A STUDY OF A NURSE'S ROLE IN REDUCING LABOR PAIN IN DELIVERY UNITS

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF NURSING SCIENCE
(MATERNAL AND CHILD NURSING)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2000

ISBN 974-665-205-2

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entitled

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was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Master of Nursing Science (Maternal and Child Nursing)
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ACKNOWLEDGEMENT

I would like to express my deepest gratitude to Asst.Prof.Yupin Chandaragga, Assoc.Prof.Supranee Athaseri, and Asst.Prof.Kaimook Wichiencharoen who have kindly given their time and great value suggestions in developing this thesis. My gratitude is also expressed to Assoc.Prof.Fongcum Tilokskulchai and Assoc.Prof.Shusee Visalyaputra, for their constructive comments and invaluable suggestions about various thesis components.

Furthermore, I would like to thank all of the experts who carefully evaluated the questionnaires for content validity. However, this thesis would not have existed without all subjects participating in this study, who willingly shared their time and energy in completing the questionnaires.

My sincerest gratitude also goes to the Nursing Department, Division of Obstetrics and Gynecology at Siriraj Hospital, for the opportunity that enables me to undertake this study.

Last but not least, I owe my profound gratitude to my beloved mother and my friends who continuously spur me on to complete my studies.

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4137035 NSMC/M : MAJOR: MATERNAL AND CHILD NURSING; M.N.S. (MATERNAL AND CHILD NURSING)
KEY WORDS : NURSING PRACTICE, REDUCING LABOR PAIN

NADSUDA CHOTWATTANAKULCHAI: A STUDY OF A NURSE'S ROLE IN REDUCING LABOR PAIN IN DELIVERY UNITS. THESIS ADVISORS: YUPIN CHANDARAGGA, M.Ed. SUPRANEE ATHASERI, M.Ed. KAIMOOK WICHIENCHAROEN, Ed.D. 76 P. ISBN 974-665-205-2

Nurses' practice in reducing labor pain can help laboring women increase comfort and alleviate a strenuous ordeal. This study aimed at exploring nurses' practice in reducing labor pain and comparing practices of nurses who have different knowledge, childbirth experience, working experience in obstetrics, and training in pain management. 197 subjects were registered nurses who were working in the delivery units of 17 hospitals in Bangkok. Data was collected by using nursing practice in reducing labor pain and knowledge in pain management questionnaires, and analyzed by using percentages, t-test, and one-way ANOVA.

Findings revealed that nurses have a high level of practice in reducing labor pain. Furthermore, nurses who have good knowledge of pain management provide practice in reducing labor pain more than those who have less knowledge ($p < .01$). Nurses who have been trained in pain management provide practice in reducing labor pain more than those who have not ($p < .01$). In addition, nurses who have 11 to 15 years of experience in obstetric nursing provide practice in reducing labor pain less than those who have 1 to 5 years, 6 to 10 years, and more than 16years of experience in obstetric nursing ($p < .05, .05, .01$ respectively).

It is recommended that nurses should be trained in pain management by an active training program and refresh their knowledge in reducing labor pain after 10 working years.

4137035 NSMC/M: สาขาวิชา: การพยาบาลแม่และเด็ก: พย.ม. (การพยาบาลแม่และเด็ก)

นาถสุดา โชติวัฒนากุลชัย: การศึกษาการปฏิบัติกิจกรรมการพยาบาลเพื่อบรรเทาความเจ็บปวดในระยะคลอดของพยาบาลในหน่วยห้องคลอด (A STUDY OF A NURSES' ROLE IN REDUCING LABOR PAIN IN DELIVERY UNITS) คณะกรรมการควบคุมวิทยานิพนธ์: ยุพิน จันทรัคคะ, ค.ม. สุปราณี อัทธเสรี, ค.ม. ไข่มุกข์ วิเชียรเจริญ, กศ.ด. 76 หน้า. ISBN 974-665-205-2

การปฏิบัติกิจกรรมของพยาบาลเพื่อบรรเทาความเจ็บปวด ช่วยให้ผู้คลอดสุขสบาย คลายความเจ็บปวดทุกข์ทรมานและมีการรับรู้ประสบการณ์การคลอดที่ดี การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อ ศึกษาการปฏิบัติกิจกรรมการพยาบาล เพื่อบรรเทาความเจ็บปวดในระยะคลอดของพยาบาลและเปรียบเทียบการปฏิบัติกิจกรรมการพยาบาลระหว่างพยาบาลที่มีความแตกต่างกันในด้านความรู้ ประสบการณ์การคลอด ประสบการณ์การทำงาน และการฝึกอบรมเกี่ยวกับการบรรเทาความเจ็บปวดในระยะคลอด กลุ่มตัวอย่างคือ พยาบาลวิชาชีพที่ปฏิบัติงานในห้องคลอดของโรงพยาบาล 17 แห่งในกรุงเทพมหานคร รวม 197 คน เก็บข้อมูลโดยใช้แบบสอบถามการปฏิบัติกิจกรรมการพยาบาลและ ความรู้เกี่ยวกับการบรรเทาความเจ็บปวด นำข้อมูลมาวิเคราะห์โดยคำนวณค่าร้อยละ และคำนวณความแตกต่างของการปฏิบัติกิจกรรมการพยาบาลเพื่อบรรเทาความเจ็บปวด โดยใช้ค่าที (t-test) และความแปรปรวนทางเดียว (ANOVA) ที่ระดับความเชื่อมั่น 95 %

ผลการวิจัยพบว่า พยาบาลปฏิบัติการพยาบาลเพื่อบรรเทาความเจ็บปวดให้ผู้คลอดอยู่ในระดับค่อนข้างมาก พยาบาลที่มีความรู้ดีปฏิบัติการพยาบาลเพื่อบรรเทาความเจ็บปวดมากกว่าพยาบาลที่มีความรู้น้อยและพอใช้ และพยาบาลที่เคยฝึกอบรมเกี่ยวกับการบรรเทาความเจ็บปวดปฏิบัติการพยาบาลเพื่อบรรเทาความเจ็บปวดมากกว่าพยาบาลที่ไม่เคยฝึกอบรมอย่างมีนัยสำคัญทางสถิติ ($p < 0.01$) พยาบาลที่มีประสบการณ์ 11-15 ปี ปฏิบัติการพยาบาลเพื่อบรรเทาความเจ็บปวดน้อยกว่าพยาบาลกลุ่มอื่นอย่างมีนัยสำคัญทางสถิติ ($p < 0.05$)

ข้อเสนอแนะจากการวิจัยครั้งนี้ คือ ผู้บริหารทางการพยาบาลควรจัดให้มีการฝึกอบรมเชิงปฏิบัติการหรือให้ความรู้เกี่ยวกับการบรรเทาความเจ็บปวดในระยะคลอดแก่พยาบาลที่มีความรู้น้อย โดยเฉพาะอย่างยิ่งพยาบาลที่มีประสบการณ์ทำงานนานเกิน 10 ปี

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CHAPTER I

INTRODUCTION

Background and Significance of the Study

Labor is the process which the fetus, placenta, and membranes are expelled through the birth canal (Beckmann, et al., 1995:169). It is an individual experience. Labor involves not only the expulsive muscular effort of the uterus but also being a strenuous ordeal in which the women's whole body participates. It demands their physical stamina and emotional control (Myles, 1971: 227). As labor progresses the intensity of each contraction increases, resulting in a greater possibility or intensity of discomfort (Reeder & Martin, 1987: 505). Pain results from not only physical factors but also psychological factors. Women may be apprehensive about the process of labor and its possible outcome, and if the thought of the actual birth perturbs her such a state of uncertainty and anxiety culminates in fear (Myles, 1971: 226). Fear and anxiety increase muscle tension, resulting in vasospasm induced ischemia, which, in turn, causes pain. As fear and anxiety heighten, muscle tension increases, inhibiting the effectiveness of contractions and increasing the experience of discomfort, thus further heightening fear and anxiety (Simpsin & Creehan, 1996: 229). This is called the fear-tension-pain-cycle (Dick-Read, 1970; Jimenez, 1983 cited in Cohen,Kenner & Hollingsworth, 1991: 630).

When labor begin, women's behaviors, as associated with the sensation of pain, will vary. They may display grimacing, crying, moaning, tensing of muscles, or hysteria. The fact that some women do not display reactions to pain does not

necessarily mean that there is no discomfort present. The fear of pain is very obvious on some women and not so obvious in others (Burroughs, 1986: 214). Their responses to labor pain can also be seen as automatic signs (Keller, 1981: 195). For example, increased blood pressure, pulse rate, and respiration. Should their intensely pains remain, it will have negative impacts on women and their fetuses. For example, interfering with the maternal-infant acquaintance process and bonding (May & Mahlmeister, 1994: 600), resulting in women's negative childbirth experience, increasing risk of fetal distress, and enhancing prolongation of labor. Subprasert (1998: ง) finds that the perception of childbirth experience in women who receive nursing care used pain relief methods (non-pharmacological methods) are significantly more positive than those who receive only routine care procedures. Aim at helping them have a positive experience and meet their needs, nurses take responsibility to care for laboring women by giving them comfort and helping them relieve pain. There are many methods to promote comfort and alleviate pain. The researcher decides to explore which methods nurses provide to women.

