcomes. Nurses can help laboring women by giving knowledge and information about labor, emotional support, and physical comfort. Moreover, upright positioning can be used to accelerate progress of labor which, in turn, shortens period of labor pain.

Providing knowledge and information about labor can help the laboring women understand the situation and cooperate with health personnels. When the women understand the situation and are familiar with personnels, they feel relax and understand what is going to happen. Then, fear and anxiety decrease (Jacox, 1979). Besides, they are ready to cooperate with health personnels.

Teaching or coaching breathing techniques to laboring women is useful because it can distract the women's attention from pain during uterine contraction and inhibit impulse from brain stem while sensory input exceeds pain impulse. According to gate control theory, breathing techniques can decrease pain sensation. Besides, teaching pushing technique can help reassure the laboring women how to act in the second stage of labor. Pushing before full dilatation of cervix causes cervical edema and obstruction of fetal descending. The correct pushing helps laboring women decrease exhaustion and helps shorten duration of second stage. It also helps the women cope well with labor pain.

Emotional support is defined as nursing activities in helping women to increase self-esteem through making relationship, encouragement, and companionship. Roger and Barret - Lannard (Affonso, 1979) stated that emotional support during labor begins by making relationship. Nurses can initiate relationship by paying attention on laboring women's behavior, active helping, and paying respect. Moreover,

nurses' manner should be warm, empathic, and kind. Nurses' concern can be illustrated by words and activities that convey to the laboring women good feeling on themselves. Then, they try to cooperate, endure labor pain, and follow treatment plan. Caring behavior enhances maximum potential of the person. It is the most important factor in stress event.

Touch can be used to assure the laboring women. It makes people feel warm. Touch at hand, arm or shoulder when a laboring woman feels pain or pushing gives more comfort and better coping to pain (McKenna, 1993). Boasaung and Roungraungsri (1994) found that touching during labor helps laboring women feel comfort and respond well to pain. Companionship can help people feel that they are not alone and other people understand their feeling. McCaffery, Beebe, Latham, J. and Ball (1994) suggested that pain could be relieved by being with the patient. Consistently, Myles (1989) suggested that nurse's presence in labor can decrease the laboring women's fear and pain. Correspondingly, Hodnett and Osborn (1989) found that laboring women who received supportive nursing care continuously used small amount of sedative drug. Shields (1978) found that presence of nurses was the most important thing which had positive correlation with patient's satisfaction.

Physical comfort is routine care that the women normally do for themselves in their daily life such as brushing teeth, perineal care, mouth care, elimination, and taking bath to make them clean and comfortable during labor and delivery. The women cannot do by themselves at this time, particularly when the intensity of labor pain increases. Nurses help the women to take enough food and water in order to have sufficient energy to use during labor period. Laboring women should be encouraged to empty bladder occasionally because full bladder can interfere uterine function and tension of bladder muscle can increase pain. A restful environment can make laboring women feel calm and focus. Nurses should combine a few nursing activities in one time to lessen frequency of disturbing period that may help them feel relax. Decreasing stressors to laboring women can reduce fear, tension, and pain. Supportive nursing care helps to promote progress of labor and health of the fetus. If duration of labor is shortened, the women can tolerate the pain and there is no need to receive sedative drug which may suppress neonate's respiratory function. The newborns whose mothers have not received sedative drug have good Apgar scores.

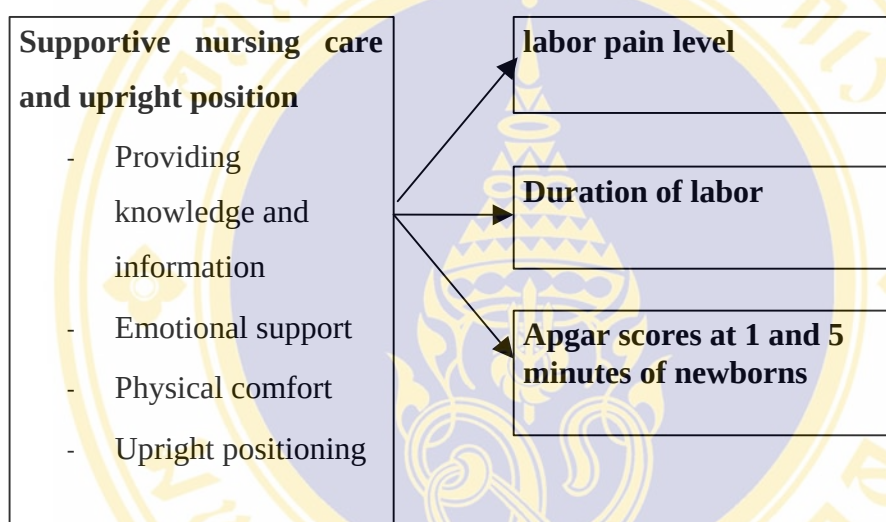
Upright positioning is defined as posture of laboring women that incline to vertical direction such as standing, walking, sitting, 60-degree semi-sitting, and squatting. When laboring women maintain upright position, the longitudinal axis of birth canal is close to vertical line as well. Therefore, direction of birth canal can be helpful because infant weight plus gravity should enhance progress of labor, direct descending line, and increase pelvic dimension (Gold & Russel as cited in Pavlik, 1988). Upright position leads to decrease resistance between fetus on the passage of labor. When uterus falls downward, the pressure of uterus is not on back and sacrum. Then, it leads to decrease back pain (Melzack, Belanger & Lacroix, 1991). Upright position helps avoiding supine hypotension and brings about regular blood circulation (Shermer & Raines, 1997). Laboring women will not have syncope. In addition, gravity can promote descending of the fetus. When presenting part of the fetus compresses on the cervix, upon Ferguson's reflex, it stimulates releasing of oxytocin. This hormone enhances uterine functioning that can be seen as regular uterine contraction and ripening of cervix (Caldeyro-Barcia, et al., 1960). The parturients who stay in upright position have shorter duration of first stage of labor than those who stay in lying position (Flynn, Kelly, Hollins & Lynch, 1978; Diaz, Schwarcz, Fescina & Caldeyro-Barcia, 1980; Read, Miller & Paul, 1981; Mendez-Bauer, 1975; Pavlik, 1988; Golay, Vedam, & Sorger, 1993; Shermer & Raines, 1997). However, a study found that duration of first stage of labor between parturients who stayed in upright position and in lying position were not different (Bloom, et al. cited in Goer, 1999).

In second stage, position of semi-sitting more than 45 degree can promote bearing down effort (Mengert & Murphy, 1933) and shorten duration of labor. Consistently, Bonica (1967) found that semi-sitting increased pressure in abdomen more than lying down. However, Cottrell and Shannahan (1987) found that laboring women with lying position had shorter duration of second stage of labor than those who stayed in sitting position. Some study found that laboring women who stayed in 45-90 degrees upright position had higher Apgar scores than those who were in lying position, but some studies found that Apgar scores in both groups were not different. (Humphrey, Hounslow & Wood, 1973; Mitre, 1974; Andrews & Chrzanowski, 1990).

Previous studies found that supportive nursing care and upright positioning of laboring women help them feel more comfortable, lessen labor pain, shorten duration

of labor and decrease the need of labor augmentation. These women can give birth safely. This makes them satisfy with child birth experience (Athaseri & Serisathien, 1988). Thus the researcher would like to study the effects of supportive nursing care and upright positioning during labor on level of labor pain, duration of labor and Apgar scores of newborns at 1 and 5 minutes. The results of the study can be used to guide nursing practice in labor and delivery unit.

Conceptual Framework



Purposes of the Study

1. To compare labor pain level of laboring women who receive supportive nursing care and upright positioning and those who receive routine nursing care.
2. To compare duration of active phase and second stage of labor in laboring women who receive supportive nursing care and upright positioning and those who receive routine nursing care.
3. To compare Apgar scores at 1 and 5 minutes of newborns whose mothers receive supportive nursing care and upright positioning and those whose mothers receive routine nursing care.

Hypothesis

1. The laboring women who receive supportive nursing care and upright positioning have a lower labor pain level than those who receive routine nursing care.
2. The laboring women who receive supportive nursing care and upright positioning have a shorter active phase and a shorter second stage of labor than those who receive routine nursing care.
3. The newborns whose mothers receive supportive nursing care and upright positioning have higher Apgar scores at 1 and 5 minutes than those whose mothers receive routine nursing care.

Scope of the Study

This research compares labor pain level, duration of labor and Apgar scores at 1 and 5 minutes of newborns between laboring women who receive supportive nursing care and upright positioning during labor and those who receive routine nursing care. The sample was pregnant women who came to give birth at Mukdaharn Hospital.

Expected Outcomes and Benefits

1. In nursing practices, nurses in Labor and Delivery unit can apply the results of this study to help pregnant women in labor to decrease level of labor pain, shorten duration of labor and have neonates with good Apgar scores.
2. In nursing study, the study results can be used to teach and guide nursing students how to care for pregnant women in labor to obtain good outcomes.
3. In research, this study may provide guidelines to other further research.

Definitions of Terms.

Supportive nursing care and upright positioning were composed of two activities: supportive nursing care and upright positioning.

1. Supportive nursing care was defined as the activities provided to laboring women including providing knowledge and information, emotional support and physical comfort.

1.1 Providing knowledge and information was defined as giving facts about causes of labor pain, processes of labor, results of all kinds of examination and instruction used to relieve pain such as breathing and pushing techniques.

1.2 Emotional support was defined as nursing activities provided to the pregnant women in labor to increase their self-esteem through making relationship, reassurance, assistance, companionship and praise. Making relationship was initiated by the researcher with friendly manner. The researcher introduced herself, asked about the women's condition and feelings, listened to what they said, told them that she would be here to help and being their company, praised the women when they try to overcome the pain by changing position or using breathing technique.

1.3 Physical comfort was defined as personal hygiene care including partial bed bath, mouth care, perineal care, bladder care, food and drink, and elimination. Managing environment to facilitate resting such as light, low noises, doing a few nursing activities at once to avoid annoying them.

2. Upright positioning was defined as postures of laboring women that were nearly vertical such as standing, walking, 60-degree semi-sitting (leaning backward or forward), and squatting. The pregnant women were asked to use at least 2 positions in an hour during first stage and use semi sit 60-degree (backward or forward) in the second stage of labor.

3. Routine nursing care was defined as nursing activities provided by staff nurses as usual for the laboring women who come to give birth at Mukdaharn Hospital.

4. Duration of labor was defined as period of time in minutes divided into two periods :

4.1 Active phase in first stage of labor beginning at about 2-3 centimeters in diameter of cervical dilatation, 80-100% effacement, interval of contraction less than 5 minutes to full cervical dilatation.

4.2 Second stage of labor beginning at full dilatation until delivery of the newborns.

5. Labor pain was defined as uncomfortable feeling caused by uterine contraction. It was measured using Visual Analogue Scale.

6. Apgar Scores was defined as summation of score deriving from health status of the newborns at birth in five areas including, Appearance, Pulse, Grimace, Activity, and Respiration. Each item was scored 0-2. Sum of score can be 0-10. High score indicated healthy status, low score indicated unhealthy status. It was evaluated at 1 and 5 minutes after birth.



CHAPTER 2

LITERATURE REVIEW

This research aimed to determine the results of supportive nursing care and upright positioning during labor to labor pain, duration of labor and Apgar scores of newborn at 1 and 5 minutes in the first-time mothers. The researcher reviewed literature from textbooks, articles, documents, and theses concerning general knowledge about labor, supportive nursing care and upright positioning during labor.

General knowledge about labor

General knowledge about labor is composed of meaning of labor, stages of labor, cause and mechanism of labor pain, reaction and response to labor pain, and factors influencing labor pain, which consists of details as follows.

Meaning of labor

Labor is natural processes of moving the fetus, placenta, membranes and amniotic fluid out of the uterus (Olds, London., & Ladewige, 1984; Dickason, Silverman & Schult, 1994). Labor consists of 3 stages: (1) the first stage or cervical preparation and dilatation, (2) the second stage or the expulsion of the fetus, and (3) the third stage or the expulsion of the placenta.

Stages of labor

1. The first stage or cervical preparation and dilatation stage begins with the onset of regular contraction (cervical changes have already begun) and is complete when the cervix is fully dilated. At the beginning, the contractions are not severe and occur every 5-10 minutes, then turn more frequent to every 2-3 minutes. Duration of a contraction lasts about 30 seconds at the beginning and longer up to 70 seconds at the end of first stage and during the second stage. The first stage takes 6-14 hours, approximately 8 hours in primiparas, and 3-10 hours, approximately 5 hours in

multiparas (Sherwen, Weingarten & Scoloveno, 1995). The first stage of labor has been divided into two phases: latent and active phases.

1.1. The latent phase begins at the onset of uterine contraction or the beginning of cervical dilatation to 3 centimeters dilatation of cervix. In first-time pregnancy, it takes an average of 6.4 hours, usually it should not take more than 20 hours. In multiparous pregnancy, it takes an average of 4.8 hours normally, not more than 14 hours.

1.2 The active phase is the period between 3-10 centimeters of cervical dilatation. Normally, cervix is dilated approximately 3.0 centimeters/hour in primigravida. The rate of dilatation should not be less than 1.5 centimeter/hour. This stage is subdivided into three phases, acceleration phase (3-5 centimeters), the phase of maximum slope (approximately 5-8 centimeters) and deceleration phase (8-10 centimeters).

In the first stage of labor, contraction originates at the top of the uterus and spreads throughout the uterus in about 15 seconds. Fiber of uterine muscle is shortened and thickened after each contraction resulting in a progressive decrease of the uterine cavity. The shortened and thickened uterine muscle forces the fetus to move downward and causes effacement and dilatation. When the presenting part moves down, it exerts pressure on the organs nearby such as ligaments, urethra, bladder, and intestine. Ligaments are retracted and, in turn, stimulate sensory nerve (Olds, London, and Ladewige (1984). Impulse of pain is sent through uterine plexus to hypogastric plexus. It transfers pain to sympathetic nerve fiber via T10, T11, T12 and L1 ventral rami, and transmits it to cortex cerebri where sensory nerve receives and interprets pains. Pains in this stage are pains on lower back, lumbar area and lower portion of the abdomen.