As nurses begin care for women in labor, they need to follow the steps of the nursing process as a guide for planning- assessing (Auvenshine & Enriquez, 1990: 385). Similarly to Kodiath (1986 cited by Scott, 1992: 11), the key to effective pain control is accurate assessment. Since the emotions of women in labor profoundly influence their reaction to discomfort and pain, nurses endeavor to help women to cope with stress. Myles (1971: 226) states that being trusted person and companion plays an important part in influencing women's behaviors as well as giving information and suggestion; giving cleanliness and comfort, and setting a peaceful

atmosphere; and using techniques such as distraction or massage. These methods help women in coping with apprehension, weariness, tension, anxiety, as well as pain.

As regards Auvenshine & Enriquez and Myles concepts, relieving labor pain, which nurses can perform, are divided into 5 categories: **Assessing labor pain, Being trusty companion, Providing information and education, Helping to cope with pain by using pain control techniques, and Promoting general comfort and hygiene.**

Assessing labor pain is a method that nurses use to find out whether or not and how women are experiencing pain. It has been approached in three way: by asking the women to describe the pain; by observing the women's behavior and automatic signs; and by using instruments to measure pain (Auvenshine & Enriquez, 1990: 382). It is easy for nurses to observe laboring women's behaviors because most of them often respond to pain by changing behaviors such as facial grimacing or irritability. Some women do not perform any behavior although they are experiencing pain. Therefore, nurses should assess their pain by using instruments to measure pain such as Visual Analogue Scale or Faces Pain Rating Scale.

Being trusty companion is a method that nurses use to reduce women's fear and loneliness. The comforting companionship of nurses who will listen, explain, encourage and assure, or keep silent as required, is of inestimable value to women at labor time (Myles, 1971: 228). When labor is established, nurses should remain in constant attendance. In addition, the personality of nurses is of paramount importance in handling women in labor. When their approaches are kindly, their manners are reassurance, and they exhibit by word and deed their interests in, and concern for the women in labor as a person, the women's anxiety or fear may be reduced and the pain

will thereby be relieved. Diers, et al. (1972: 426) find that patients experience relief from pain when nurses treat them like a human being.

Providing information and education is a method that nurses use to decrease women's apprehension and anxiety. The women who are kept informed about what is happening to them are more likely to feel in control of themselves and the situation. They are therefore more likely to recognize the pain of labor as a bearable experience (Auvenshine & Enriquez, 1990: 387). Nurses should give reasons or explanations, e.g. prior to vaginal examination, nurses tell women why this is being done: afterwards nurses assure that all is well, and that the baby will, or will not, be born soon; after checking the fetal heart rate, nurses tell them how are their babies. In addition, education about the physical and emotional processes of childbirth replaces misinformation and its associated fear (Simkin, 1995: 169). According to Athaseri, et al. (1990: 72-77), women who are provided information could cope with pain better than those who are not. Similarly, Subprasert (1998: ง) finds that women who are educated with process of childbirth could cope with pain better than those who are not.

Helping to cope with pain by using pain control techniques is a method that nurses use to distract women from the perception of pain. Nurses use distraction to heighten women's pain threshold (Myles, 1971: 229). There are 4 strategies to distract women from pain: relaxation techniques, cutaneous stimulation, mental stimulation, and breathing techniques (Gorrie et al., 1994: 366). During labor, nurses can watch women for signs of tension and help them focus on relaxing tense muscles (Dick-Read, 1984: 62-78). When it comes to gate control theory, cutaneous stimulation is provided to compete with and inhibit pain awareness: Simkin (1995: 162-168) offers superficial heat and cold, soothing touch and massage, and

acupressure techniques. According to Subprasert (1998: ง), women who use effleurage technique could cope with pain better than women who do not. Khamis, et al. (1983: 493) find that women become more tolerant of labor pains after applied with heat on the abdominal wall. In addition, mental stimulation techniques such as imagery, focal point, or focusing to music occupy the women's mind and compete with pain stimuli (Gorrie, 1994: 368). According to Kallaya (1997: abstract) and Subprasert (1998: abstract), music can help women cope with pain. Furthermore, breathing techniques give women a different focus during contracting, interfering with pain. Although Limtavong (1987: abstract) suggests that using controlled breathing cannot eliminate labor pain totally, the observed coping with pain scores of the women who use the controlled breathing techniques are higher than those who do not use this technique.

Promoting general comfort and hygiene is a method that nurses use to get rid of the stimuli causing women in under stress. Nursing care to maintain hygiene can increase women's comfort level and block pain perception by removing an additional source of discomfort such as wet sheets. Bed linens must be clean and dry, and they should be free of wrinkles. Placing a cool washcloth on the forehead or sponging the face and neck is refreshing. Women may rinse their mouth with water or mouthwash, not swallowing the water, and take ice chips to help relieve a dry mouth. Frequent perineal care maintains medical asepsis and is comforting. According to Athaseri, et al. (1990: 72-77), promoting general hygiene is effective to help women alleviate pain. Furthermore, positions and movements contribute to both comfort and labor progress. Nurses should encourage women to adopt whatever position is most comfortable. Regularly change sides or position reduce pressure and constant strain on their muscles (Thompson, 1995: 148). Melzack et al., (1991: 476) find that many women in

early labor have less pain and are generally more comfortable in a vertical than in a horizontal position. According to Subprasert (1998: ง), laboring women who are encouraged to move about rate pain scores less than those who are not. Furthermore, the atmosphere of the labor ward should be as quiet and tranquil as possible. Loud talking and noise create the impression of stress and strain (Myles, 1971: 228).

This can be seen that nurses can provide many relieving pain methods. However, each nurse provides relieving pain methods in differences. There are external and internal factors that have an effect on nurses' practices. There are many external factors: number of nurses that can provide an individual care appropriately or atmospheres of labor that can help nurses provide such practices conveniently. There are 4 internal factors that are believed to have an effect on nurses' practice: **knowledge of pain management, childbirth experience, working experience in obstetrics, and training on pain management.**

Knowledge of pain management factor. Knowledge is an essential factor for nurses to perform their practice. Knowledge is relevant in building up understanding, motivation to practise, and coming up with the ability to practise. Thus, nurses who are knowledgeable on pain management can help women cope with stress and alleviate pain. Keller (1981: 190) states that before approaching to pain control in parturition, nurses must first understand its source - **physiology and psychology of pain in childbirth**. Auvenshine & Enriquez (1990: 387) state that nursing intervention in pain control is based on the nurses' knowledge of the childbirth process, **pain assessment, pharmacologic** and **nonpharmacologic pain control**. Along with these knowledge, nurses are able to assess women's pain and provide the appropriate pain-relief methods. **Knowledge of cause of labor pain** is nurses' understanding in

physiology and psychology of pain in childbirth. With this knowledge, nurses understand that pain has sensory and affective dimensions. **Knowledge of pain assessment and non-pharmacological methods** is nurses' understanding in pain relief methods which nurses can perform as mentioned above. **Knowledge of pharmacological methods** is nurses' understanding in pharmacological interventions: analgesia and anesthesia. The former is the reduction of pain without loss of consciousness. The latter is the loss of sensation, either complete or partial, with or without loss of consciousness (Sherwen et al., 1995: 576-577). However, pharmacology methods are another choice for nurses when non-pharmacological methods become less effective. In addition, nurses who know a variety of methods can select those that are most helpful to an individual woman (Gorrie et al., 1994: 366). According to Khumpang (1996: 84), nurses who are more knowledgeable in pain control would practice more in reducing labor pain.

Childbirth experience factor is a belief that childbirth is the most painful experience. The nurse who fully suffered through labor and birth would understand what laboring women need and provide empathic nursing care to help them to alleviate pain and cope with it. Dalton (1986: 230) reports that nurses' pain assessments may have been guided by their pain experiences.

Working experience in obstetrics factor is a belief that nurses who are older and report more years in obstetrics nursing would provide proportionate pain management better than those who are younger and report less years in obstetrics nursing. Dalton (1986: 230) finds that nurses who are older and report more years in nursing spent a greater proportion of their time assessing pain than those who are younger do.

Training on pain management factor is a belief that nurses who have been trained on pain management would enhance their knowledge and skills, and practise more in reducing labor pain than those who have not. In literature reviewing, the researcher cannot find any research related to training on pain management in labor. However, literature shows that training has an effect on trainee's practice. According to Conway-Turner (1997: 565), midwives enhance understanding of hygiene and sanitation, and have created a change in practice after being trained.

In summary, unrelieved pain causes several harms to women and their babies such as impression of childbirth, fetal distress, and obstruction of bonding between women and their babies. The nurse is an important person who can help women get through this crisis situation and alleviate pain. The researcher decides to explore what are nurses' practice in reducing labor pain and whether or not the knowledge in pain management, childbirth experience, working experience in obstetrics, and prior training on pain management have an influence on their practices. The results of this study would be a primary information used to enhance nurses' knowledge in pain management and develop nursing pain management in labor aiming at helping the women in easily and effectively work with their bodies in safely and comfortably deliver their infants.

Statement of the problem / or Research Question

1. What is nurses' practice in reducing labor pain?

2. Do the knowledge in pain management, childbirth experience, working experience obstetrics, and prior training on pain management have an influence on nurses' practice?

Purpose of the study

1. To explore nurses' practice in reducing labor pain.

2. To compare practice in reducing labor pain of nurses who have different knowledge in pain management, childbirth experience, working experience in obstetrics, and training on management of pain in labor.

Conceptual framework

The study uses Auvenshine & Enriquez' s concept for assessment of labor pain and Myles' principles for nursing management of labor. Auvenshine & Enriquez state that as nurses begin care for laboring women, they need to follow the steps of the nursing process as a guide for planning – assessing. Myles states that principles for nursing management of labor aim at helping women cope with stress, anxiety and pain: Being trusty person and companion, Giving information and suggestion, Using pain relief techniques, and Promoting general comfort and setting a peaceful atmosphere. First of all, women can trust in nurses by nurses' approaches that are friendly. Nurses should encourage them and be with them during contraction. This can help women decrease fear, and have a positive childbirth experience. It also makes them feel warm. They thereby are in state of relaxation. Secondly, nurses should keep

inform the women about the progress of labor. This can help women decrease apprehension and anxiety. Furthermore, nurses can use pain relief techniques to help women cope with pain. For example, massage, relaxation technique, breathing techniques, and distraction. Finally, nurses can promote general comfort and hygiene to women. For example, rubbing their bodies with towel when they become soiled; setting a peaceful atmosphere. This can help women decrease stimuli causing them in under stress. They will be in state of relaxation and pain thereby is relieved.

As regards Auvenshine & Enriquez and Myles concepts, nurses' practice in reducing labor pain are assessing labor pain, being trusty companion, promoting information and education, helping to cope with pain by using pain relief techniques, and promoting general comfort and hygiene. Because of many factors, each nurse may provide these practices in differences. For example, external factors which may be numbers of nurses that can provide an individual care appropriately or atmospheres of labor ward that can help them provide such practices conveniently. In addition, internal factors also have an effect on their practice. Knowledgeable nurses would understand how women are experiencing pain and can select an effective nursing care. This study used Keller's concept for nurses' knowledge in source of parturition pain and Auvenshine & Enriquez's concept for nurses' knowledge in pain assessment, pharmacological and nonpharmacological pain control. It means that nurses who would provide an effective care should know about causes of labor pain, pain assessment, pharmacological pain methods, and nonpharmacological pain methods. In addition, nurses who have experience in birth giving would understand what laboring women need and provide sympathetic nursing care. Moreover, nurses who have working experience in obstetrics would have skill to manage labor pain and those who

have been trained on pain management would have new methods to help women reduce labor pain. As mentioned, there are 4 factors that the researcher chooses to study: Knowledge in pain management, childbirth experience, working experience in obstetrics, and training on management of pain in labor. Conceptual framework is shown in Figure I.

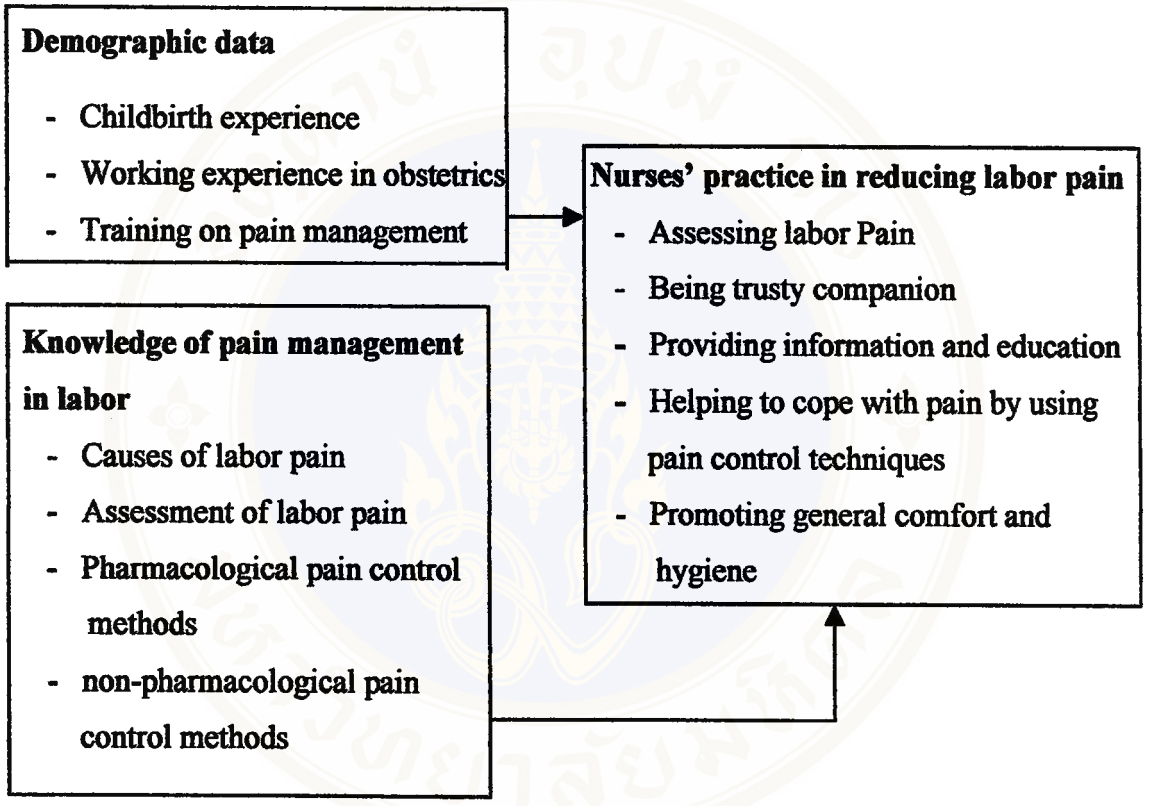

Figure I. Conceptual framework of the study demonstrates the relationships of factors influencing nurses' practice in reducing labor pain.

Hypotheses

1. Nurses who are more knowledgeable in pain management would practise more in reducing labor pain than those who are less knowledgeable.

2. Nurses who have much working experience in obstetrics nursing would practise more in reducing labor pain than those who have less.

3. Nurses who have childbirth experience would practise more in reducing labor pain than those who have not.

4. Nurses who have been trained on pain management would practise in reducing labor pain than those who have not.

Scope of the Study

This study was aimed at exploring nurses' practice in reducing labor pain. Data were obtained from obstetrics nurses who worked at hospitals under the Ministry of University Affairs, hospitals under the Department of Medical Services Ministry of Public Health, hospitals under the Bangkok Metropolitan Administration (B.M.A.), hospitals under the Ministry of Defence, and hospitals under the Ministry of Interior in Bangkok.

Definition of Terms

1. Nurses' practice in reducing labor pain mean a varied techniques of pain management that nurses provide to laboring women. They are divided into 5 categories:

1.1 Assessing labor pain means actions that nurses use to determine whether women are experiencing pain: by asking women to describe the pain, by observing behavior and autonomic signs, and by using tools to ask women to describe the pain.

1.2 Being trusty companion means nurses' actions that aim at reducing fear and loneliness, and increasing women's trust in nurses. For example, be kind, be friendly, and give a kindly welcome.

1.3 Providing information and education means nurses' actions that aim

at helping women decrease apprehension, weariness, and anxiety. For example, nurses give women some information: the process of labor or the result after checking FHR.

1.4 Helping to cope with pain means nurses' actions that aim at distracting to heighten the women's pain threshold. For example, nurses encourage women to use relaxation technique, breathing technique, focusing point and focusing on music; nurses provide massage, touch, and superficial hot-cold compression.

1.5 Promoting comfort and hygiene means nurses' actions that aim at reducing stimuli of stress. For example, change wet sheet, unwrinkled bed sheet, provide ice chip, maintain cleanliness, maintain a peaceful atmosphere, and encourage to move about and to find comfort positions.

2. Knowledge in pain management means nurses' understanding in pain control or reducing pain methods which are divided into 4 categories: causes of labor pain, pain assessment, pharmacological pain control methods, and non-pharmacological pain control methods.