2. The second stage or expulsion of the fetus lasts from the time of full dilatation through birth of the fetus. In this stage, the parturient may feel like exerting stool. When uterus is contracted, laboring women is making strong “bearing down efforts”. This stage takes an average of 1 hour normally, not more than 2 hours in first-time mothers. It takes approximately 30 minutes and should not take more than 1 hour in multiparas (Sherwen, Weingarten & Scoloveno, 1995). Pain in the second stage of

labor originates due to ischemic myometrium caused by severe uterine contractions, stretching of lower uterine segment, outlet and perineum caused by presenting part. These pain-sensitive structures are predominantly supplied by the pudendal nerves (Bonica & Chadwick, 1980). During the second stage, the pain is sharp and localized around vagina and perineum (Bobak, Lowdermilk, & Jensen, 1995; Sherwen, et al., 1995; Bonica & Chadwick, 1989).

3. The third stage of labor or the expulsion of the placenta is the period between the birth of the fetus through the delivery of the placenta. Usually, it takes about 5 to 30 minutes (Pritchard & McDonald, 1985; Sherwen, Weingarten & Scoloveno, 1995). Pain in the third stage of labor results from contractions of the uterus and stretching of perineal tissues to let the placenta pass through. Pain transmission in this stage is similar to that in the first stage, but severity is less (Olds, London, & Ladewige, 1984). The whole three stages of normal labor should be complete within 24 hours (Ziegel & Cranley, 1984).

Causes and mechanism of labor pain

Pain is defined as “An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage” (Bowsher, 1978). Labor pain is an experience of discomfort caused by uterine contractions and tearing of tissues that really happens or seems to. Levels of pain are affected by both physical and psychological components.

1. Physical component: Labor pain is stimulated by stretching of cervical tissue which transmits to sensory nerve and be interpreted as discomfort while uterine muscle is contracted. Labor pain has rhythmic characteristic or frequency. The frequency of labor pain depends on contraction and relaxation of the uterus and pain stops after delivery (Melzack, Belanger, & Lacroix, 1991).

2. Psychological component: Anxiety and fear cause tension and pain, then occur continuously as fear-tension-pain cycle (Dick-Read, 1984). When fear and tension during labor rise, cortisol level, adrenalin and catecholamine in plasma also increase. These chemical changes irritate myometrium and make it less active. This condition decreases bearing-down effort. It causes prolonged labor and causes the parturient to lose much energy. This situation induces metabolic acidosis and

respiratory alkalosis that may be harmful to the fetus and may lead to operative delivery (Clark, Affonso & Harris, 1979). The parturient who has prolonged labor has less tolerance. Besides, it was found that the parturient who received medical induction of labor reported that they had more pain than those who had natural delivery. This made it more complicated in facing pain (Gorrie, McKinney, & Murray, 1999). There are many theories that explain the mechanism of pain, such as gate control theory and endogenous pain control theory.

- **Gate control theory.** Melzack and Wall presented this theory in 1965 (Melzack & Wall, 1973), which explains phenomenon concerning mental, cultural, and physical components, which induces pain or changes perception of pain. Nerve impulse leads and performs signal adjustment by spinal gating mechanism in the region of the dorsal horns of the cord (Bond, 1984; Puntillo, 1993). The gate control theory proposed that central nervous system (spinal cord and brain) could be reached through a gate. Pain can enters through the gate from outside. However, the gate could be closed by two ways: pulling to from the outside and pushing to from the inside. Pulling to from the outside can close the gate by activating large cutaneous nerve fibers which inhibit some of the pain impulses from entering the spinal cord. Pushing the gate to from the inside can close the gate by messages descending from the brain. Thus stimulation the brain by distraction or relaxation can help to relieve pain.

- **Endogenous pain control theory.** In 1975, it was discovered that narcotic-like substances occur naturally within the body. These substances have been called endorphin. The term endorphin is a combination of “endogenous” and “morphine,” meaning morphine within. Endorphin is released from the brain and attached into the narcotic receptors at the synapse of nerve cells in the brain and spinal cord to block the transmission of a pain signal, preventing the impulse from reaching consciousness. Endorphin levels differ in different individuals. This can explain why some person feels more pain than others (McCaffery, Beebe, Latham, & Ball, 1994; Reeder, Martin & Koniak, 1997). Levels of endorphin may be different due to heredity or social and cultural way to express pain. Levels of endorphin change according to situation during pregnancy and labor (Reeder et al, 1997).

There are many factors that can raise or reduce pain perception, toleration and pain expression. The influential factor on labor pain may be divided into four main factors: physical, mental, social and cultural, and environment factors.

1. Physical factors influence labor pain through delivery operation, and energy reserve.

1.1 Delivery operation

A. Severity and period of uterine contraction. If the uterus contracts very hard and takes more time in contraction, the parturient will experience more pain (Lowe, 1987).

B. Dilatation level and the rate of cervical dilatation: Bonnel and Boureau (1985) studied 100 primiparas and tested pain level during cervical dilation in the periods: 3 centimeters, 5-7 centimeters and 7-10 centimeters; it was found that when cervix dilated, the parturient felt more pain. This congruents with Melzack (1984) who stated that cervical dilatation can tell severity of pain. For the rate of cervical dilatation, a study found that a parturient who had medical induction of labor or artificial rupture of membranes had higher pain perception than those experiencing natural delivery (Thomas, Fletcher, & Hill, 1982)..

C. Tissue strength. The muscular layers involved in labor which have been prepared by regular exercises can support labor process to pass over well, without prolonged labor, and with low pain perception (Santangeli, 1984).

D. Dystocia or abnormal labor caused by contracted pelvis, abnormal development of fetus, or abnormality of power (Bonica, 1983; Melzack, Belanger, & Lacroix, 1991).

E. Different personal factors of the parturient affect labor process. A study has found that age and numbers of labor have negative relation to labor pain (Melzack, 1984; Lowe, 1989). Besides, it includes condition of cervix during labor, relation between size of fetus and birth passage and general conditions of the parturient, such as: complications of labor, toxemia of pregnancy, pregnancy induced hypertension and diabetes. These result in higher pain perception (Santangeli, 1984).

1.2 Energy reserve. Exhaustion may be caused by over reaction to stimuli or prolonged labor pain, receiving less nutrient and fluid, having not enough rest and lack of reserve energy. It makes the parturient have less pain tolerance.

2. Mental factors influence labor pain no less than physical factors. Characteristic of mental factors can give both positive and negative results to labor pain. Characters of mental factor, which influence labor pain are:

2.1 Fear, anxiety, and strain. Most of pregnant women have fear and anxiety throughout pregnancy and increasing near delivery. A study shows that fear and anxiety magnify labor pain (Lowe, 1989).

2.2 Positive and negative attitude to delivery can decrease or increase pain. From the study of Nettlebladt and colleagues it was found that mothers who have negative attitude to labor perceive more pain than those with positive attitude.

2.3 Previous pain experience may influence women's response to pain. The study of Niven and Gijsbers (Niven and Gijsbers cited in Lowe, 1991) discovered that the parturient who has menstrual pain, headache, and migraine will know the way to relieve labor pain.

2.4 Personality. Personality influences pain perception. It is found that the parturients who are extrovert can tolerate more pain than those with introvert personality. The parturients who are easily anxious likely to tolerate less pain.

2.5 Adjustment of individuals is different. Because person's ability to adjust oneself to pain is unequal, each parturient has different perception and expression of pain (Roy, 1984).

3. Social and cultural factors affect pain interpretation of the parturient during labor. It may increase or decrease pain due to cultural background, tradition, religious belief, social and family environment, educational level and career, with such details as:

3.1 Cultural background, custom and tradition, affect pain expression of the parturient. It differs according to each culture or each person's society (Olds, London, & Ladewige, 1984).

3.2 Religious belief results in different reaction to labor pain. For example, Mediterranean women are taught to scream loudly during delivery to drive away evil spirits that may harm the infant (Abouleish, 1979).

3.3 Social and family environment: Social psychologist found that women from a nuclear family or an extended family are different in their adjustment to be a mother. The laboring women in nuclear families may be strained due to lack of support or advice about how to conduct during pregnancy and delivery. It is different from extended families which consist of grand-fathers, grand-mothers and relatives. The family and social expectation lead to women's adjustment to pregnancy.

3.4 Educational level and occupation affect toleration to pain. The parturients who have high education and non-labor work are more sensitive to pain. On the contrary, the parturients who are low educated, earn a living on farm or being laborers are slow to pain and endure more pain (Bankaeng, 1999). However, it was found that good educational level and good economy have positive relation to pain. Fridh, Kopare, Gaston-Johansson, and Norvell, (1988) found that education has no relation to labor pain.

4. Environmental factors are found to have an effect on pain perception. Good environmental support may help the parturient to gain better adjustment and tolerate stimuli better than bad environment. It is found that environment which promotes the adjustment and helps the parturient to tolerate more pain includes the women's satisfaction to delivery experience (Santangeli, 1984) which consists of physical environment and psychosocial environment.

4.1 Physical environment includes clean body and place, calmness, homely atmosphere such as proper light and suitable temperature with good ventilation and appetizing food.

4.2 Psychosocial environment includes good human relation, friendliness between parturient and health team which brings warm-hearted. The parturients can control themselves and being confident that they and their babies will overcome the labor safely.

It could be seen that labor pain is an important problem. It continuously affects uterine function and can lead to prolonged labor. It disturbs uterine blood circulation. The newborn may become anoxia. Therefore, nurse-midwife can help the parturient pass through delivery with low level of labor pain, and with short period of delivery. The newborns will also be good health. Reduction of fear, anxiety and physical tension can be achieved physically and mentally by supportive nursing care.

Supportive nursing care

Labor support is considered as an important function of nurses in Labor and Delivery Unit. This support was found to help women overcome their difficulty during labor through offering knowledge and information, emotional support, physical comfort, and advocacy (Hodnett, 1996; Gagnon & Waghorn, 1996).

1. Knowledge and Information provided to laboring women help them realize what is going to happen. But some information should not be given while the uterus is contracting severely except encouraging words and praises. Keep unnecessary talking to a minimum until the delivery is over. Nurses should give information about progress of labor and well-being of the fetus, advising about respiration technique helps laboring women distract from pain. Teaching effective pushing helps the mother get the right understanding of situation she will face and may reduce fear and anxiety. It breaks cycle of fear-tension-pain which resulting in pain relief. Giving information and advice in various topics can divert attention. It can alleviate nerve impulse from the cerebral cortex and the thalamus. Stimulation of the cortex and thalamus to perform process of thought and change of emotion will decrease perception of pain signal by closing the gate. Thinking process which aims at slow breathing relates directly to function. It sends signal resulting in closing down the gate or nearly closing it. There will be no pain or less pain (Reeder, Martin, & Koniak, 1997). Providing information and instruction gives stimulation to sensory input such as visual or auditory input in a sufficient amount. The reticular will project inhibitory signals to the gate at spinal cord. The gate is closed to stimuli including pain. Hence pain signals would not reach the level of cortical awareness (Reeder et al, 1997).

Giving general information about labor helps laboring women anticipate what is going to happen and prepare themselves to encounter it. Explaining how labor pain occurs, advising how to conduct during labor, and telling the processes of labor and the results of examination will enable the laboring women to tolerate better to labor pain (Olds, London, & Ladewige, 1988). Accurate information according to the parturient needs can decrease anxiety and fear in delivery which can relieve pain.

Breathing techniques are used to distract laboring women from labor pain. Pain due to uterine contraction can be inhibited from reaching the brain cortex by focusing on the breathing (Reeder, Martin & Koniak, 1997). Generally, breathing techniques should be taught in prenatal classes. However, if the women do not attend prenatal class, they can be taught in early stage of labor (Simpson & Creehan, 1996). Breathing techniques can alleviate anxiety and fear resulting in decreasing pain, then the laboring women can tolerate pain better and have good attitude toward delivery. There are four breathing methods used to distract from labor pain including slow-deep chest breathing, shallow accelerated-decelerated breathing, shallow breathing with force blowing out, and expulsion breathing (Burroughs & Leifer, 2000, Pillitteri, 2003).

- Slow-deep chest breathing starts with inhaling slowly and deeply through the nose and exhaling slowly through a little open mouth while uterine muscle contracts. It should take 6-9 breaths per minute. The laboring women use this technique for the contraction when cervix dilates between 2 and 3 centimeters in diameter.

- Shallow accelerated-decelerated breathing begins with slow-deep chest breath once, follows by inhaling with lightly, rapidly, regularly breath and exhaling through the open relaxed mouth while the contraction is strong. When the contractions subside, the laboring women slow down their breathing and end it with slow-deep chest breath (cleansing breath). Shallow accelerated-decelerated breath is good for contraction when cervical dilatation is between 4 and 6 centimeters. The respiration rate is up to 40 per minute.

- Shallow breathing with force blowing out or pant-blow breathing begins by taking cleansing breath. Then, light, shallow, rapid breaths are taken three or four quick breaths, then a forceful exhalation by blowing out the air at once like blowing out candle, then return to light, shallow, rapid breathing and blowing out continuously during uterine contraction. When the contractions subside, the laboring women use slow-deep chest breathing to end the contraction.

- Expulsion breathing or pushing is good for contraction during the second stage of labor. Laboring women start by taking a cleansing breath, then inhaling slowly and deeply through the nose and hold on with counting 1-6 while pushing, then exhale slowly through the mouth. Do the same until the contraction is gone, end the contraction with a cleansing breath. When the presenting part is in crown position, the laboring women have to stop pushing, while they inhale and exhale quickly through the open mouth until the fetus is delivered.