2.1 Knowledge in causes of labor pain means nurses' understanding in source of pain interrelated physiological and psychological mechanisms. These include sensory and psychodynamic processes.

2.2 Knowledge in pain assessment means nurses' understanding in measurement and assessment of pain. These include asking women to describe the pain, observing women's behaviors and vital sign, and using tools to ask women to describe the pain.

2.3 Knowledge in pharmacological pain control methods means nurses' understanding in drug administration for relieving pain including side effects, advantages, and limitations of pharmacological methods.

2.4 Knowledge in non-pharmacological pain control methods means nurses' understanding in non-pharmacological for relieving pain including advantages and limitations, and techniques of non-pharmacology.

3. Demographic factors mean factors that have an influence on nurses' practice in reducing labor pain.

3.1 Childbirth experience means nurses' own experience of birth giving. They are categorized according to their experience or lack of birth giving experience.

3.2 Working experience in obstetrics means the amount of years that nurses have worked in delivery unit. It is assumed that nurses have 1- year experience ever if they report that they have worked for 6 months.

3.3 Training on pain management means the nurses' experiences that have participated and practiced in any short educational program after graduated aiming at gaining skill and knowledge in pain management. They are categorized according to their being trained or lack of it there of.

Expected outcomes and benefits

The findings from this study can provide basic information about nurses' practice. Moreover, the findings can provide details of the factors that have an effect on nurses' practice in reducing labor pain. Finally, it is quite hopeful that the findings could shed new light on ways to advance valuable interventions and motivate nurses with the result that laboring women would receive a higher quality of nursing care.

CHAPTER II

LITERATURE REVIEW

This chapter presented an integrative review of the theoretical and related literature describing the concepts of interest and the interrelationships among them. In this study, pain in parturition, a nurse's role in reducing labor pain, and factors affecting nurses' practice in reducing labor pain were reviewed.

Pain of parturition

Pain is often the first sign when labor is progressing. Labor pain is an individual experience. Ninety-seven percent of laboring women say it is the most painful experience they ever have (Reeder & Martin, 1987: 504). They describe labor pain as an unpleasant sensation, emotion, or feeling that may produce suffering. There are two sources of labor pain: the physiology and the psychology of pain in labor.

The physiology of pain in labor

In first stage, uterine muscles start to contract. Then, there are the resistant force of lower uterine segment, cervix, and peritoneum. Pain sensation is carried by the afferent sympathetic nerve fibers of the uterus, cervix, adnexa, and ligaments. These fibers pass to the region of the uterosacral ligaments and, by way of the uterine, pelvic, hypogastric, and aortic plexuses, into the spinal cord at levels T-10 through L-1, inclusively. The pain sensation is then transmitted along the spinal nerves to the brain stem, stimulating the whole central nervous system. Impulses then travel through the thalamus to the cerebral cortex. In second stage, pain caused by head

compression to the perineal structures including rectum causing discomfort and willing to push. The pain perceptions carry through pudendal nerves (S2-3-4) (Bonica, 1975 cited by Keller, 1981: 190). The perception of pain is straight-through transmissions. In addition, the perception of pain is also related to another factors: stretching of the cervix and lower uterine segment, contraction resulting ischemia and accumulation of metabolites produce pain, and pressure of fetal bony parts on maternal bone and tissue especially noticed when the fetus presents with occiput posterior.

The psychology of pain in labor

When it comes to labor time, women should stay in the labor room and cannot be with their husbands and families. This can make them feel lonely and fear. Moreover, routine procedures, rules and regulations, equipment and the general environment are unfamiliar and anxiety provoking (Old, et al., 1988: 591). Ignorance in childbirth and misinformation can increase fear. The urgency of the labor situation may produces an atmosphere of tension, which is transmitted to the women. Loud talking and noise create the impression of stress and strain (Myles, 1971: 228). Fear, anxiety, and stress during labor produces tension, which increases the intensity of the pain. This is called the fear-tension-pain cycle (Dick-Reed, 1970; Jimenez, 1983 cited by Cohen, et al., 1991: 630). Women's stress also causes fetal hypoxia by epinephrine-induced vasoconstriction of the uterine vessels (Keller, 1981: 194). Furthermore, the epinephrine-induced result in ineffective uterine contraction, which causes prolonged labor progress.

Behavioral response to labor pain

Women react to the strenuous ordeal or suffering discomfort by changes of behavior and autonomic sign (Keller, 1981: 195; Cohen, et al., 1991: 630).

Changes of behaviors include facial grimacing, muscle tension and grunting with bearing-down efforts, desire for personal contact and touch in early active labor and withdrawal, irritability, and resistance to touch during the transition to active labor. Changes of autonomic signs include increased blood pressure, pulse rate, and respiration. Early in labor, during the latent phase, the women typically can respond to teaching and interventions because contractions have not become intensely pains. The transition to active labor, they may lose the ability to focus attention, have difficulty following instructions. They also may withdraw from social interaction, yet fear being abandoned or left alone even for brief periods (Cohen, et al., 1991: 630).

Unrelieved pain may produce significant mental and physical effects, which on occasion prove harmful to the women. It is quite possible that the experience of severe pain and discomfort can interfere with the maternal infant bonding (Keller, 1981: 194). Besides, it results in women' s negative childbirth experience. Women may express anger toward their infants, viewing the newborns as the cause of the extreme distress experience during childbirth (May, 1994: 602). Should nurses help women get through this crisis evident and cope with a strenuous ordeal by alleviating pain and promoting comfort, they may help them eliminate such harmfulness. According to Subprasert (1998: ๙) women who receive nursing care used nonpharmacological pain relief have perception of childbirth experience more positive than those who receive routine care procedures. There are many methods to relieve pain. However, no one specific method or combination of methods will help every woman (Gorrie, 1994: 366). Thus, the researcher decides to explore which methods nurses provide to laboring women.

A nurse's role in reducing labor pain

The ideal method of pain relief in labor would ensure that: the health of the women is not endangered, there would be no harmful effect on the fetus, and the agent has the ability to abolish or diminish pain and the memory of suffering (Keller, 1981: 189). Auvenshine & Enriquez (1990: 385) state that as begin care for laboring women, nurses should first assess how they are experiencing pain, and what level of pain they are in. According to Kodiath (1986 cited by Scott, 1992: 11), the key to effective pain control is **accurate assessment**. Then, nurses should plan for giving comfort and relieving pain. According to Myles (1971: 226-239), basic principles in the nursing management of labor are **being trusty person** and **being companion, giving adequate information and suggestion**, setting a peaceful atmosphere and **promoting cleanliness and comfort**, and **using pain relief techniques** to distract women from pain. These principles encourage women to cope with apprehension, anxiety, fear as well as pain.

As regards Auvenshine & Enriquez and Myles concepts, nurses' practices in reducing labor pain are divided into 5 categories: assessing labor pain, being trusty companion, providing information and education, helping to cope with pain by using pain control techniques, and promoting general comfort and hygiene.

Assessing labor pain is actions that nurses use to determine how women are experiencing pain. Nurses can assess women's pain by asking them to describe the pain, by observing their behavior and autonomic sign, and by using tools to let women rate their pain level. The women's subjective report is probably the best single indicator of pain. If they say that they in pain, then they probably are (Auvenshine & Enriquez, 1990: 382). Because most laboring women often respond to pain by changing behavior such as facial grimacing or irritability, it is easy for nurses to find out how they are experiencing pain by

observing their behaviors. Some women do not show any behavior although they are experiencing pain. Nurses can use tools to measure pain such as Visual Analogue Scale or Faces Pain Rating Scale.

Being trusty companion is nurses' actions aiming at diminishing women' s fear and loneliness. It has long been know that the personality of nurses plays an important part in influencing the behavior of the laboring women (Myles, 1971: 227). Nurses' approaches should always be friendly, and a kindly welcome makes all the differences to apprehensive women. If nurses convey the impression that they are really interested and are doing their utmost to be helpful, they will have a soothing influence. Furthermore, good human relationships are most essential. Sympathetic understanding and patient kindliness are acceptable to all women in labor (Myles, 1971: 227). Laboring women are sometimes irritable. Some are poorly endowed to endure the discomfort of the first stage of labor, and much tact is needed in handling them. Others are emotionally immature and unable to control their feeling, and in such cases the influence of a calm, patient nurses are invaluable. If nurses exhibit by word and deed their interest in, and concern for the laboring women as a person, women' s anxiety or fear may be reduced and the pain will thereby be relieved. Diers, et at. (1972: 426) find that when nurses treat patients like a human being, they experience relief from pain. Moreover, companionship also is needed in labor time because loneliness breeds fear (Myles, 1971: 228). Nurses should attend on women constantly as well as listen to their problem and explain whatever they do not understand. Nurses also should encourage and assure that they can safely get through this crisis situation. Simkin (1995: 169) states that, nurses' words of encouragement and reassurance and compliments may be as good as a narcotic. Besides, women who scream during labor

do so more from fear than from pain, and nurses should communicate confidence by their calm, competent bearing and kindly actions.