Teaching effective pushing techniques help the parturient feel confident in their conduct. Laboring women should take a cleansing breath before pushing, then breath slowly and deeply through the nose, hold it and count 1-6 while pushing by bending their bodies, bow the head until chin touch the chest while push down through the vagina, then exhale slowly. Do the same until the contraction is gone, end the contraction with a cleansing breath. During one contraction, the women can push three to four times. The women should avoid pushing before full dilatation because it can result in a swollen cervix which can obstruct the descending of the presenting part. Effective pushing can shorten the second stage of labor and prevent the parturient from being exhausted. In the resting period, the women relax all their muscles in 60-degree semi-sitting, and breathe normally.

2. Emotional support means giving mental comfort to increase the mother's self-esteem by creating relationship, providing encouragement, and companionship.

Creating relationship means interaction between the women and nurses that can produce acquaincy, familiarity, trust and confidence (Roger & Barret-Lannard cited in Clark, Affonso & Harris, 1979). Clark, Affonso, and Harris stated that mental supportive nursing care during labor could be developed by paying attention to the laboring women's behavior, being ready and willing to help, and

respecting their dignity. The parturient will trust nurses who are willing to care for them without judgement. She will feel free to speak. Nurses may show their understanding through verbal and non-verbal praising that make the parturient perceive nurses' sympathy. The laboring women should be given a chance to release their feeling. While talking with them, nurses should ask open-ended questions which can draw more information.

Providing encouragement means a reaction, which gives the recipient inspire with courage and hope by praising or touching (Brown & Bennett, 1989). Encouragement is a powerful tool to push on laboring women potential energy, which is very important during stress. It is the mental support to get strength to carry on keeping mental balance to confront critical situation and pass it on contentedly. Encouraging words should be given since the onset of labor until delivery. The parturients need positive feedback from time to time when they have done something right to cope with pain. It keeps them hope to solve the problem by their successful experience. Vaterlaus (1979) found that encouraging women in labor helped them tolerate well with uncomfortable situation, lessen fear, and release anxiety. Principles of providing encouragement are as follow:

- Encouragement should be provided when the parturient is ready to receive. It should not be given too frequently.
- It must be true, unless the parturient will lose her faith and trust in nurses.
- Expectation must not be set up too high.
- Nurses must understand the parturients. If they think that their situation is serious, but nurses say it is not so, the parturient may think that nurses do not understand their situation.
- It must be given at the right time when the parturient is in need. Encouragement to add energy must be done immediately after the action is ended.

Touching is an encouragement nurse's behavior that shows sympathy and understanding by making contact with the women's hand and shoulder softly during

labor pain or pushing stage. This will help them feel comfortable. Touching to each part of the body give different feelings. McKenna (1993) found that touching areas that provide comfort most are arms and shoulders. McCorkle (1974) found that the patients who are touched softly around the wrist have statically significantly more positive response both by behaviors and words than those who are not touched. Touching is one of care taking behavior (Wolf, 1986). Touching stimulate receptor under skin through large fibers. It can cause T-cell operation, refraining pain impulse to brain resulting in pain relief. Nurses are health personnels who touch patient more than others. Touching can be done during nursing procedure such as taking pulse and cleaning. Nonprocedural touch can provide more emotional support which makes the laboring women feel safe and comfort. Touching lets the women know that nurses are near and will not let them face any problems alone. Nurses are ready to help. McKenna (1993), Henningson (1972) and Baosuang (1983) found that touching during labor increase comfort and help the parturient be better responsive to pain.

Companionship is a behavior shown to let the laboring women know that nurses are paying attention to their happiness or misery. McCaffery (1979) suggested method of pain relief by companionship. In case it cannot be all the time, nurses should tell the parturient when they will be back. Presence of nurses, even doing nothing, makes the laboring women feel less pain. Myles (1989) suggested that nurses should accompany the parturient during labor pain to lessen fear which results in decreasing of pain. Hodnett and Osborn (1989) found that women who receive continuous nursing support and companionship were less likely to use analgesic drug. Shields (1978) found that companionship of nurses is the most important behavior to laboring women's positive relation and satisfaction.

3. Physical comfort is provided to laboring women by assisting with daily living care, food and water, clothes, environment, and responding to their other needs. Assisting with daily living care includes taking care of general hygiene such as partial bed bath, mouth care, lip care, genital care, and care of urination. Laboring women should be clean and dry. Helping the women to brush their teeth or to rinse their mouths with antiseptic or clean water makes them comfortable. Using glycerin to

protect dry lips, stimulating and helping them to void every two hours can bring them comfort.

Food and water are important to make them fresh and strong throughout the labor and delivery processes. The women can have liquid diet and fruit juice when the contraction is not severe. Bed-sheet is stretched and neat to decrease friction between moist skin and untidy cloth. Laboring women should change their clothes and pads frequently according to the amount of sweat and vaginal discharge. This can make them feel more comfortable than being in the same clothes until delivery. Nurses should dim light, arrange clean and calm environment to make the women focus on all pain-relief techniques. Several nursing service activities should be combined at one time in order to avoid disturbing the women too often. Use the curtain when there is need to uncover their bodies to keep privacy. Besides, nurses should be near enough or visit them frequently so the women feel confident that they are not alone. Finally, offering helps can make the women feel relax and feel that they can rely on nurses.

4. Advocacy means explaining laboring women's desires to other team members and negotiating to keep their interest met. The women's wishes should be responded as needed.

Upright Positioning during labor

Upright position is the posture which vertebra is made an angle with horizontal line or at right angle to the floor. The third lumbar stays higher than the fifth one and they are in vertical line (Naroll, Naroll, & Howard, 1996). Upright position includes standing, walking, sitting, semi-sitting, and squatting. Each position has advantages and disadvantages. For example, standing is beneficial because there is no compression on aorta, vena cava, diaphragm, and abdomen. As there is no hypotension, uteroplacental blood flow will be normal. Upright position helps the presenting part entering pelvic inlet and passing through pelvic canal easily. It decreases uterine contraction and back pain. This position makes it easy to do back massage. Disadvantage of standing for a long period is tiredness and exhaustion, and the position is unsuitable for analgesic administration.

Walking or ambulation is beneficial because there is no compression on aorta, vena cava, diaphragm, and abdomen (Pavlik, 1988; Shermer & Raines, 1997; Simkin, 1995). Uteroplacental blood flow is normal. Generally, uterine contractions are strong and efficient in effacing and dilating the cervix. Descending of the presenting part is promoted because directions of fetal axis, uterine axis and gravity are the same. This position can decrease the pain of uterine contractions. In some instances, walking can convert the position of the fetus to normal such as changing occipito-posterior position to occipito-anterior position. Thus, it shortens the first and second stages of labor in such cases. On the other hand, walking for a long period causes fatigue and causes inconvenience in vaginal examination, in assessing uterine contraction, and in fetal heart rate monitoring.

Sitting is beneficial for the laboring women because the uterus does not press on the diaphragm, abdomen, aorta, and vena cava. It enables the women to breathe easily. Uteroplacental blood flow is normal; therefore the fetus receives enough oxygen. Sitting is a good resting position. It promotes descending of the fetus. Besides, axis of the fetus and uterus are in the same direction with gravity (Simkin, 1995). Uterine contractions are usually strong and efficient for effacement and dilatation of the cervix. It shortens the first and second stages of labor. Drawback of sitting position is that it is unsuitable for giving analgesia, for vaginal examination, and for fetal heart rate monitoring.

Semi-sitting over 45 degrees is beneficial because there is no pressure on aorta and vena cava. So, the laboring women have no hypotension. Utero-placental blood flow is normal, therefore the fetus receives enough oxygen. It is convenience to check fetal heart rate and do vaginal examination. Besides, axis of the fetus and the uterus are in the same direction with gravity (Simkin, 1995; Cottrell & Shannahan, 1987). Uterine contractions are regular, not frequent, but strong and effective resulting in short duration of the first and the second stages of labor. Disadvantage is laboring women's weight on the sacrum and the coccyx which makes the women hardly move. Another disadvantage is that the pelvic outlet cannot be expanded (Fenwick & Simkin, 1987).

Squatting is beneficial for laboring women like other upright position. It increases pelvic outlet about two centimeters and helps changing occipito-posterior to occipito-anterior position. This posture facilitates the uterine contractions to work synchronously with abdominal muscles, resulting in shortening of the first and second stages of labor. However, it is inconvenient to administer analgesics and to monitor fetal heart rate. It is also difficult to remain squatting for a long period.

However, if laboring women are in the same upright position for a long period, they may be tired. Frequent changing of the position can improve circulation, relieve fatigue and pain, and increase comfort. If progress of labor is slow, changing position and movement can often improve it without causing excessive pain.

Upright position and duration of labor

Upright position helps increasing diameter of pelvic outlet about 2 centimeters by movement of the upper sacro-iliac joint. Borell, Fernstrom and Russell (1967) found that pelvic outlet space increases about 28 % in sitting position. Furthermore, it receives force of gravity which is in the line of fetus and this strengthens the force of uterine contractions (Atwood,1976). When the presenting part of the fetus presses on the cervix, it causes Ferguson's reflex releasing the oxytocin which stimulates uterus to contract stronger, longer, with regular duration which is efficient contraction (Lui, 1989; Reeder, Martin & Koniak, 1997; Pellitri, 1995). It can be found that parturient who is sitting, standing (Mendez-Bauer, 1975; Diaz, Schwarcz, Fescina & Caldeyro-Barcia, 1980) and ambulating or walking (Read, Miller, & Paul, 1981; Flynn, Kelly, Hollins, & Lynch, 1978), the duration of the first stage of labor is shortened. But in Stewart and Calder's report (1984), there are no differences suggested for the first and second stages of labor between the parturient in upright position and supine position. There was some limitation of uncontrolled variables which resulted in labor procedure and the sample groups were too small to note the statistical difference between them. Williams, Thom, and Studd (1980) who studied the group of walking and supine parturients found no differences in duration of the first and second stages of labor. They analyzed that control on scheduled walking of the parturients could not be done.

The upright position over 45-degrees in the second stage of labor increases bearing down effort. In this position, the parturients can bow their head until the chin touches the chest and the torso is in C shape. The abdominal muscles work synchronously with uterine muscles and the curvature of spine enhances the force (Mckay, 1984). Bonica (1967) studied the parturients' abdominal pressure while pushing in difference positions and found that while sitting the pressure is 150 mmHg, semi-sitting 135 mmHg, and supine and lateral recumbent 120 mmHg. It can be concluded that in semi-sitting position there is more abdominal pressure than in supine or dorsal recumbent position. Thus it results in shorter duration of labor. According to the study of Suwankum (1986) who made inquiry on 60 parturients, the first group delivered in 45-degrees semi-sitting position and the second group delivered in supine position; it was found that duration of the second stage of labor of the sitting group is shorter than that of supine group. However, it is not congruent with Preuksamethanan's study (1982) which studied the parturients in 40-degree upright position in the first stage of labor in primiparous and multiparous parturients in 200 cases. It was found that there was no difference in duration between the two groups. In accordance with the study of Yusamran (1990) which studied the parturient in 30-degrees semi-setting position and in supine position, 30 cases in each group. It was found that the first, second, third stages and all 3 stages together of the two groups were not different. The reasons given were that the upright position was not high enough. Sabprasert (1998) studied the effects of upright position on duration of the first and second stage of labor in primiparous women who were divided into two groups. Each group was composed of 15 cases. In the first group, the parturients stood, walked, sat or lay in upright position, bent over and used pain relief technique without medication such as abdominal stroking, breathing, and distraction by music. The second group was given ordinary care. The results revealed that duration of labor in both groups were not different.

Upright position and Apgar Scores

Apgar Scoring System is an evaluation of a neonate anoxia level to determine the need for immediate resuscitation. This scoring evaluates a neonate on five

categories including appearance, pulse, grimace, activity, and respiration. Each category is given scores between 0-2. Total score indicates levels of health of the neonate. It is applied at 1 and 5 minutes after birth. Details of scoring are shown as follow:

Sign	0	1	2
Heart rate	absent	below 100	over 100
Respiratory effort	absent	slow, irregular	good, crying
Muscle tone	flaccid	some flexion	active motion
Reflex irritabilities	no response	grimace	vigorous cry
Color	blue, pale	body pink, Extremities blue	completely pink

From: Cunningham F, et al. (1997)

Score from each category is summed up to be Apgar scores. Scores ranging from 7-10 indicate a healthy baby who requires no special treatment. Scores below 7 indicate that the infant requires further attention by the pediatrician. The infant with a score of 4-6 demonstrates depressed respiration. Those with scores under 4 usually have anoxia that requires resuscitation immediately. If the Apgar scores are low at 5 minutes after birth it indicates that the neonate is at risk of morbidity and mortality (Olds, London, & Ladewige, 1984).

Apgar scores of newborns at the first and five minutes of life is related to many factors such as duration of the first stage (Hall, Smith & Smith, 1996; Studd, 1975) and the second stage of labor (Chandra & Thiruparam, 1997; Hall, et al, 1996). Sitting and walking during the first stage of labor can shorten the duration of labor (Flynn, Kelly, Hollins, & Lynch, 1978) and decreases the number of analgesic drug which may results in good condition of the neonate (Andrews & Chrzanowski, 1990). The 60-degree upright position in the second stage of labor can decrease the duration of labor. Therefore, upright position indirectly decreases risk of birth asphyxia through shortening the labor time. Upright position at 60-degree is found to assure safe outcome of the fetus by increasing pelvic outlet (Lui, 1979; Roberts, 1980). Besides,

this position can improve blood circulation because the uterus moves forward such that, there is no pressure on aorta and vena cava. It decreases compression of umbilical cord and improves blood flow to the uteroplacental unit. The fetus receives enough oxygen (Carr, 1980). It is congruent with many studies on the 45-90 degree upright positions (Caldeyro-Baria, 1979; Cottrell & Shannahan, 1985). Some studies found that pO_2 and pH in umbilical artery and vein were higher and pCO_2 is lower in the infants of women who labored in upright position (Golay, Vedam & Sorger, 1993). However, Cottrell and Shanahan (1987) found that mean pO_2 and pH in arterial and venous blood of infants whose mothers were in 45-degree upright position were not different from those in normal position. It was also found that mean one-minute Apgar score of the infants whose mothers were in more than 30-degree was higher than those in dorsal recumbent position. However, Andrews and Chrzanowski (1990) reported that Apgar score on 1 and 5 minutes of the neonates whose mothers were in upright and supine position were not different.

In summary, previous studies have shown conflicting results that supportive nursing care and upright position can reduce labor pain, duration of labor, and increase Apgar score of the neonate. In this thesis, a study has been carried out to determine if these factors improve outcome of labor in Thai rural parturients.

CHAPTER 3

METHODOLOGY

This quasi-experimental research design aimed to determine effects of supportive nursing and upright positioning during labor on labor pain, duration of pain, and Apgar Scores of newborns in the first-time mothers. The research methodology included population and sampling, setting, instrumentation, data collection procedure, protection of the human subject, and data analysis.

Population and Sampling

The population in this study was the first-time mothers who had term pregnancy (gestational age between 37-42 week) and gave birth at Mukdaharn Hospital.

The sample was purposively selected. The inclusion criteria of the sample were as follows:

1. The pregnant women were between 18 – 34 years with height of 150 centimeters or more, and with hematocrit of more than 30%
2. At the beginning of the enrollment, the cervix dilated 2-3 cm.
3. Infants had vertex presentation and estimated fetal weight were between 2500-4000 grams.
4. The pregnant women had no complication during labor and delivery.

The sample was 60 pregnant women, who were divided into two groups: experimental and control by matching some variables such as age, occupation, body weight, and height of the pregnant women and estimated weight of the infants. The details of matching were as follows:

1. The differences of the pregnant women's age were not over 5 years.
2. Occupation was divided into 2 groups:
 - 2.1 The laborer was defined as the occupation that used physical strength in their works such as agriculture, seller, farmer and gardener.

2.2 The non-laborer was defined as the occupation that did not use much of physical strength in their works such as house-wife, government officer, white collar worker.

2.3 The differences of estimated fetal weight were not over 500 grams. The exclusion criteria of the sample were as follows:

1. The laboring women in the experimental group who had spent less time in upright position than in lying position.
2. The laboring women in control group who had spent less time in lying position than in upright position

The control group received routine care by nurses in labor and Delivery Unit and the experimental group received supportive nursing and was asked to be in upright positioning such as walking, standing, sitting, semi-sitting at least 3 positions in an hour and could occasionally be in lying down position if they wanted to.

Setting

The study setting was Labor and Delivery Unit, at Mukdaharn Hospital. Routine care in the setting included partial bed-bath, mouth care, elimination care, perineal care, fetal monitoring, taking vital signs, vaginal examinations to assess labor progression, complete treatment and assisting in delivery.

Instrumentation

Two types of instruments had been used : Instruments for intervention and data collection.

1. Instruments for intervention

1.1 A plan to care for the laboring women. The purpose of this plan was to enhance the first-time mother-to-be to cope well with labor pain by the supportive nursing including (1) emotional support that was provided by making relationship with the parturient, praise, tactile touch and companionship, (2) providing information or instruction about general knowledge of labor, teaching about breathing and pushing technique, (3) Helping with physical comfort and (4) upright positioning.

1.2 Birthing's bed was the bed which can adjust the level of body and lower extremities and had a wedge at sacral area of the laboring women.

1.3 A bean pillow with 60 degrees from horizontal line (for the laboring women to lean on).

1.4 A chair for leaning.

2. The data collection instruments.

2.1 The Personal Data Form used to record the personal characteristics of the laboring women including age, occupation, body weight and height.

2.2 The Labor Record Form used to list information concerning labor and delivery such as

- Duration of labor: first stage and second stage of labor
- Apgar scores of newborns at 1 and 5 minute obtained from the laboring's report.
- Pain assesment tool: the researcher used Visual Analogue Scale or Graphic Rating Scale.

2.3 The Labor Record Form used to list the information concerning labor and delivery such as uterine contraction, cervical dilatation and results of vaginal examination, time of membranes leakage or rupture, characteristics of amniotic fluid, fetal heart rate, vital signs, and duration of labor.

2.4 The Positioning Record Form used to list the information about duration of each position of laboring women.

Validity and Reliability of Instruments

1. Validity: the researcher brought the plan for caring the laboring women by the supportive nursing and upright positioning and all the aforementioned record forms to be considered and test for content validity and language by 5 experts including 2 obstetricians and 3 obstetric nursing teachers. The forms were tested, clarified and then adjusted before use.

2. Reliability: the researcher used the Visual analogue rating scale which is one of the most popular methods of pain measurement. Many researchers have studied validity and reliability of Visual Analogue Scale such as Revil et al.(Revill, Robinson, & Rosen, 1976) who used Visual Analogue Scale on 10 laboring women and found

that the reliability was 0.95, $p = 0.001$; Clark and Spear's who found VAS to have a high reliability and high sensitivity in assessment of well being (Clark & Spear, 1964). Relying on these findings, the researcher used VAS for pain measurement in the present study.

Protection of Human Subjects

The researcher met the sample group, introduced herself and informed about objectives, the method and the benefits of the study. The participation was voluntary, confidential and anonymous. A code number would be used on the questionnaires. The data would be presented in group. The subjects gave their informed consent (see Appendix B). They had the right to withdraw from the study at any time without effect to treatment and nursing care they would receive in any way.

Data Collection

The data collection was conducted by the researcher. The process of data collection was as follows:

1. To obtain permission, the researcher submitted the introduction issued by Faculty of Graduate Studies, Mahidol University, to the Director of Mukdaharn Hospital, Mukdaharn Province.
2. The researcher met the Head of nurses and the Head of Labor and Delivery Unit to explain the purpose of study, sample size, procedure of research and detail of data collection.
3. The researcher selected sample group according to inclusion criteria. The researcher herself collected data between 08.00 a.m.–12.00 p.m. everyday. She finished collecting data from laboring women in control group before starting to collect data of experimental group in order to prevent contamination from treatment.
4. The researcher introduced herself, informed the objectives of the study to the sampling group and asked for participation. The laboring women were allowed to read Right Protection Form carefully and gave consent at their will. The intervention was carried out on the women who gave their consent.

Data collection

Experimental procedure

Experimental group

The laboring women in experimental group received supportive nursing care and upright positioning as follow:

1. After the laboring woman was admitted on 2-3 centimeters cervical dilatation, the researcher introduced herself, forming relationship and trust with the laboring women. She then told her of research procedure generally.

2. The researcher was with the laboring woman throughout labor. Tactile touch at hand and shoulder was performed during uterine contractions. When the researcher could not be with the parturient, she told the woman when she would be back and asked warding nurses to take care of the woman continuously.

3. The researcher explained about cause of labor pain. In addition, she taught the laboring woman how to breathe in each stage of labor including shallow breathing, shallow and rapid breathing and how to breathe in pushing during the second stage. The researcher stopped giving information when the uterus contracted and began giving information again when the uterus relaxed until all information needed for supportive nursing and upright positioning during labor was given as planned.

4. The researcher gave the laboring woman encouragement, willingness and praise when she attained suitable activities such as correct breathing technique. Also, the laboring woman was ensured good outcomes for herself and the baby.

5. The researcher promoted overall comfort for the experimental group, such as adjusting the temperature and soft indirect lighting, releasing music, etc. Hygiene measures were taken care of, such as: regular changing of disposable underpad and providing adequate oral fluids.

6. The researcher assisted the laboring woman on upright position according to the woman's desire, such as standing, walking (no limited distance/position/time and rest when tired), vertical sitting (leaning on the back of a chair with a small stool under her feet or sitting front to back of the chair, or spreading out over the chair; with a pillow in between or leaning on the head of the bed, sitting, squatting , 60-degree semisitting (on a bean pillow with 60 degrees shift of horizontal line which adjoins head of the bed). The laboring woman could lie down when tired

and could change to upright position again if she wanted. The researcher encouraged the laboring woman to frequently change position more than twice hourly. The position was chosen at the woman's will.

7. The researcher asked the laboring woman about labor pain by using Visual Analogue Scale every 1 hour since the beginning of study (when the cervix dilated 3-4 centimeters) until childbirth.

8. When the cervix of the laboring woman was fully dilated, the researcher assisted her to 60-degree upright position by leaning on a bean pillow 60-degree shift from horizontal line with her sacrum at the wedge of the delivery bed. The feet were spread and knees were raised and spread out as wide as possible.

9. The researcher helped and coached the laboring woman to push correctly. When uterine contractions ended, the laboring woman should take long inhalation 1-2 times and blow it out. When they felt severe pain or urge to push, she should take long inhalation again, and push with her abdominal muscle. In one uterine contraction she should push about 2-3 times then take regular respiration when the uterus relaxed.

10. The researcher gave praise and encouragement to the laboring woman when she had done well. If the laboring woman could not perform correct pushing, the researcher encouraged and coached how to push correctly until the delivery was over.

Control group

1. The researcher met the laboring woman in control group to ask for consent after giving information of the study.

2. When consented, the researcher asked the laboring woman about labor pain by using Visual Analogue Scale every 1 hour since the beginning of the study (cervix dilated 3-4 centimeters) until childbirth.

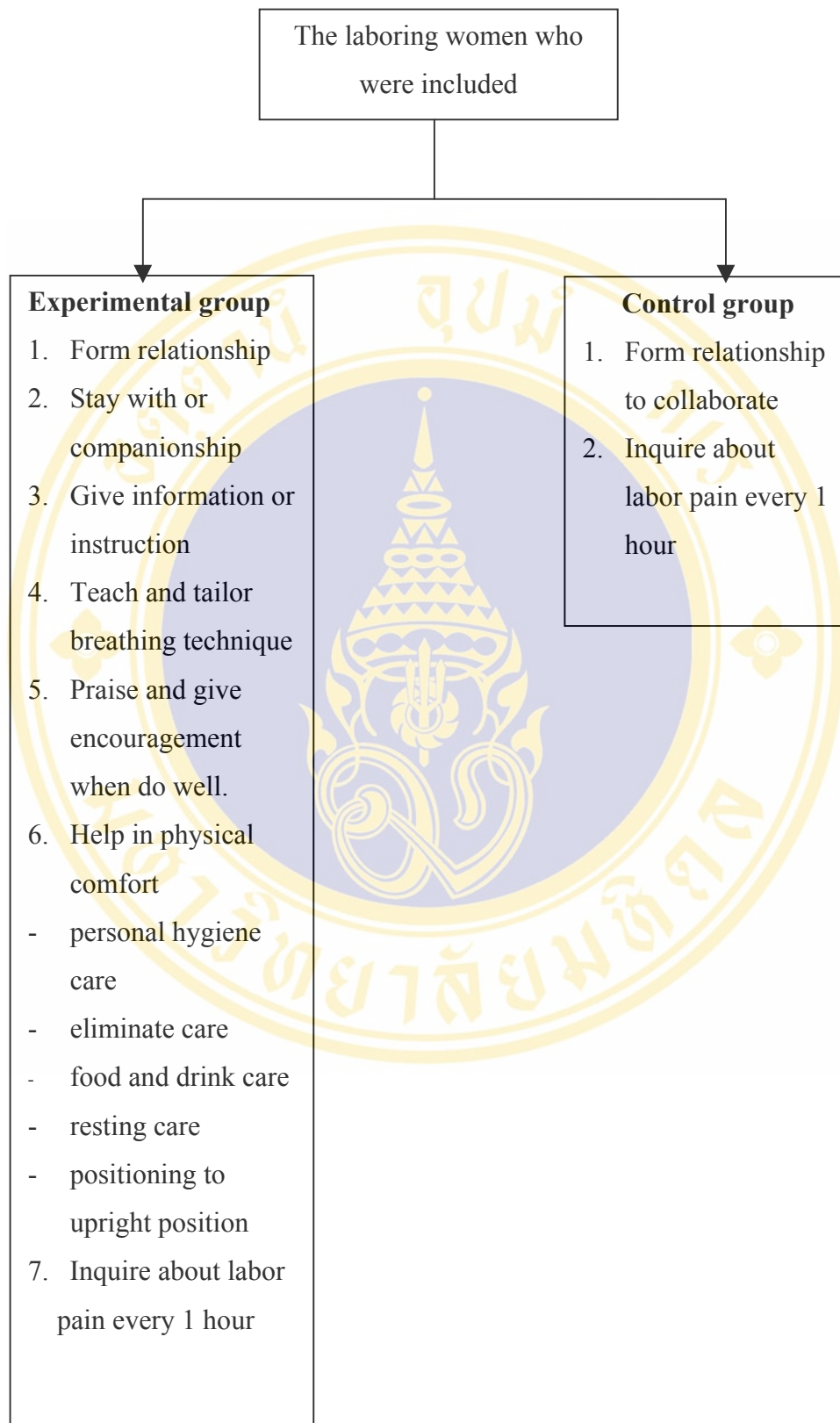


Figure 2: Data collection

Data analysis

The data was analyzed by statistical package for social science/ person computer plus (SPSS) by different characteristics of data, such as:

1. The demographic data of parturients and newborns were analyzed in terms of frequency percentage, mean and standard deviation.
2. Comparison of mean of labor pain between experimental and control group by independent t-test.
3. Comparison of mean of duration of labor between experimental and control group by independent t-test.
4. Comparison of mean of Apgar scores between experimental and control group by independent t-test

CHAPTER 4

RESULTS

This study aimed to determine the effects of supportive nursing care and upright positioning during labor on labor pain, duration of labor and the newborn's Apgar scores in the first-time mothers. The sample was 60 laboring women in the Labor and Delivery Unit, Mukdaharn Hospital. They were divided into 2 groups, the experimental and control groups. The women in the experimental group were intervened with supportive nursing care and upright positioning during labor while those in the control group received routine nursing care as usual in the Labor and Delivery Unit, Mukdaharn Hospital. The researcher collected data herself using the Personal Data Record Form, the Visual analogue scale, and the Positioning During Labor Observation Form. Data were analyzed using independent t-test to compare means of labor pain score, duration of active phase and second stage of labor, and Apgar scores between experimental and control groups. The results were presented in 2 parts.