Providing information and education is nurses' actions aiming at decreasing women's apprehension and anxiety. It is essential for the peace of mind of most women that they be kept informed regarding to progress they are making (Myles, 1971: 228). Women respond greatly to being given reasons or explanations, e.g. before examining the cervix, nurses should explain why this is being done and the finding will be more complete because of their relaxing: after the examination, nurses should assure that the baby will or will not be born soon. Moreover, nurses should educate women about the physical and emotional processes of childbirth aiming at replacing misinformation and its associate fear (Simkin, 1995: 169). According to Athaseri, et al. (1990: 72-77) study, women who are provided information could cope with better than those who are not could. Similarly, Subprasert (1998: ง) finds that women who are educated with process of childbirth could cope with pain better than those who are not could.

Helping to cope with pain by using pain control techniques is nurses' action aiming at distracting women to heighten the pain threshold. Nurses can distract women from pain by using relaxation technique, cutaneous stimulation, mental stimulation, and breathing techniques (Gorrie, et al., 1994: 366). It has been known that tension is caused by anxiety but relaxation helps overcome anxiety by relieving tension of the mind as well as of the body (Dick-Read, 1984: 68). Thus, nurses can help laboring women focus on relaxing tense muscles whenever they find out signs of tension. Furthermore, the gate control theory was used to explain the phenomenon of pain and the working of cuneous stimulation. A closed gate results in no pain; an open gate results in pain; and a partially open gate results in less pain. The gate is opened by excitation of small-diameter fibers

that carry pain impulses. These pain signals can be blocked i.e., the gate can be closed to prevent or decrease their transmission to the cortex, by stimulation of large-diameter fibers. Since many cutaneous fibers are large-diameter fibers, stimulation of the skin by rubbing or other means may result in pain relief (Reeder & Martin, 1987: 498: 499). Methods that also stimulate large-diameter fibers are superficial heat and cold, soothing touch and massage, and acupressure techniques (Simkin, 1995: 162-168). According to Subprasert (1998: ง), women who use effleurage technique could cope with pain better than women who do not. Khamis, et al. (1983: 493) find that women become more tolerant to labor pain after applied with heat on the abdominal wall. In addition, mental stimulation techniques such as imagery, focal point, or focusing to music occupy the women's mind and compete with pain stimuli (Gorrie, et al., 1994: 368). This can be explained by the fact that the cells of the brain stem that register an impulse as pain are preoccupied with other stimuli, a pain cannot register (Pillitteri, 1995: 310). Women, then, perceive less pain or no pain. According to Kallaya (1997: abstract) and Subprasert (1998: abstract), music could help women cope with pain. Furthermore, breathing techniques give a different focus to women during contracting blocking the action of pain. Though Limtavong (1987: abstract) finds that using controlled breathing cannot totally alleviate labor pain, the women who use this technique have coping with pain scores higher than those who do not have.

Promoting general comfort and hygiene is actions that nurses use to abolish stimuli causing women in under stress. Nurses can increase women' s comfort level and reduce pain perception by maintaining hygiene. Nurses should remove an additional source of discomfort: wet, dirty or wrinkly sheets. Nurses should refresh women with placing a cool washcloth on their forehead or sponging their face and

neck. Nurses should also help women relieve dry mouths by rinsing their mouths with water or mouthwash, and taking ice chips. It is comforting, when nurses often provide perineal care (Sherwen, et al., 1995: 575). According to Athaseri, et al. (1990: 72-77), promoting general hygiene is effective to help women alleviate pain. Furthermore, positions and movements also give comfort. Nurses should encourage women to find comfortable position and change sides or position regularly. Changing position reduce pressure and constant strain on women' s muscles (Thompson, 1995: 148). Melzack, et al. (1991: 476) find that women in early labor have less pain and are generally more comfortable in a vertical than in a horizontal position. Subprasert (1998: ง) finds that laboring women who are encouraged to move about rate pain scores less than women who are not. In addition, an atmosphere of labor plays an important part in influencing the stress of woman in labor. Loud talking and noise create the impression of stress and strain, which may leave the memory of terrific turmoil and difficulty when the labor was quite normal and straightforward (Myles, 1971: 228). Thus, the atmosphere of labor ward should be as quiet and tranquil as possible.

As mention above, nurses can provide many pain relief methods. Therefore, women are kept away from a strenuous ordeal and suffering event: they can cope with pain appropriately. Nevertheless, nurses should notify an obstetrician whenever they find these methods become less effective. Women, then, receive appropriately pharmacological pain control methods. However, there are many factors affecting on nurses' practice.

Factors that have an effect on nurses' practice

To help women alleviate pain and suffering is an important role of labor nurses. Each nurse approaches to pain control methods differently. There are 4 factors, which are

believed to have an effect on nurses' practice: knowledge in pain management, childbirth experience, working experience in obstetrics, and training on pain management.

Knowledge in pain management is nurses' understanding in pain control or reducing pain methods. Knowledge involves their performance on their practice directly. It is relevant in building up understanding, motivation to practice, and coming up with the ability to practice. Thus, the more nurses are knowledgeable on pain management, the more they perform their practice on pain control appropriately. According to McCaffery & Ferrel, patient care is unlikely to improve if nurses lack of knowledge. Before, nurses perform their practice on pain control in parturition, they have to understand its sources first (Keller, 1981: 190). Furthermore, Auvenshine & Enriquez (1990:387) state that nursing intervention in pain control is based on the nurses' knowledge of childbirth process, pain assessment, pharmacological pain control, and non-pharmacological pain control. As regards Keller and Auvenshine & Enriquez, nurses' knowledge of pain management is divided into 4 categories: causes of labor pain, pain assessment in labor, pharmacological pain control, and non-pharmacological pain control.

Knowledge in causes of labor pain is nurses' understanding in physiology and psychology of pain in childbirth as mentioned above. Along with this knowledge, nurses understand that pain has sensory and affective dimensions.

Knowledge in pain assessment in labor is nurses' understanding in the assessment and measurement of labor pain. It is mentioned in nurses' role on pain assessment-assessing labor pain.

Knowledge in non-pharmacological pain control is nurses' understanding in non-pharmacology for relieving pain methods. It is nurses' role in reducing labor pain as mentioned above. Furthermore, nurses' understanding includes advantages,

limitations and techniques of non-pharmacology. There are several advantages. For example, They are harmless to women and fetuses, do not slow labor, and have no side effects or risk of allergy (Keller, 1981: 189; Gorrie, et al., 1994: 366). However, non-pharmacological pain controls also have limitations, especially as the sole method of pain control. Many women will not achieve satisfactory pain control using these methods alone (Gorrie, et al., 1994: 366).

Knowledge in pharmacological pain control is nurses understanding in medication-method for relieving pain. There are two majors of pharmacological interventions: analgesia and anesthesia. Analgesia is the reduction of pain without loss of consciousness; anesthesia is the loss of sensation, either complete or partial, with or without loss of consciousness (Sherwen, et al., 1995: 577). Analgesia is analgesics and tranquilizers. An analgesic used frequently during labor is meperidine (demorol). The tranquilizers often given are anti-anxiety agents; it alone does not provide analgesia but together with analgesics may provide sedation. In addition, common anesthetic methods used in labor are epidural block. The advantage of pharmacological methods is the perception of pain almost or complete was relieved. However, these methods also have disadvantage. Drugs cannot be re-administered immediately although women still are experiencing pain after have taken any analgesics. In addition, drugs, which are analgesics, have side effect on women and fetuses. Side effects on women include nausea, vomiting, and dizziness. Side effect on fetuses, which is very dangerous, is respiratory depression. Furthermore, epidural block also have side effects. Women may develop a headache if the dura is punctured. Other side effects of epidural anesthesia are maternal hypotension caused by blocking the sympathetic tracts, possible slowing of labor and delivery, and interference with maternal pushing

(Sherwen, et al., 1995: 586). Although a nurses' role in reducing labor pain does not involved pharmacological methods, nurses who are knowledgeable in these methods choose appropriately methods to help women alleviate pain. Nurses who know a variety of methods can select those that are most helpful to women (Gorrie, et al., 1994: 366). According to Khumpang (1996: 84), nurses who are knowledgeable in reducing pain methods provide nursing practice in reducing pain appropriately.

Childbirth experience is nurses' own experience of birth giving. With this experience, nurses also have a painful experience in their lives. It is an important factor that nurses would realize how women are experiencing pain. Nurses would also understand what laboring women need. Literatures report that pain experiences of nurses have an influence on their practice in reducing pain. Dalton (1989: 226) states that pain experiences of nurses have an influence on their pain assessment. Differently, Burokas (1985: 377) finds that nurses' practice on pain management is not influenced by their personal pain experiences.