Part I: The sample's personal characteristics as shown in Table 1

Part II: The comparison of labor pain scores, duration of active phases (first stage of labor), duration of second stage of labor, and Apgar scores between the experimental and control groups as shown in Tables 2-4.

Part 1: The sample's personal characteristics.**Table 1.** Number and percent of the laboring women categorized by age, occupation, body weight, height, and estimated infant birth weight in experimental and control groups.

Personal characteristics	Experimental group (n=30)		Control group (n=30)		p -value (test)
	number	percent	number	percent	
Age [year]					
<20	11	36.66	12	40.00	0.347 ^{ns} (Chi-square test)
20-24	15	50.00	14	46.66	
25-29	3	10.00	3	10.00	
30-34	1	3.33	1	3.33	
	range	18-34	range	18-31	
	mean	21.6	mean	20.0	
	S.D.	3.4	S.D.	3.6	
Occupation					
Non-labor	4	13.33	3	10.00	1.00 ^{ns} (Fisher's exact test)
Labor	26	86.67	27	90.00	
Body weight [kilogram]					
51-54	6	20.00	12	40.00	2.16 ^{ns} (Chi-square test)
55-59	15	50.00	10	33.33	
60-64	8	26.67	7	23.33	
65-69	1	3.33	1	3.33	
	range	51-68	range	50-59	
	mean	58.3	mean	57.4	
	S.D.	3.9	S.D.	4.6	

^{ns} =None significance (p>.05)

Personal characteristics	Experimental group (n=30)		Control group (n=30)		p -value (test)
	number	percent	number	percent	
Height [centimeter]					
145-149	3	10.00	4	13.33	1.89 ^{ns} (Chi-square test)
150-154	9	30.00	11	36.66	
155-159	16	53.33	13	43.33	
160-164	2	6.67	1	3.33	
	range	145-162	range	149-163	
	mean	155.9	mean	154.1	
	S.D.	3.4	S.D.	3.6	
Birth weight [gram]					
2,500-2,999	13	43.33	16	53.33	.77 ^{ns} (Chi-square test)
3,000-3,499	15	50.00	12	40.00	
3,500-3,999	2	6.67	2	6.67	
	range	2,550-3,550	range	2,500-3,850	
	mean	2,968.3	mean	2,988.3	
	S.D.	334.2	S.D.	285.1	

^{ns} =None significance (p>.05)

As shown in Table 1, fifty percent of the laboring women in experimental group and 46.7% in the control group were between 20-24 years. Their age ranged between 18 to 34 years with a mean of 21.6 years (SD = 3.4) in the experimental group and 18 to 31 years with a mean of 20.0 years (SD = 3.6) in the control group. Most of both groups worked as laborers: 86.7% in experimental group and 90% in the control group.

The laboring women's body weights ranged between 51-68 kilograms with a mean of 58.3 kilograms (SD = 3.9) in the experimental group and 50-59 kilograms with a mean of 57.4 kilograms (SD = 4.6) in the control group. The majority of both

groups weighed 50-59 kilograms, 70% in the experimental and 73.3% in the control groups.

The laboring women's height ranged between 145-162 centimeters with a mean of 155.9 centimeters (SD = 3.4) in the experimental group and 149-163 centimeters with a mean of 154.1 (SD = 3.6) in the control group. The majority of the both groups were between 150-159 centimeters in height, 83% in the experimental and 80% in the control groups.

For the infant's birth weight, nearly half of the experimental group (43.3%) and over half of the control group (53.3%) were between 2,500-2,999 grams. The infant birth weight ranged between 2,550-3,550 grams with a mean of 2,968.3 (SD = 334.2) in the experimental group and ranged between 2,500- 3,850 grams with a mean of 2988.3 grams (SD = 285.1) in the control group. The majority of the infant birth weight was between 2,500 to 3,499 grams, approximately 93% in both groups.

In comparing the sample's personal characteristics, it was found that the laboring women in both groups were not significantly different in age, types of occupation, body weight, height, and infant birth weight ($p > .05$).

Part II: The comparison of labor pain scores, duration of active phase (first stage of labor), duration of second stage of labor, and Apgar scores between the experimental and control groups.

Table 2. Comparing means of labor pain scores between the experimental and the

Labor pain scores	X	S.D.	t
Experimental group	66.4	10.7	3.45*
Control group	76.2	11.3	

control groups by independent t-test

* $p < .05$

Table 2 shows that the means of labor pain scores were 66.4 and 76.2 in the experimental and the control group respectively. The results of independent t-test revealed that the mean of labor pain score in the experimental group was statistically significantly lower than that in the control group ($p < .05$).

Table 3. Comparing means of duration of labor between the experimental and the control groups by independent t-test

Duration of labor (minute)	Experimental group (n=30)		Control group (n=30)		t
	X	SD	X	SD	
Active phase	248.8	103.5	272.0	79.4	.97 ^{ns}
Second stage of labor	35.2	13.2	37.7	14.5	.70 ^{ns}

^{ns} = None significance ($p > .05$)

Table 3 shows that the means of duration of labor in active phase were 248.8 and 272 minutes in the experimental and control groups respectively. Means of duration of the second stage of labor were 35.2 and 37.7 minutes in the experimental and the control groups respectively. The results of the independent t-test revealed that the mean of duration of labor in active phase of the control group was shorter than that of the experimental group with no statistical significance ($P > .05$). Similarly, the means of duration of the second stage of labor of the experimental group was not significantly shorter than that of the control group.

Table 4. Comparing means of Apgar scores at 1 and 5 minutes between the experimental and the control groups by independent t-test

Time/ Apgar	Experimental group		Control group		t
Scores	X	SD	X	SD	
At 1 minute	9.50	.69	9.56	.62	69 ^{ns}
At 5 minute	10	0	10	0	a

^{ns} = None significance ($p > .05$), a = no statistics are computed because Apgar scores at 5 min in both groups are constant

Table 4 shows that means of the newborn's Apgar score at 1 minute were 9.5 and 9.6 in the experimental and the control groups. The results of the independent t-test revealed that there was no statistically significant difference between both groups ($p > .05$). For the Apgar score at 5 minutes, the scores were constant in both groups, therefore, they could not be computed.

CHAPTER 5

DISCUSSION

This research aimed to determine the effects of supportive nursing care and upright positioning during labor in the first-time mothers in Mukdaharn Hospital. The sample was 60 pregnant women in labor who were divided into 2 groups, experimental and control groups. The experimental group received supportive nursing care and upright positioning. The control group received routine nursing care. The Personal Data Questionnaire, the Visual Analogue Scale, and the Labor Record Form were used to collect data. Level of labor pain, duration of active phase in the first stage, duration of the second stage of labor and Apgar scores at 1 and 5 minutes were compared between the experimental and the control groups by independent t-test. The results were discussed according to hypothesis as follows:

Hypothesis 1: The level of labor pain in the pregnant women who received supportive nursing care and upright positioning during labor was lower than that in the control group.

The findings showed that a mean score of labor pain in experimental group (66.4) was significantly lower than that in the control group (76.2). The results can be explained as follows:

First, the laboring women in the experimental group received supportive nursing care in which a nurse provided emotional support, information, and physical comfort. Emotional support included making relationship, reassurance, touch, and companionship. Building relationship can convey a sense of trust and secure. These feeling minimizes perceptions of dangers and threats during labor (Affonso, 1979). Reassurance was expressed by telling the laboring women that they were doing right. This can encourage them to feel more confidence and enhance their activity that enables them to cope well with labor pain (Butler, Luther, & Frederick, 1984). Touch was provided with two kinds: gentle and firm. For example, stroking, rubbing, and using cool cloth are kind of gentle touch. Hand on the shoulder and holding hand

during uterine contractions are kind of firm touch. Gentle touch can convey kindness and compassion, and firm touch conveys a sense of intention to help (Affonso, 1979). Companionship conveys that the person is important and brings about the trusting relationship as the labor progresses (Hodnett, 1996). The laboring women feel supported and in control if they are kept aware of what is happening to them. Butani and Hodnett (1980) stated that pain during labor seems to be caused not only by the pain but also by feeling of helplessness and lack of control. Therefore, emotional support can make the laboring women feel confidence, secure and perceive less pain.

In this study, giving information included explaining how labor pain occurs and what to expect, situation, processes and progress of labor, breathing technique and the results of examination. The laboring women were informed about sign and symptom of normal labor. Helpful communication can help the laboring women pass the painful time and decrease pain awareness (Hodnett, 1996). One of the significant needs of the laboring women is to be assured that everything is going well. If the women do not know what is going to happen, they may think that something is going wrong. Providing information about the situation, processes, and progress of labor can correct and clarify miss conception and prepares the women for the next phase of labor and can deter them from being discouraged or fearful at the seemingly lack of progress (Pillitteri, 2003). However, providing information should not be done during contraction. Breathing techniques can help to distract the women's attention from uterine contraction and labor pain. If the cells of the brain stem that register an impulse as pain are preoccupied with other stimuli, a pain impulse cannot be registered. Breathing technique accomplishes this (Pillitteri, 2003). Talking, except reassurance and praise, was kept to the minimal level because it can be annoying. The laboring women could ask any questions, request for some help, or talk about their worries. This, in turn, reduces the women's fear, stress and pain. Telling the results of examination causes the laboring women to feel relax and confident in their safety. Knowing what was going on can reduce anxiety. Therefore, these nursing activities can decrease perception of labor pain.

Physical comfort included taking care of personal hygiene and perineal care, food, water, urinary bladder, bed and clothes. Both the experimental and the control groups received all of these cares. However, the experimental group was taken care by

the researcher who was willing to care for the women closely. Knowing that there was someone willing to help could cause a person to feel more positive, to have a sense of predictability and stability, and to increase self-esteem, self-efficacy, and control over the situation. These feelings, in turn, caused the body and uterine function to work well. It was not the direct effect of the nursing care because the control group also received the same nursing activities. The difference was the willingness of the caretaker that made the laboring women perceive less pain.

In the control group, the laboring women received routine nursing care which included emotional support, information, and physical comfort as well. However, they were approached occasionally. Most nursing activities emphasized on physical aspect and in brief period. Usually, the laboring women received less support from the staff in the labor and delivery unit. This might result from inadequate time or limited knowledge about how to support the laboring women (Miltner, 2000).

Therefore, supportive nursing care was the important role of the nurses and midwives which can be used to alleviate the labor pain. However, no single measure is likely to hold the key to help laboring women to cope well with labor. The laboring women may be encouraged to try alternative techniques (Hodnett, 1996). Although the mean scores of labor pain between two groups were significantly different (66.4 and 76.2 for the experimental and control group respectively), the researcher observed that the expressions of coping behavior between the two groups were different as well. The result was consistent with Supprasert (1998) who found that nursing support, upright positioning and music could help the laboring women cope well with labor pain. Meta-analyses of the results of the labor support trials showed strong evidence that professional support was effective (Hodnett, 1996).

In the experimental group the laboring women received assistance and stimulation to change position frequently to reduce pressure on certain muscular regions. Frequent change in position is used to improve circulation, relieve fatigue, increase comfort, and decrease excruciating pain. It releases exhausted muscles and adjusts the relation of the fetus and pelvis and decreases compression on just one point of body, thus decreases pain (Fenwick & Simkin as cited in Simpson & Creehan, 1996). In addition, upright position straightens the long axis of pelvic curve. The uterus moves forward, resulting in no pressure on maternal nerve plexus. Labor pain

of laboring women in upright position is less than those in supine position (Pavlik, 1995 cited in Simpson & Creehan, 1996; Shermer & Raines, 1997). Walking and standing facilitate fetal rotation and descent and relieve backache (Burroughs & Leifer, 2001).

The finding was in agreement with that of Mendez-Bauer and colleague (1975) who revealed that twenty laboring women reported less pain with contraction in an upright position. However, Andrews and Chrzanowski (1990) found that level of comfort between the laboring women in upright position group were not significantly different from that in the recumbent group. McManus and Calder (1978) found that there was no difference in requirement of analgesic drugs between the women in upright position and recumbent position.

However, the laboring women in this study had limitation in moving, particularly in upright position because the limited space in Labor and Delivery Unit. Moreover, women in labor usually perceive that they have to lie in bed, not to walk around. Then, the women in the experimental group might feel that they were acting strangely. Therefore, they used walking less than other positions which were mostly sitting, semi-sitting (backward and forward) and squatting. Squatting was usually used for a short period, not more than 10 minutes.

In the control group, the laboring women usually lie in bed throughout the first stage of labor. They might not often change their position because nurses usually tell them to lie on their left side. This might cause the women stress and strain due to lying in the same position for a long period. This situation, in turn, reduced blood flow, leading to anaerobic metabolism that brought about lactic congestion and local acidosis. Lactic acid stimulated pain neuroreceptor in the muscle resulting in muscular fatigue and suffering from pain.

Therefore, the results of this study confirm that supportive nursing care and upright positioning can decrease perception of pain. However, it is not clear whether it is the effect of solely supportive nursing care or upright positioning or both.

Hypothesis 2. Duration of active phase and the second stage of labor in the experimental group are shorter than those in the control group.

The results showed that means of duration of active phase and the second stage of labor in experimental group were not significantly shorter than those in the control group ($p > .05$) which may be explained as follows:

The result of the study was consistent with McManus and Calder (1978) who found that there was no statistically difference in the length of labor between the women in upright position and recumbent group. It was also consistent with Preuksamethanun (1982) who found that there was no significant difference in duration of the first stage of labor between the laboring women in 40-degree upright position and those in the dorsal recumbent position. However, the finding was inconsistent with Andrews and Chrzanowski (1990) who found that the laboring women in upright position had shorter phase of maximum slope than that in recumbent position. Bloom et al (as cited in Goer, 1999) found that walking in labor did no harm but giving no benefit. This may be the benefit of side-lying position used in the control group that tended to produce less frequent and strong uterine contractions (Pavlik, 1988). This kind of contractions is effective in dilating the cervix. Therefore, there was no significant difference of duration of active phase between the experimental and the control groups because of these two positions facilitate blood circulation, particularly venous return by inferior vena cava and promote effective uterine contraction. Pavlik (1988) suggested that sitting upright might slow labor if the laboring women could not often change the position. In this study, the laboring women were often in the 60-degree semi-sitting because of the limitation of the space in the labor and delivery unit. Besides, they might think that laboring women should not walk around. It might make them feel that they were doing something strange.

In the second stage of labor, there was no significant difference of duration of labor between both groups. This was consistent with the result of Suwunkam (1986) study who used 30-degree upright position comparing with dorsal recumbent in the second stage of labor. She found that there was no significant difference in the duration of second stage of labor between both positions. Although an upright positioning could accelerate duration of the second stage of labor by facilitating fetal descending and increasing pelvic inlet and outlet dimension, in semi-fowler position,

the sacrum and coccyx encroach on the pelvic outlet, interfering with fetal descent (Shermer, & Raines, 1997). In this study, the laboring women were often in the 60-degree semi-sitting because of the limited space in the labor and delivery unit.

However, four cases in the experimental group had blood loss about 300-400 ml. while the others had about 200-300 ml. This might be the result of 60-degree semi-sitting. The laboring women were not often change the upright position. This position might have caused poor blood circulation in the lower part of the body. The descending part might have put pressure on the sacral nerves and caused the women to experience a pushing sensation (Pillitteri, 2003). This condition made the women push involuntarily before full dilatation causing swelling of the cervix. The cervical swelling caused prolonged both first and second stage of labor by obstructing the presenting part. It is noteworthy that these four cases had more bleeding than the others. They lost about 300-400 ml blood while the others had about 200-300 ml blood loss. This might have been the result of the continuous pressure exerted on the lower part of the women's lower buttock, causing more congestion (Roberts & Woolley, 1996). Nevertheless, due to limited information, it cannot be concluded as such.

Hypothesis 3. Apgar Scores of the newborns at 1 and 5 minutes in both groups are no different.

The results showed that means of Apgar Scores at 1 minute = 9.5, and at 5 minutes = 10 in both groups, which is discussed as follows. The laboring women in experimental group had fetal safety by increment of pelvic outlet (Liu, 1979; Roberts, 1980), the uterus being shifted forward, reducing pressure on the maternal aorta and vena cava, thus decreasing supine hypotension and decreasing uteroplacental compromise. According to a previous study on laboring women in 40-60 degree upright position (Caldeyro-Barcia et al 1960), it was found that the mean PaO₂ and pH of umbilical artery and vein are higher, and the mean PaCO₂ is lower than those in the parturient who is in supine position, resulting in enough oxygen for the fetus (Carr, 1980). The control group was advised to lie on the left position (avoiding supine position) so that there was no pressure on the aorta from the uterus to avoid supine hypotension and avoid supine uteroplacental compromise. This resulted in Apgar scores of the newborns being 8-10. This finding was the same as the study of Andrews & Chrzanoski (1990) which found that Apgar scores at 1 and 5 minutes of newborns

of the laboring women in supine and upright position were not different, because the two sampling groups were parturients who had low risk. Therefore the Apgar scores were high in both groups (Humphrey, Hounslow, Morgan & Wood, 1973; Mitre, 1974; Andrews & Chrzanowski, 1990).



CHAPTER 6

CONCLUSION

Summary of the Study

This quasi – experimental research was designed to study the effects of supportive nursing care and upright positioning during labor on labor pain, duration of labor and Apgar scores of newborn in the first-time mothers. The population was purposively selected first-time mothers who delivered at Mukdaharn Hospital during June 1, 2001 – January 31, 2002. Sixty women were divided into two groups. The first was experimental group of 30 cases in which laboring women received supportive nursing care and upright positioning. The second was control group of 30 cases in which laboring women received routine nursing care in Mukdaharn Hospital. The data collected by the researcher using the Personal Record Form, Labor Record Form and the Visual Analogue Scale. Those data were compared on mean score of labor pain, duration of labor and Apgar scores at 1 and 5 minutes by independent t-test. The results of this study were concluded as follow:

1. The laboring women who received supportive nursing care and upright positioning had less labor pain than the laboring women who received routine nursing care. The difference was statistically significant ($p < .05$).
2. The laboring women who received supportive nursing care and upright positioning had shorter duration of labor than the laboring women who received routine nursing care. However, the difference was not significant ($p > .05$).
3. The laboring women who received supportive nursing care and upright positioning had higher Apgar scores than the laboring women who received routine nursing care. The difference was not significant ($p > .05$).

Implication and Recommendations

The implication and application for nursing practice

The results showed that laboring women who received supportive nursing care and upright positioning during labor had pain level less than those who received routine nursing care.

The results suggested that supportive nursing care is important to pain perception of laboring women. Supportive nursing care includes providing knowledge and information, emotional support and enhancing physical comfort. Knowledge and information consists of general information about labor and method used to distract from labor pain such as breathing techniques. Emotional support contains good relationship, companionship, and encouragement which can increase the mother's self-esteem. Physical comfort can be enhanced by assisting with daily activities, general hygiene, calm and clean environment.

Nurses should point out to the hospital administrators that those works need a lot of time and energy. Therefore, adequate manpower should be provided to achieve all these tasks with good quality.

The implication and application for further studies.

1. There should be a comparison between the effects of supportive nursing care by a family member such as the husband or the mother of the laboring woman and by health care personnels on pain response or labor pain in laboring women.
2. Comparison of upright position and reclining position during labor and delivery on outcomes of labor should be studied.

Limitations of the research

1. This sample was not randomized and the control and experimental groups were not studied in the same period of time.
2. This research may have bias from the researcher collecting data by herself on both groups.

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คลอด. วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต, สาขาพยาบาลศาสตร์ บัณฑิต
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คลอด ความพึงพอใจของผู้คลอดต่อท่าคลอด. วิทยานิพนธ์ปริญญาวิทยาศาสตร
มหาบัณฑิต, สาขาพยาบาลศาสตร์ บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.
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และลำตัวสูงในระยะที่หนึ่งของการคลอดต่อกระบวนการคลอด. วิทยานิพนธ์ปริญญา
พยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลแม่และเด็ก บัณฑิตวิทยาลัย มหาวิทยาลัย
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บรรเทาปวด โดยไม่ใช้ยา ต่อพฤติกรรมการเผชิญความเจ็บปวดในระยะคลอด ระยะเวลา
คลอด และการรับรู้ประสบการณ์การคลอดของผู้คลอดครั้งแรก. วิทยานิพนธ์ปริญญา
พยาบาลศาสตรมหาบัณฑิต, บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย.
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นิพนธ์ปริญญา วิทยาศาสตรมหาบัณฑิต, สาขาเจริญพันธุ์และการวางแผนประชากร
บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.
- สุปราณี อัทธเสรี และเยาวลักษณ์ เสรีเสถียร. (2531). (Athaseri & Serisathien, 1988). การ
ศึกษาความสัมพันธ์ระหว่างปัจจัยบางประการกับการรับรู้เกี่ยวกับประสบการณ์การคลอด.
รายงานการวิจัยภาควิชาสูติศาสตร์นรีเวชวิทยา สาขาพยาบาลศาสตร์ มหาวิทยาลัยมหิดล.



APPENDIX A

LIST OF EXPERTS

1. Asst. Prof. Pornpimol Ruangvutilert
Department of Obstetrics and Gynecology, Faculty of Medicine Siriraj Hospital,
Mahidol University.
2. Teerapun Taweetammasathit
Department of Obstetrics and Gynecology, Mukdaharn Hospital,
3. Asst. Prof. La-eard Udomratana
Department of Obstetrics and Gynecologic Nursing, Faculty of Nursing,
Mahidol University.
4. Asst. Prof. Sirirat Sugeetorn
Department of Obstetrics and Gynecologic Nursing, Faculty of Nursing,
Faculty of Nursing, Mahidol University.
5. Asst. Prof. Dr. Yaowalak Serisathien
Department of Obstetrics and Gynecologic Nursing, Faculty of Nursing,
Faculty of Nursing, Mahidol University.

APPENDIX B**CONSENT FORM****คำชี้แจง**

สวัสดีค่ะ ดิฉันชื่อ นางสาวณิศา กำแหง นักศึกษาหลักสูตรปริญญาพยาบาลศาสตรมหาบัณฑิต สาขาการพยาบาลแม่และเด็ก คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล กำลังศึกษาเกี่ยวกับความรู้สึกลึกเจ็บปวดในระยะคลอดในผู้คลอดครั้งแรก ดิฉันขอความร่วมมือ จากท่านในการตอบแบบวัดระดับความรู้สึกลึกเจ็บปวดในระยะคลอด คำตอบที่ได้รับจากท่านจะถือเป็นความลับ ผลการศึกษาจะนำเสนอในภาพรวม จะไม่กระทบกระเทือนต่อการรักษาที่ท่านจะได้รับ ท่านสามารถบอกเลิกการเป็นกลุ่มตัวอย่างของการวิจัยเมื่อไรก็ได้ เมื่อท่านอ่านแบบฟอร์มการยินยอมเข้าเป็นกลุ่มตัวอย่างการวิจัยและตกลงเข้าร่วมเป็นกลุ่มตัวอย่างการวิจัยแล้ว ขอความกรุณาเซ็นชื่อในแบบฟอร์มด้วยค่ะ

ขอขอบคุณในความร่วมมือ
นางสาวณิศา กำแหง

แบบฟอร์มยินยอมเป็นกลุ่มตัวอย่างการวิจัย
กลุ่มทดลอง

ข้าพเจ้าชื่อ.....นามสกุล.....อายุ ปี มีความยินดีเข้าร่วมเป็นกลุ่มตัวอย่าง(กลุ่มทดลอง)ในการทำวิจัยเรื่อง ผลของการพยาบาลแบบสนับสนุนประคับประคองร่วมกับการจัดทำศิระและด้าตัวสูงในระยะคลอด ต่อความเจ็บปวดจากการคลอด ระยะเวลาของการคลอด และคะแนนแอฟการ์ของทารกแรกเกิด ในผู้คลอดครั้งแรก ของนางสาวภณิดา กัณหะ นักศึกษาหลักสูตรปริญญาพยาบาลศาสตรมหาบัณฑิต สาขาการพยาบาลแม่และเด็ก คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล

ข้าพเจ้าได้รับคำอธิบายถึงวัตถุประสงค์ วิธีการ และระยะเวลาที่ใช้ในการศึกษาจาก นางสาวภณิดา กัณหะ อย่างเข้าใจแล้ว และทราบว่ากรวิจัยครั้งนี้จะไม่กระทบกระเทือนต่อการรักษาพยาบาลที่ได้รับ ข้าพเจ้าจะได้รับการช่วยเหลืออย่างทันทีหากมีสิ่งผิดปกติเกิดขึ้น และสามารถบอกเลิกการเป็นกลุ่มตัวอย่างของการวิจัยเมื่อไรก็ได้ที่ข้าพเจ้าต้องการ

(ลงชื่อ).....ผู้มาคลอด

(.....)

(ลงชื่อ).....พยาน

(.....)

แบบฟอร์มยินยอมเป็นกลุ่มตัวอย่างการวิจัย
กลุ่มควบคุม

ข้าพเจ้าชื่อ.....นามสกุล.....อายุ ปี มีความยินดีเข้าร่วมเป็นกลุ่มตัวอย่าง(กลุ่มควบคุม)ในการทำวิจัยเรื่อง ผลของการพยาบาลแบบสนับสนุนระดับประจักษ์ร่วมกันกับการจัดทำศิระและลำตัวสูงในระยะคลอด ต่อความเจ็บปวดจากการคลอด ระยะเวลาของการคลอด และคะแนนแอฟการ์ของทารกแรกเกิด ในผู้คลอดครั้งแรก ของนางสาวภณิดา กัมพล นักศึกษาหลักสูตรปริญญาพยาบาลศาสตรมหาบัณฑิต สาขาการพยาบาลแม่และเด็ก คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล

ข้าพเจ้าได้รับคำอธิบายถึงวัตถุประสงค์ วิธีการ และระยะเวลาที่ใช้ในการศึกษาจาก นางสาวภณิดา กัมพล อย่างเข้าใจแล้ว และทราบว่า การวิจัยครั้งนี้จะไม่กระทบกระเทือนต่อการรักษาพยาบาลที่ได้รับ ข้าพเจ้าจะได้รับการช่วยเหลืออย่างเต็มที่หากมีสิ่งผิดปกติเกิดขึ้น และสามารถบอกเลิกการเป็นกลุ่มตัวอย่างของการวิจัยเมื่อไรก็ได้ที่ข้าพเจ้าต้องการ

(ลงชื่อ).....ผู้มาคลอด
(.....)

(ลงชื่อ).....พยาน
(.....)

APPENDIX C

H.N. / A.N.

☐ กลุ่มทดลอง☐ กลุ่มควบคุม**แบบบันทึกข้อมูลส่วนบุคคล****ส่วนที่ 1 ข้อมูลส่วนบุคคล**

ลำดับที่

อายุ ปี เดือน อาชีพ

น้ำหนัก..... กิโลกรัม ส่วนสูง..... เซนติเมตร

ส่วนที่ 2 ข้อมูลเกี่ยวกับการคลอด

เริ่มเจ็บครรภ์จริงเวลา..... น. ของวันที่.....

เริ่มมีน้ำเดินเวลา..... น. ของวันที่.....

สภาพถุงน้ำคร่ำขณะเริ่มทำการศึกษา ☐ ยังไม่แตกหรือรั่ว ☐ รั่ว ☐ แตกแล้ว
(แตกเอง ☐ , ได้รับการเจาะถุงน้ำ ☐ เวลา..... น. ของวันที่.....)