Working experience in obstetrics is nurses' experience and skills in delivery ward. The more nurses work with laboring women, the more they have skills to care for them. They would provide appropriately nursing care and meet women' s needs. According to Benner (1984: 20-32), the expert nurses, with an enormous background of experience have skills to find out patient' s problem easily and they have abilities to provide appropriately nursing care. Literatures reveal that nurses' working experience has an effect on their assessment and practice in relieving pain. Halfens, et al. (1990:43) state that nursing experience has an effect on their pain assessment; Dalton (1989: 230) states that nurses who are older and report more year in cancer nursing report more performing on pain assessing than those who are younger and report less years. On the

other hand, Khumpang (1996: 86) finds that no relationship are found between neonatal nursing experience and nurses' practice in reducing pain in neonatal intensive care.

Training on pain management is nurses' continuing education participation on pain management. It is an essential factor that nurses gain skills and refresh their knowledge. Thus, nurses have a deep understanding of pain control techniques and abilities to apply those techniques to laboring women correctly. Nurses also provide nursing care to meet women' s needs appropriately. According to Hirunto (1980: 196), knowledge and ability are gained by training. It motivates to practice. The researcher cannot find any study related to training on pain management. However, many studies reveal that training has an effect on job performance. Conway-Turner (1997: 573) finds that after training, midwives in Zimbabwe report a change in the use of sanitation practice, and a heightened understanding of at-risk pregnancies and the need for formal medical intervention. Furthermore, Charoenkul (1997: 89) finds that staff' s training has an effect on health education performance.

In conclusion, a strenuous ordeal results in several negative impacts to women and fetuses: bad impression of childbirth, fetal distress, and hinder of bonding between the women and their babies. Nurses' practices in reducing labor pain are essential: assessing labor pain, being trusty companion, providing information and education, helping to cope with pain by using pain control techniques, and promoting general hygiene and comfort. However, there are 4 factors that have an effect on nurses' practice: knowledge in pain management, childbirth experience, working experience in obstetrics, and training on pain management. The researcher decides to explore how do nurses practise in reducing labor pain and whether or not those 4 factors have an effect on their practice.

CHAPTER III
METHODOLOGY

Research Design

This study was a descriptive research, which explored nurses' practice in reducing labor pain.

Population and Sampling

The population of this study was registered nurses who had at least 1-year experience in delivery units. They all worked at hospitals under the Ministry of University Affairs, hospitals under The Department of Medical Services Ministry of Public Health, hospitals under the B.M.A., hospitals under the Ministry of Defence, and hospitals under the Ministry of Interior. Subjects were selected by using simple random sampling method at least fifty percent of population (N = 394, n = 197) as follows:

Hospital	Number of nurses	Number of subjects	Percentage (%)
Siriraj	71	37	52.1
Ramathibodi	29	15	51.7
Chulalongkorn	57	22	38.6**
Rajavithi	29	15	51.7
Nopparatrajathanee	17	10	58.8
Lerdsin general	10	5	50
Charoen Krung Pracharak	20	10	50
General*	13	7	53.8
REV. Thavesak Jutindharo	7	4	57.1
Nongchok	2	2	100
Vajara*	20	10	50
Lad Krabang	8	5	62.5
Taksin	21	11	52.4
Somdejprapinklao	21	10	47.6**
Bhumibol Adulyadej	22	11	50
Pramongkulklao general	18	9	50
Police general	29	14	48.3**
summary	394	197	50

**General H. is an abbreviation for Bangkok Metropolitan Administration General Hospital and Vajira H. is an abbreviation for Bangkok Metropolitan Administration medical college and Vajira Hospital.*
***Some questionnaires were not returned.*

Setting

The setting of this study was delivery units of Siriraj H., Ramathibodi H., Chulalongkorn H. Rajavithi H., Nopparatrajathanee H., Lerdsin general H., Charoen Krung Pracharak H., General H., REV. Thavesak Jutindharo H., Nongchok H., Vajara H., Lat Krabang H., Taksin H., Somdejprapinklao H., Bhumibol Adulyadej H., Pramongkulklao general H., and Police general H. All subjects were graduated in nursing science. They all worked on 3 shifts at hospitals and their nursing performance was not different. Most studied hospitals were operated under the government except Chulalongkorn hospital and most of them used team-nursing methods to manage the nursing care providing except Charoen Krung Pracharak hospital (used primary care).

Instrumentation

Two questionnaires used in this study were as follows:

1. The nurses' practice in reducing labor pain questionnaire was divided into 2 parts

1.1 *Demographic data questionnaire* included obstetric working experience, childbirth experience, and training on pain management.

1.2 *Nurses' practice in reducing labor pain questionnaire* was developed by the researcher. It was divided into 2 parts.

1.2.1 Part one contained 35 items. It was divided into 5 categories: assessing labor pain (item 1-6), providing information and education (item 7-10), being trusty companion (item 11-20), helping to cope with pain by using pain control techniques (item 21-26), and promoting general comfort and hygiene (item 27-35). The nurses were asked to rate

their frequency of practice by the following scales: always, often, sometime, and never practice with the score ranged from 4 to 1 respectively. The total scores were ranged from 35 - 140. Levels of nurses' practice in reducing labor pain were interpret as follow:

Rang of Score	Mean	Meaning
123-140	3.51-4.00	nurses had very high level of practice in reducing labor pain
88-122	2.51-3.50	nurses had high level of practice in reducing labor pain
53-87	1.51-2.50	nurses had low level of practice in reducing labor pain
35-52	1.00 -1.50	nurses had very low level of practice in reducing labor pain

1.2.2 Part two was multiple choice-questionnaire asking nurses about methods that they provided to laboring women.

2. *Knowledge of pain management questionnaire* also was also developed by the researcher. It was contained 37 items which all were positive statements except the item 24. The scores were ranged from 0 to 37. For the positive statements, the agreement (yes) got score of 1, whereas the disagreement (no) or the uncertainty (doubly) got no score. For the negative statements, the agreement (yes) or the uncertainty (doubly) got no score, whereas the disagreement (no) got score of 1. Levels of nurses' knowledge on pain management were interpreted as follows:

Score	Meaning
≥ 30 (= 80%)	nurses had good knowledge
19-29 (= 51-79 %)	nurses had fair knowledge
≤ 18 (≤ 50%)	nurses had less knowledge

Validity and Reliability

Content validity of nurses' practice in reducing labor pain and knowledge on pain management questionnaires were tested by 6 experts (see Appendix A). Then, the instruments were used in the pilot study of 30 subjects. To determine reliability, the Cronbach's Alpha Coefficient was used for the Nurses' practice in reducing labor pain questionnaire ($r = 0.93$) and the Kuder-Richardson's equation (KR-20) was used for the Knowledge of pain management questionnaire ($r = 0.79$).

Data Collection Procedure

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

1. To obtain permission, the researcher sent introduction letter issued by faculty of Graduate Studies to the Director of 17 hospitals.

2. To select subjects, the researcher introduced herself to the head nurses of delivery units of each hospital and asked for lists of nurses for random sample as mentioned above.

3. Subjects were approached and asked to participate in this study. First of all, nurses were interviewed by the Nurses' practice in reducing labor pain questionnaire. Then, they were interviewed by the Knowledge on pain management questionnaire.

4. The questionnaires were checked for completeness. If any items were not completed, nurses were asked for refilling. Then, all data were statistically analyzed.

Protection of Human Subjects

Before accepting to participate in this study, all subjects were informed about details, and objectives of the study. They were also informed that they had the right to end the participation in this study whenever they needed. The data taken from all nurses would be kept confidentially.

Data Analysis

The data was analyzed by the Statistical Package for Social Science (SPSS) program. The data analysis procedures were as follows:

1. Demographic data and nurses' methods in reducing labor pain were analyzed by in terms of frequency and percentage.

2. Knowledge on pain management was analyzed by calculating means and standard deviation.

3. Nurses' practice in reducing labor pain was analyzed by calculating percentage, means and standard deviation.

4. The practice' s scores of nurses who had different knowledge of pain management, childbirth experience, and training on pain management were compared by using t-test (independent formula)

5. The practice' s scores of nurses who had different working experience in obstetric were compared by using one way analysis of variance and the differentiation between groups was tested by using LSD.

CHAPTER IV

RESULTS

This study was a descriptive research. The objectives were to explore nurses' practice in reducing labor pain and to compare practice of nurses who had different knowledge in pain management, childbirth experience, working experience in obstetrics, and training on pain management. 197 subjects were registered nurses who had at least 1-year experience in delivery units of 17 hospitals in Bangkok. Instruments were the Nurses' practice in reducing labor pain and the Knowledge in pain management questionnaires. The data was analyzed by using t-test and one way analysis of variance.

The results are presented in two parts as follows:

1. Descriptive statistics of demographic of nurses (Table 1).
2. Descriptive statistics of nurses' practice and knowledge in pain management (Table 2-10).

Part I Descriptive statistics of demographic of nurses.

Table 1 Frequency and percentage of nurses classified by age, education, income, years after graduated, obstetrics working experience, marital status, childbirth experience, and training on pain management (n = 197).

Characteristics	Frequency	Percentage (%)
Age (years)		
20-25	34	17.3
26-30	54	27.4
31-35	37	18.8
≥36	72	36.5
Education		
Bachelor degree	186	94.4
Master degree	11	5.6
Income per month (baht)		
≤10,000	73	37.1
10,001-15,000	70	35.5
≥15,001	54	27.4
Years after graduated from bachelor degree in nursing (years)		
1-5	71	36.0
6-10	48	24.4
11-15	33	16.8
≥16	45	22.9
Obstetrics working experience (years)		
1-5	74	37.6
6-10	53	26.9
11-15	33	16.8
≥16	37	18.8
Training on pain management		
Have never been trained	133	67.5
Have been trained	64	32.5

Table 1 (continued)

Characteristics	Frequency	Percentage (%)
Marital status		
Single	133	67.5
Married	60	30.5
Divorced / Separated	4	2.0
Childbirth experience		
Have no delivery experience	150	76.1
Have delivery experience	47	23.9
Normal delivery	19	40.4
Abnormal delivery	28	59.6
C/S	22	78.6
F/E	3	10.7
V/E	3	10.7

Table 1 shows that 36.5 % of nurses are above 36 year-old and 27.4 % are between 26-30 year-old. Ninety-four percent of nurses have a bachelor degree. Their incomes (37.1 %) are less than 10,000 bahts and 35.5 % are 10,001-15,000 bahts per month. Years after graduated in general nursing (36.0 %) are between 1 to 5 years and 24.4 % are between 6 to 10 years. The researcher finds that some nurses just have graduated in nursing science although they have worked in obstetrics nursing for many years. Thirty-seven percents of nurses have worked for 1-5 years in obstetrics nursing and 26.9 % have worked for 6-10 years. The majority of nurses (67.5) are single whereas 76.1 % have no delivery experience. Sixty-seven of nurses have never been trained on pain management.

Part II Descriptive statistics of nurse' practice in reducing labor pain and knowledge in pain management

Table 2 Percentage of nurses, mean, standard deviation, and level of scores of nurses' practice in reducing labor pain classified by total and sub scales (n = 197)

level and range of scores / practice	very high (123-140) (%)	high (88-122) (%)	low (53-87) (%)	very low (35-52) (%)	$\bar{x}$	S.D.	level of practice
Total Scores	**20.3**	**78.7**	**1.0**	**0**	**3.20**	**0.33**	**high**
Assessing labor pain	4.1	88.8	7.1	0	3.17	0.35	high
Being trusty companion	42.6	57.4	0	0	3.42	0.38	high
Providing information	32.0	55.8	12.2	0	3.30	0.51	high
Helping to cope with pain	11.2	67.0	21.8	0	2.99	0.47	high
Promoting general comfort	18.3	74.1	7.6	0	3.06	0.43	high

As shown in Table 2, the total and sub scales mean scores of nurses' practice in reducing labor pain are high. More than 90.0% of nurses have very high and high level of practice in three sub scales as follows: being trusty companion (100.0 %), assessing labor pain (92.0 %), and promoting general comfort and hygiene (92.4 %).

Table 3 percentage, mean, standard deviation, and level of nurses' practice in reducing labor pain of nurses classified by sub scales and items (n=197)

Practice	always	often	sometime	never	$\bar{x}$	S.D.	level of practice
Assessing labor pain					**3.17**	**0.35**	**high**
Observe from movement…	70.6	28.9	0.5	0	3.70	0.47	very high
Observe from voice……	64.5	32.5	3.0	0	3.61	0.55	very high
Observe from facial expression..	61.4	33.5	5.1	0	3.56	0.59	very high
Observe severity of contraction..	60.4	29.4	9.6	0.5	3.50	0.69	high
Ask women to describe pain..	48.2	44.7	7.1	0	3.41	0.62	high
Use tools to ask … to rate pain..	2.5	6.1	5.1	86.3	1.25	0.68	very low
Being trusty companion					**3.42**	**0.38**	**high**
Call ..name appropriately	74.1	25.4	0.5	0	3.74	0.45	very high
Provide nursing.. with admiration..	56.3	43.7	0	0	3.56	0.50	very high
Be friendly….	56.3	41.6	2.0	0	3.54	0.54	very high
Talk.with warm voice, kindness..	55.3	44.2	0.5	0	3.55	0.51	very high
Encourage and assure.	50.3	47.2	2.0	0.5	3.47	0.57	high
Give eye-contact	45.7	50.3	4.1	0	3.42	0.57	high
Give chances to ask problems	45.2	49.7	5.1	0	3.40	0.59	high
Listen to women' s problem	34.0	60.4	5.9	0	3.28	0.56	high
Help women when ask for ..	33.0	66.0	1.0	0	3.32	0.49	high
Be with women.. not left.. alone…	19.3	56.3	24.4	0	2.95	0.66	high
Providing information					**3.30**	**0.51**	**high**
Teach to use breathing technique	69.0	27.9	2.5	0.5	3.65	0.56	very high
Inform results of checking…	54.3	35.5	9.1	1.0	3.43	0.70	high
Inform progress of labor..	35.0	52.3	12.7	0	3.22	0.66	high
Teach to use effleurage	31.5	36.5	23.4	8.6	2.91	0.94	high

Table 3 (continued)

Practice	always	often	sometime	never	$\bar{x}$	S.D.	level of practice
Helping to cope with pain					**2.99**	**0.47**	**high**
Encourage..use breathing..	64.5	34.0	1.5	0	3.63	0.51	very high
Give.. praise or compliment	45.7	46.2	8.1	0	3.38	0.63	high
Encourage..use..effleurage	27.4	36.5	26.9	9.1	2.82	0.94	high
Encourage..change..position	20.8	54.3	22.3	2.5	2.93	0.73	high
Touch women hands..	20.8	47.2	31.5	0.5	2.88	0.73	high
Massage..hands..legs..back..	7.6	27.4	53.3	11.7	2.31	0.78	low
Promoting general comfort					**3.06**	**0.43**	**high**
Give..perineal care...	54.8	35.5	9.6	0	3.45	0.67	high
Give comfort..adjust. temperature..	38.6	56.3	5.1	0	3.34	0.57	high
Help..find..comfort position..	32.0	55.3	12.7	0	3.19	0.64	high
Towel..sweaty..change..wet cloth.	25.9	48.7	24.9	0.5	3.00	0.73	high
Set ..peaceful..atmosphere..	24.9	50.3	24.4	0.5	2.99	0.72	high
Give cleanliness..body..mouth...	21.8	57.4	19.8	1.0	3.00	0.68	high
Encourage..empty bladder.2 hr....	20.3	53.3	24.4	2.0	2.92	0.72	high
Do not talk loudly...	19.3	64.0	15.7	1.0	3.02	0.63	high
Give..water. ..chips	11.7	46.7	37.6	4.1	2.66	0.74	high

As shown in Table 3, each sub scale is described as follows:

For assessing labor pain sub scale, more than 90 % of nurses select the answers "always" and "often" of items: observe from women's movements behaviors such as restlessness (99.5 %), observe from women's voices such as moaning (97.0 %), observe from women's facial expression such as facial grimacing (94.9 %), and ask women to describe their pain directly (92.9 %).

For being trusty companion sub scale, more than 99 % of nurses select the answers "always" and "often" of items: provide nursing care with a warm

and admirable manner (100.0 %), call women's names appropriately (99.5 %), and talk to women with a politely manner and warm voice (99.5). However, some nurses (24.4 %) select the answer "sometime" of the item: be with women and do not left them being alone during contractions.

For providing information and education sub scale, more than 80 % of nurses select the answers "always" and "often" of items: teach women to use breathing technique (96.9 %), inform women the results of any checking such as FHS or PV/PR (89.8 %), and inform women the process of labor such as the delivery estimated time (87.3 %). It is interesting that some nurses (31.0 %) select the answer "sometime" and "never" of the item: teach women to use effleurage.

For helping to cope with pain by using pain control techniques sub scale, more than 90 % of nurses select the answer "always" and "often" of items: encourage women to use breathing technique (98.5 %), and give women a praise when they could cope with pain appropriately (91.9 %). It is interesting that 65 % of nurses select the answers "sometime" and "never" of the item: massage women's hands, legs, or back. Moreover, more than 20 % of nurses also select such answers of items: encourage women to use effleurage (36.0 %), touch or hold women's hands during contractions (32.0 %), and encourage women to change positions regularly and do not let women stay with one position for along time (24.8 %).