ลักษณะของน้ำคร่ำ (สีปกติหรือมีขี้เทาปน).....

เริ่มรับเข้าทำการศึกษา (ปากมดลูกเปิด 3 เซนติเมตร) เวลา..... น. วันที่.....

ปากมดลูกเปิด 10 เซนติเมตร เวลา..... น.

ทารกเกิดเวลา..... น.

น้ำหนักทารกแรกเกิด..... กรัม

รวมระยะเวลาระยะปากมดลูกเปิดเร็ว..... นาที

รวมระยะเวลาระยะที่สองของการคลอด..... นาที

คะแนนแอฟการ์ของทารกแรกเกิด นาทีที่ 1..... คะแนน นาทีที่ 5 คะแนน

ส่วนที่ 3 เครื่องมือวัดความเจ็บปวด

กรุณาทำเครื่องหมายกากบาท (X) ลงบนเส้นตรงตรงตำแหน่งที่ตรงความรู้สึกเจ็บปวดของท่านมากที่สุด (ความรู้สึกเจ็บปวดขณะที่ท่านรู้สึกว่่าท้องแข็ง)

ครั้งที่...1.....

ไม่ปวด

ปวดมากที่สุด

ครั้งที่...2.....

ไม่ปวด

ปวดมากที่สุด

ครั้งที่...3.....

ไม่ปวด

ปวดมากที่สุด

ครั้งที่...4.....

ไม่ปวด

ปวดมากที่สุด

ครั้งที่...5.....

ไม่ปวด

ปวดมากที่สุด

ครั้งที่...6.....

ไม่ปวด

ปวดมากที่สุด

APPENDIX C INSTRUMENT FOR INTERVENTION

แผนการพยาบาลแบบสนับสนุนระดับประเทศร่วมกับการจัดทำพิธีและลำดับที่สูงในระยะคลอด

จัดทำโดย
เนื้อหาประกอบด้วย

นางสาวกณิดา กำแหง

1. ความรู้ทั่วไปเกี่ยวกับการคลอด

2. เทคนิคการหายใจเพื่อผ่อนคลายความเจ็บปวดในระยะคลอด

3. การจัดทำพิธีและลำดับที่สูงในระยะคลอด

บรรยาย สาริต

วิธีการ

ซักถามขณะให้ข้อมูล และสังเกตผลการปฏิบัติตัวในระยะเจ็บครรภ์

การประเมินผล
วัตถุประสงค์ทั่วไป

1. ผู้คลอดเกิดความคุ้นเคยและไว้วางใจต่อผู้วิจัย
2. ผู้คลอดคลายความวิตกกังวลและมีกำลังใจในการเผชิญความเจ็บปวดในระยะคลอด
3. ผู้คลอดมีความรู้ความเข้าใจเกี่ยวกับการดำเนินการคลอดในระยะต่างๆของการคลอด
4. ผู้คลอดอยู่ในท่าศีรษะและลำดับที่สูงซึ่งจะช่วยส่งเสริมให้ผลของการคลอดเป็นไปในทางที่ดีขึ้น
5. ผู้คลอดได้รับน้ำและอาหารอย่างเพียงพอ มีร่างกายสะอาด พักผ่อนได้
6. ผู้คลอดแบ่งคลอดได้ถูกวิธี

แผนการพยาบาลแบบสนับสนุนระดับประจักษ์พร้อมกับการจัดทำศิระและแลัวสูง

วัตถุประสงค์	กิจกรรม	การประเมินผล
- ผู้คลอดเกิดความคุ้นเคยและความไว้วางใจต่อผู้วิจัย - ผู้คลอดคลายความกลัวความวิตกกังวลและมีกำลังใจในการเผชิญความเจ็บปวดในระยะคลอด	• ผู้วิจัยสร้างสัมพันธภาพกับผู้คลอด หลังจากผู้คลอดเข้ามาอยู่ในห้องคลอดแล้วในระดัะปากมดลูก 2-3 เซนติเมตร โดย 1. ผู้วิจัยทักทายผู้คลอดด้วยสื่อนี้ยิ้มแย้ม พร้อมทั้งแนะนำตัวเอง บอกชื่อ-สกุลและสถานภาพ ว่าเป็นพยาบาลวิชาชีพ ทำงานประจำห้องคลอด มีประสบการณ์ในการดูแลสตรีในระยะคลอดและพร้อมจะให้ความช่วยเหลือทั้งผู้คลอดและบุตร 2. ผู้วิจัยพูดคุย ชักถามผู้คลอดในเรื่องต่างๆ ไป เช่น วัน ที่ผ่านมานอนหลับพักผ่อนได้หรือไม่ 3. ขณะพูดคุย ผู้วิจัยเป็นผู้รับฟังที่ดี มีพฤติกรรมแสดงออกทางสีหน้า ท่าทาง น้ำเสียงที่อบอุ่นเป็นกันเอง • ผู้วิจัยบอกให้ผู้คลอดทราบว่าเธอจะเป็นเพื่อนผู้คลอดตั้งแต่เริ่มทำการศึกษานจนกระทั่งการคลอดสิ้นสุดโดย 1. ผู้วิจัยนั่งอยู่ข้างเตียงผู้คลอด เป็นเพื่อนพูดคุย เป็นผู้รับฟังที่ดี แสดงถึงความเห็นอกเห็นใจผู้คลอด เมื่อมีกิจกรรมการพยาบาลพยาบาลผู้วิจัยเป็นผู้ให้กิจกรรมการพยาบาล 2. ให้การพยาบาลด้วยความกระตือรือร้น ไม่แสดงท่าทีเบื่อหน่าย หรือเพิกเฉยต่อคำพูดของผู้คลอดให้ความช่วยเหลือโดยไม่รีรอ	- สังเกตจากสีหน้าของผู้คลอด - แสดงถึงความเป็นมิตรกับผู้วิจัยและมีท่าทีสนใจผู้วิจัย - สังเกตจากกิริยาท่าทางของผู้คลอด ที่เริ่มคุ้นเคยกับผู้วิจัย โดยมีการพูดคุย ถาม-ตอบกับผู้วิจัย - สังเกตสีหน้าท่าทางของผู้คลอดว่ามีลักษณะผ่อนคลายหรือมีหน้าตาเคร่งเครียดเรียบเฉยหรือฉุนเฉียว

วัตถุประสงค์	กิจกรรม	การประเมินผล
- ผู้คลอดอยู่ในท่าศีรษะและลำตัวสูงซึ่งจะช่วยเหลือส่งเสริมให้ผลของการคลอดเป็นไปในทางที่ดีขึ้น	3. อยู่เป็นเพื่อนผู้คลอดเมื่อแพทย์ทำการตรวจรักษา • ผู้วิจัยสัมผัสที่มือหรือแขนผู้คลอดเบา ๆ โดย 1. เมื่อผู้คลอดแสดงสีหน้าเจ็บหรือความรู้สึกกังวล ความวิตกกังวล ผู้วิจัยจับมือหรือจับที่แขนของผู้คลอดเบา ๆ ลูบมือหรือแขนเป็นครั้งคราว 2. เมื่อผู้คลอดอยู่ในระยะเบ่งคลอด ผู้วิจัยจับบริเวณหลังมือ ซ้อมือหรือแขนผู้คลอดเป็นโค้ช ให้จังหวะในการเบ่งคลอดขณะมดลูกหดตัว 3. เป็นโค้ช ให้จังหวะในการเบ่งคลอดขณะมดลูกหดตัว • ผู้ช่วยถือ จัดท่าศีรษะและลำตัวสูงตามความต้องการของผู้คลอด โดย 1. จัดเตรียมอุปกรณ์ที่ใช้ในการจัดทำศีรษะและลำตัวสูง ไว้ให้พร้อมใช้ ประกอบด้วย หมอนหนุน 4 ใบ, หมอนสามเหลี่ยมทำมุม 60 องศา 1 ใบ, เก้าอี้มีพนักพิง 1 ตัว, ตั้งพักเท้า 1 ตัว 2. ผู้วิจัยช่วยให้ผู้คลอดอยู่ในท่าศีรษะและลำตัวสูงให้มากที่สุดตลอดระยะเวลาของการคลอด ซึ่งมีท่าต่าง ๆ คือ เริ่มจากท่านั่ง เพื่อรับฟังคำอธิบาย ขั้นตอนวิธีการพยาบาลที่จะได้รับจากผู้วิจัยในระยะคลอด และเมื่อเกิดความรู้สึกเหนื่อยจากการอยู่ในท่าใดท่านั่งนาน ๆ ควรเปลี่ยนท่าทางเป็นท่านอนซึ่งท่านอนจะทำให้ท่านั่งเป็นท่าศีรษะและลำตัวสูง ได้แก่ นั่งพิงหัวเตียง นั่งตัวตรงหันหน้าออกพิงเก้าอี้	- สังเกตว่าผู้คลอดมีท่าทางที่สุขสบายมากขึ้นหรือไม่ และมีปฏิกิริยาต่อต้านการสัมผัสหรือไม่ - สังเกตลักษณะท่าทางผู้คลอดว่ามีความมั่นใจในตนเองที่จะเผชิญกับความเจ็บปวด และมีสีหน้ายิ้มแย้มพอใจที่ได้รับคำชมเชย - สังเกตว่าผู้คลอดอยู่ในท่าศีรษะและลำตัวสูงแล้วมีท่าทางว่าสุขสบายมากขึ้นหรือลดลง

วัตถุประสงค์	กิจกรรม	การประเมินผล
- ผู้คลอดรู้สึกรอบอุ่นมีกำลังใจ คลายความวิตกกังวล	ขาแยกออกทั้งสองข้างพร้อมแก้อี ทำเดิน โดยเดินไปมารอบ ๆ เตียง หรือตามทางเดินในห้องคลอด โดยมีผู้วิจัยคอยให้การช่วยเหลือ สามารถเดินได้นานเท่าที่ต้องการ เมื่อเหนื่อยก็ให้หยุดพักในที่นั้นหรือยืนโดยเกาะเท้าทั้งสองข้าง ห่างกันพอสมควร ควรให้น้ำหนักตัวลงที่ขาทั้งสองข้างเท่า ๆ กัน ควรเกาะฝ่าผนังห้องหรือราวกันข้างเดียวไว้เพื่อป้องกันการหกล้ม ในกรณีที่ไม่สามารถยืน เดิน หรือนั่งตัวตรง จากความเหนื่อยล้า ผู้วิจัยช่วยเหลือให้ผู้คลอดอยู่ในท่ากึ่งนั่งกึ่งนอน โดยพิงหมอนสามเหลี่ยมที่ทำมุม 60 องศากับแนวราบ และสามารถพิงหมอนโดยพิงในท่าหงายหรือท่าตะแคงตัวก็ได้ • ผู้วิจัยให้กำลังใจกล่าวคำชมเชยแก่ผู้คลอด โดย 1. พูดปลอบโยน ให้กำลังใจผู้คลอด เมื่อผู้คลอดแสดงสีหน้าที่ทางเจ็บครรภ์และสอนเทคนิคการหายใจเพื่อผ่อนคลายความเจ็บปวด ว่าระหว่างที่ยังไม่คลอดผู้คลอดสามารถช่วยตนเองให้มีความเจ็บปวดลดลงได้ โดยผู้วิจัยจะสอนวิธีการหายใจเพื่อใช้ในระยะเจ็บครรภ์ 2. ผู้วิจัยกล่าวคำชมเชยว่า “คุณ ... ทำถูกต้องแล้วนะค่ะ” “คุณทำดีแล้วค่ะ” “คุณทำต่อไปนะค่ะ ... คุณ ... ทำถูกแล้วค่ะ” เมื่อผู้คลอดสามารถปฏิบัติได้ถูกต้อง 3. บอกผลความก้าวหน้าของการคลอด เพื่อให้ผู้คลอดมีกำลังใจในการปฏิบัติต่อไปให้กำลังใจ โดยปฏิบัติการพยาบาลอย่างนุ่มนวล ถูกต้องเพื่อให้ผู้คลอดมีความมั่นใจว่าจะได้รับการดูแลให้ได้รับความสุขสบายตามสมควรขณะอยู่ในห้องคลอด	- ผู้คลอดให้ความร่วมมือในการตรวจร่างกายเป็นระยะ ๆ - มีสีหน้าแสดงความพึงพอใจในการดูแลที่ได้รับ - ไม่แสดงสีหน้า ท่าทางวิตกกังวล

วัตถุประสงค์	กิจกรรม	การประเมินผล
- ผู้คลอดมีความรู้ความเข้าใจเกี่ยวกับ การดำเนิน การคลอด ในระยะ ต่าง ๆ ของ การคลอด	4. หลักเลียงการ ใช้คำศัพท์ทาง การแพทย์ พุศุชุปชบหรือแสดง พฤติกรรม ที่มีความลับ กับบุคลากร ในห้องคลอด 5. แสดงท่าที่รับฟัง คำถามหรือ คำพูดที่แสดง ว่ารู้สึก เบื่อหน่าย และตอบ ข้อซักถาม อย่าง มีเหตุผล ถูกต้อง ตามความ เป็นจริง เหมาะสม กับ พื้นความรู้ ของ ผู้คลอด ที่ จะรับ ฟัง ได้ และ ไม่ขัดข้อง ต่อแผน การรักษา • ให้ข้อมูล เกี่ยวกับการ คลอด ทั่ว ๆ ไป 1. แนะนำ ให้สตรี มีครรภ์ ได้ทราบ ว่า จะ ได้รับ การตรวจ ร่างกาย เป็นระยะ เช่น การ ฟัง เสียง หัวใจ ทารก ตรวจ ทางช่อง คลอด การ วัด สัญญาณชีพ จร เป็นต้น 2. บอก ให้สตรี มีครรภ์ ทราบ ก่อน การตรวจ ทุก ครั้ง และ บอก ผล การตรวจ ให้ทราบ ทุก ครั้ง 3. แนะนำ ให้ผู้คลอด มีความ มั่นใจ ในตัว บุคลากร ที่ จะ ให้การ ดูแล รักษา ได้ แก่ แพทย์ หรือ พยาบาล ผู้ที่ จะ ทำ คลอด ให้ ว่า เป็น ผู้มี ประสพ การณ์ และ พร้อม ที่ จะ ให้ การ ช่วยเหลือ ได้ ตลอด เวลา 4. ชี้แจง ให้ทราบ ว่า ใน ห้อง คลอด มี เครื่องมือ เครื่องใช้ ทัน สมัย และ เตรียม พร้อม เสมอ ที่ จะ ให้ การ ช่วยเหลือ ทั้ง ผู้คลอด และ บุตร • อธิบาย ให้ทราบ ถึง ระยะ ต่าง ๆ ของ การ คลอด ซึ่ง แบ่ง เป็น 3 ระยะ คือ ระยะ ที่ 1 ของ การ คลอด นับ ตั้งแต่ เริ่ม เจ็บ ครรภ์ จริง ปากมดลูก เริ่ม มีการ เป็ด ขยาย จนถึง ระยะ ปากมดลูก เป็ด หมด (10 ซม.) ใน ระยะ นี้ มดลูก จะ มี การ หดรัด ตัว	- ผู้คลอด ให้ ความ ร่วม มือ ใน การ ตรวจ ร่างกาย เป็น ระยะ ๆ - มี สีหน้า แสดง ความ พึง พอใจ ใน การ ดูแล ที่ ได้รับ - ไม่ แสดง สีหน้า ทำ ท่าทาง วิดก กังวล - ผู้คลอด ทราบ ความ หมาย ของ แต่ละ ระยะ ของ การ คลอด - ไม่ มี สีหน้า สงสัย เมื่อ กล่าว ถึง ระยะ ของ การ คลอด

วัตถุประสงค์	กิจกรรม	การประเมินผล
	สม่ำเสมอและเริ่มรุนแรงขึ้น ถัดขึ้น ในขณะที่มีการหดตัวจะรู้สึกเจ็บครรภ์ร่วมด้วย การหดตัวของมดลูกจะทำให้ปากมดลูกมีการเปิดขยายคอหอยจะเริ่มบางและหดสั้นลง ศีรษะทารกในครรภ์จะมีการเคลื่อนต่ำในขณะเดียวกันอาจมีถุงและ/หรือมูกปนเลือดออกเมื่อปากมดลูกเปิดมากขึ้นหรือมีอาการบวมแดงมีการแตกของถุงน้ำคร่ำหัวเป็นเหตุการันต์ไปคั่ง จึงไม่ต้องตกใจ และเมื่อปากมดลูกเปิดหมด คือประมาณ 10 ซม. คือสิ้นสุดของระยะที่ 1 ของการคลอด 2. ระยะที่ 2 ของการคลอด (ระยะเบ่ง) นับตั้งแต่ปากมดลูกเปิดหมด จนกระทั่งถึงทารกเกิดหมดพ้นตัว ในครรภ์แรกใช้เวลาประมาณ 1-2 ชั่วโมง ในครรภ์หลังใช้เวลาประมาณ 1/2 - 1 ชั่วโมง ภายหลังจากที่คลอดแล้วจะเหนื่อยอ่อน การออกจากระยะการหดตัวของมดลูกจะรุนแรงขึ้น ความเจ็บปวดจะรุนแรงขึ้นด้วย ส่วนน้ำจะมีการเคลื่อนต่ำมากขึ้น จนกระทั่งศีรษะ ลำตัวและแขนขาทารกเกิดถือเป็นสิ้นสุดระยะที่ 2 ของการคลอด 3. ระยะที่ 3 ของการคลอด เริ่มจากหลังรกเกิด มดลูกจะมีการหดตัวเพื่อให้มีการลอกเกาะมีการหดตัวทำให้เลือดหยุด เมื่อรกหลุดตัวสมบูรณ์แล้วทารกจะคลอดออกมาโดยวิธีธรรมชาติ หรือช่วยเล็กน้อย ถือเป็นสิ้นสุดของระยะที่ 3 • สอนเทคนิคการหายใจเพื่อใช้ในการคลอด 1. การหายใจแบบช้า เป็นการควบคุมการหายใจระดับทรวงอก โดยการหายใจแบบช้า ๆ ลึก ๆ โดยปฏิบัติดังนี้ เมื่อมดลูกเริ่มหดตัว ให้เริ่มต้นด้วยการหายใจล่าง-	- ตั้งแถวผู้คลอดหายใจในขณะเจ็บครรภ์ได้ถูกต้องหรือไม่

วัตถุประสงค์	กิจกรรม	การประเมินผล
	ปอด 1 ครั้ง โดยการหายใจเข้าทางจมูกลึก ๆ ซ้ำ ๆ แล้วค่อย ๆ ฟ่อนลมหายใจออกช้า ๆ เปิดปากเล็กน้อย ต่อมาให้หายใจแบบช้า ๆ ลึก ๆ โดยการหายใจเข้าทางจมูกค่อย ๆ สูดลมหายใจเข้านับจังหวะ 1-2-3-4 แล้วจึงค่อย ๆ ฟ่อนลมหายใจออกทางปากช้า ๆ เปิดปากเล็กน้อย นับจังหวะ 1-2-3-4 ทำเช่นนี้ประมาณ 6-9 ครั้งต่อวันที่เมื่อมดลูกคลายตัวเต็มที่ให้หายใจล่างปอด 1 ครั้ง 2. การหายใจแบบต้นเร็วและเบา การหายใจแบบนี้เป็นการหายใจที่ค่อนข้างเร็วและเบาปฏิบัติโดย เมื่อมดลูกเริ่มหดรัดตัวให้หายใจล่างปอด 1 ครั้ง แล้วด้วยการหายใจเข้า หายใจออก ซ้ำ ๆ ลึก ๆ ก่อน เมื่อสัญญาณมดลูกหดรัดตัวเต็มที่จึงเปลี่ยนการหายใจเป็นแบบต้น ๆ เร็ว ๆ เบา ๆ ไปเรื่อย ๆ ซึ่งการหายใจแบบนี้ ๆ เบา ๆ เหมือนกับหายใจที่ค่อนข้างเร็วกว่ามดลูกเริ่มคลายตัวให้หายใจแบบช้า ๆ ลึก ๆ เมื่อมดลูกคลายตัวเต็มที่ให้หายใจล่างปอด 1 ครั้ง 3. การหายใจแบบต้นเร็วและเบ่งออก โดยปฏิบัติดังนี้ เมื่อมดลูกหดรัดตัวให้หายใจล่างปอด 1 ครั้ง ต่อมาให้หายใจแบบต้น เบาเร็ว 3-4 ครั้ง ติดต่อกันแล้วจึงหายใจออก 1 ครั้ง โดยห่อปากเป่าลมออกทางปากยาว ๆ เหมือนเป่าเทียน ทำเช่นนี้ไปเรื่อย ๆ ตลอดเวลาที่มดลูกหดรัดตัว เมื่อมดลูกคลายตัวเต็มที่ให้หายใจล่างปอด 1 ครั้ง 4. การหายใจเพื่อเบ่งคลอด เป็นการควบคุมการหายใจเมื่อปากมดลูกเปิด 10 ซม. โดยปฏิบัติดังนี้ เมื่อมดลูกเริ่มหดรัดตัว ให้หายใจล่างปอด 1 ครั้ง ต่อมาสูดลม	

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- ผู้คลอดแบ่งคลอดได้ถูกวิธี	หายใจทางจมูกกลืน ๆ หรืออาจใช้การนับจังหวะ 1-2-3-4 ถึง 6 ระยะที่มดลูกหดตัว 1 ครั้ง สามารถแบ่งซ้ำได้ประมาณ 3-4 ครั้ง เมื่อมดลูกคลายตัวเต็มที่ศีรษะเด็กไม่เคลื่อนกลับเข้าไปข้างในอีก ซึ่งระยะนี้ ผู้คลอดจะต้องหยุดการเบ่งคลอด พยายามป้องกันแรงเบ่งคลอดที่มากเกินไปอันอาจทำให้เกิด การฉีกขาดของช่องคลอดมากขึ้น ดังนั้นผู้คลอดจึงต้องหยุดเบ่งคลอดโดยอ้าปากหายใจเข้าทางปากต้น ๆ เร็วๆ จนกระทั่งสิ้นสุดการคลอดเด็ก • สอนวิธีการเบ่งคลอด และอยู่เป็นเพื่อน 1. เมื่อปากมดลูกเปิดหมด ย้ายผู้คลอดจากห้องคลอดไปยังห้องคลอดผู้วิจัยช่วยเหลือจัดให้ผู้คลอดอยู่ในท่ากึ่งนั่งกึ่งนอน พิงหมอนสามเหลี่ยม โดยส่วนบนของผู้คลอดอยู่บริเวณช่องว่างกลมของเตียงคลอด 2. เมื่อผู้คลอดเริ่มรู้สึกเจ็บครรภ์ มีลมเบ่งให้ผู้คลอดอยู่ในท่ากึ่งศีรษะให้ค้างชิดกับอก มือที่จับข้างเตียงคลอด ชันเข้า แยกขาออกจากกันให้กว้าง 3. ผู้วิจัยบอกให้ผู้คลอดสูดลมหายใจเข้า ... ออก ... ลึก ๆ 1-2 ครั้ง แล้วให้ออกแรงเบ่งลงไปที่ช่องคลอดให้แรงที่สุด (ประมาณ 6 วินาที) 4. ให้ผู้คลอดสูดลมหายใจเข้าลึก ๆ 1 ครั้ง แล้วเบ่งเหมือนครั้งแรก ทำซ้ำอีก 1-2 ครั้ง จนกระทั่งมดลูกเริ่มคลายตัว ผู้วิจัยบอกให้ผู้คลอดหายใจตามปกติ ถ้าเมื่อยขาให้หยุดขา แล้วให้ปล่อยตัวตามสบายไม่เกร็ง 5. เมื่อผู้คลอดเบ่งได้ถูกต้อง ผู้วิจัยกล่าวคำชมเชยว่า “คุณทำได้ดีถูกต้องดีแล้วนะคะเมื่อ	- สังเกตการเคลื่อนไหวด้านของทารกขณะเบ่งมีการเคลื่อนไหวต่างหรือไม่ - ฝ่าเท้าของผู้คลอดตุง กล้ามเนื้อหูรูดทวารหนักขยายออกหรือไม่

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ผู้คลอดได้รับน้ำและอาหารอย่างเพียงพอ มีร่างกายสะอาด พักผ่อนได้	ลงแบ่งครั้งต่อไปให้คุณทำเช่นเดิมคะ” ถ้าปฏิบัติยังไม่ถูกต้อง ผู้วิจัยจับมือให้กำลังใจ แสดงท่าทีเต็มใจช่วยเหลือ และช่วยให้จังหวะควบคุมการแบ่งคลอดต่อไป จนกระทั่งทารกเกิด 6. ผู้วิจัยใช้ผ้าชุบน้ำหมาด ๆ ซับเหงื่อที่ใบหน้า คอ แขน และลำตัวของผู้คลอด 7. ผู้วิจัยบอกความก้าวหน้าของการแบ่งคลอดแก่ผู้คลอด 8. หลังจากการกคลอดแล้ว ผู้วิจัยให้ผู้คลอดนอนราบ และให้การพยาบาลเพื่อให้มดลูกหดตัวดีให้ผู้คลอดนอนพักหลังจากทารกแรกเกิดได้รับการดูแลเบื้องต้นจนแน่ใจว่าปลอดภัยแล้ว นำทารกมาให้มารดาคลอดแบบผิวกายมารดาสัมผัสถึงผิวกายทารกโดยตรง และช่วยเหลือให้บุตรดูดนมมารดา • ผู้วิจัยช่วยเหลือให้ความสุขสบายทางด้านร่างกาย 1. ดูแลความสุสบายทั่ว ๆ ไป เช่น เช็ดตัวให้เมื่อรู้สึกมีเหงื่อออกมาก ทำความสะอาดบริเวณอวัยวะสืบพันธุ์ให้ เมื่อถ่ายอุจจาระปัสสาวะหรือมีมูกเลือดออกเปื้อน 2. ดูแลให้ได้รับอาหารและน้ำ ตามแผนการรักษาของแพทย์ 3. ดูแลเรื่องการขับถ่ายปัสสาวะ แนะนำให้ถ่ายปัสสาวะเมื่อปวด ในกรณีที่มีเจ็บครรภ์ไม่สามารถถ่ายปัสสาวะได้ และกระเพาะปัสสาวะเต็ม จะสวนปัสสาวะให้ด้วยวิธีที่สะอาดปราศจากเชื้อ 4. จัดสิ่งแวดล้อมโดย ไม่เปิดไฟให้สว่างมากเกินไปโดยไม่จำเป็น ไม่พูดคุยในเรื่องที่ไม่จำเป็น ดูแลความสะดวกสบายของเตียงและบริเวณข้างเตียงให้สะอาด	- มีร่างกายสะอาด พักผ่อนได้ อย่างเหมาะสม - การดำเนินการคลอดเป็นไปตามเวลาที่กำหนด

BIOGRAPHY

NAME Miss Panida Gumlae
DATE OF BIRTH November 22, 1972
PLACE OF BIRTH Pissanulok, Thailand
INSTITUTION ATTENDED Borrommaratchchonani college of Nursing,
Nakornrachasrima, 1990
Diploma of Nursing and Midwifery
Mahidol University, 1999-2004
Master of Nursing Science
(Maternal and Child nursing)
POSITION & OFFICE 1994-Present, Labor and Delivery Unit
Mukdaharn Hospital 24 Pitukpanomkate road,
Mukdaharn, Thailand
Position : Registered Nurse
Tel. 042-611285
call 172, 272
HOME ADDRESS 211 Dontal, ampher Mukdaharn, province
Thailand Tel. 042-689010