For promoting general comfort and hygiene sub scale, more than 80 % of nurses select the answers "always" and "often" of items: give women comfort by adjusting temperature which is not too hot or too cool (94.9 %), give women perineal care when they become wet or soiled (90.3 %), and help women find a comfort position (87.3 %). It is interesting that 41.7 % of nurses select the answer "sometime"

and "never" of the item: give women water chips. In addition, more than 20 % of nurses select "sometime" and "never" of items: encourage women to empty bladder every 2 hours. (26.4 %), towel women's faces or bodies when they become sweated and change their wet cloths (25.4 %). Set labor wards in a peaceful atmosphere which is without an impulse of rushing about (24.9 %), and give women's bodies and mouths cleanliness (20.8).

Table 4 Percentage of nurses classified by pain relief methods (n = 197)

Pain relief	frequency	percentage (%)
Did not provide pain relief	0	0
Provide pain relief	197	100.0
Methods (can choose more than one item)		
Suggest to use breathing techniques	194	98
Notify obstetrician for analgesic administering	182	92.4
Suggest to use effleurage	134	68.0
Teach to use muscle relaxation	99	50.3
Suggest to use point focusing techniques	46	23.4
Using music such as let women listen to music	21	10.7
Using imagery techniques	19	9.6
Encouraging and assuring	15	7.6
Using hot compression	14	7.1
Help women find comfort positions	12	6.1
Inform childbirth process	8	4.1
Massage women' back or press to pain areas	6	3.1
Using cold compression	5	2.5

Table 4 shows that all nurses provide pain relief methods (100.0 %) to women. More than 90 % of nurses suggest women to use breathing technique (98.5 %) and 92.4 % notify obstetricians for analgesic administering.

Table 5 Percentage, mean, and standard deviation of knowledge in pain management scores of nurses classified by total and sub scales (n=197)

Knowledge	$\bar{x}$	S.D.
Total (37 items)	**28.97**	**4.64**
Causes of labor pain (10 items)	7.40	1.93
Pain assessment (10 items)	8.60	1.50
Pharmacological pain control (8 items)	5.45	1.28
Non-pharmacological pain control (9 items)	7.53	1.83

Table 5 shows that a nurses' mean score in knowledge in pain management is 28.97 (S.D. 4.64). Furthermore, nurses' mean scores in cause of labor pain sub scale, and pain assessment sub scale, pharmacological pain control sub scale, and non-pharmacological pain control sub scale are 7.40, 8.60, 5.45, and 7.53 respectively.

Table 6 Percentage of nurses classified by level of knowledge in pain management (n=197)

Level of knowledge	frequency	percentage (%)
Less knowledge (≤ 50 %)	3	1.52
Fair knowledge (51-79 %)	97	49.24
Good knowledge (≥ 80 %)	97	49.24

Table 6 shows that percentage of nurses who have good knowledge (49.24 %) is as equal as those who have fair knowledge (49.24 %).

Table 7 A comparison of nurses' practice in reducing labor pain mean scores of nurses who are different in childbirth experience, training on pain management, and knowledge in pain management by using t-test (n = 197)

Practice / Variances	n	$\bar{x}$	S.D.	t
Childbirth experience				0.118^{ns}
Have no experience	150	3.20	0.33	
Have experience	47	3.19	0.34	
Training on pain management				-2.901^{**}
Have been trained	64	3.29	0.33	
Do not have been trained	133	3.15	0.32	
Knowledge in pain management				-3.035^{**}
Good knowledge	97	3.27	0.32	
Less-fair knowledge	100	3.13	0.33	

ns = non significant, **p < .01

Table 7 shows that there is no significant difference in nurses' practice in reducing labor pain between nurses who have childbirth experience and those who have not (p < .05). Furthermore, nurses who have been trained on pain management practise more in reducing labor pain than those who have not with a statistical significance (p < .01)

At the beginning, the researcher aims at comparing practice of nurses who are different in knowledge in pain management divided into 3 level. Unfortunately, there are only 3 subjects in less knowledge level. Thus, less knowledge level and fair knowledge

level are grouped into one level called less knowledge level. However, nurses who have good knowledge in pain management practise more in reducing labor pain significantly than those who have less knowledge ($p < .01$).

Table 8 Mean and standard deviation of nurses' practice in reducing labor pain scores of nurses classified by obstetrics working experience (n= 197)

Working experience (years) \ Practice	n	$\bar{x}$	S.D.
1-5	74	3.21	0.32
6-10	53	3.23	0.32
11-15	33	3.05	0.33
≥ 16	37	3.26	0.35

Table 8 shows that nurses who are in above 16 years working experience group have the highest practice in reducing labor pain mean score ($\bar{x}$ = 3.26, S.D. 0.35). The second is nurses who are in 6-10 years group ($\bar{x}$ = 3.23, S.D. 0.32). It is interesting that nurses who are in 11-15 years group have the lowest mean score ($\bar{x}$ = 3.05, S.D. 0.33).

Table 9 A comparison of practice in reducing labor pain mean scores of nurses who are different in obstetrics working experience by using one way ANOVA (n = 197)

	SS	df	MS	F	(p- valve)
Between Groups	0.897	3	0.299	2.784	.042
Within Groups	20.736	193	0.107		
Tatal	21.633	196			

Table 9 shows that nurses who are different in obstetrics working experience practise in reducing labor pain differently with a statistic significant of $p < .05$.

Table10 A comparison of nurses' practice in reducing labor pain mean scores between groups of working experience by using LSD

Working experience (years)	1-5 $\bar{x} = 3.21$	6-10 $\bar{x} = 3.22$	11-15 $\bar{x} = 3.05$	≥ 16 $\bar{x} = 3.26$
1 – 5	0	0.01	0.16*	0.04
6 – 10	-	0	0.17*	0.03
11 – 15	-	-	0	0.21**

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

Table 10 shows that nurses who are in 1-5 and 6-10 years working experience groups practise more in reducing labor pain significantly than those who are in 11-15 years group ($p < .05$). Furthermore, nurses who were in above 16 years practice more in reducing labor pain than those who are in 11-15 years group with a statistic significant of $p < .01$.

CHAPTER V

DISCUSSION

This study was a descriptive research which aimed at exploring nurses' practice in reducing labor pain and comparing practice in reducing labor pain of nurses who had different knowledge in pain management, childbirth experience, working experience in obstetrics, and training on pain management. At least 50 % of all registered nurses were selected by using simple random sampling. 197 subjects were taken from registered nurses, who had at least 1-year experience in delivery units and worked at 17 hospitals. These hospitals were operated under the Ministry of University Affairs, The Department of Medical Services Ministry of Public Health, the B.M.A., the Ministry of Defence, and the Ministry of Interior. The instruments used for this study were the Nurses' practice in reducing labor pain and the Knowledge in pain management questionnaires. Data was analyzed by using SPSS. The t-test and one way ANOVA were used to compare practice in reducing labor pain of nurses who had different knowledge, childbirth experience, obstetric working experience, and training on pain management.

The findings are discussed based on the following objectives and hypotheses:

Objective I To explore nurses' practice in reducing labor pain in delivery units

The result shows that 99 % of nurses have practice in reducing labor pain mean score in high level (Table 2). It means nurses often to always practise

in reducing labor pain to laboring women. This result can be explained by the following reasons. First of all, most nurses have experiences in providing nursing care to laboring women. It can be seen that 62.4 % of nurses (Table 1) have worked in delivery units for more than 5 years. In addition, all subjects are professional. They have got midwifery certificates indicated that they are knowledgeable and have skills to provide nursing care to laboring women effectively. Furthermore, most nurses work at governmental hospitals where medical and nursing students study from (15 of 17 hospitals). Nurses usually take responsibility to instruct nursing students in how to work with and take care of them during labor time. Nurses, who practise in reducing labor pain, are good examples for nursing students. Furthermore, it is an independent role for nurses to provide practice in reducing labor pain. Nurses could provide such nursing care without orders from any obstetrician. According to Abrahim (1993: 17), nursing practice or nursing care is a nurses' independent role. Thus, this study finds that nurses' practice in reducing labor pain is in high level. This is consistent with a study from Khumpang (1996: 81-82) which finds that nurses mostly practice in reducing pain in infant patients. It is also consistent with a study from Poomnikom (2000: 55) which finds that nurses' practice in pain control in postoperative patients is in good level. Each sub scale can be discussed in detail as follows:

1. **Assessing labor pain sub scale**. The findings shows that nurses' assessment in women's pain is in high level (Table 2). Considering nurses' practice in each item (Table 3), 70.6 % of nurses are found that they always practise in observing from women's movement such as restlessness, 64.5 % practise in observing from women's voice such as moaning, and 61.4 % practise in observing from women's facial expression such as facial grimacing. These findings show that nurses usually assess women's pain by

observing their behaviors. It can be described by the fact that assessing pain by observing behaviors is easy, convenient, valid, and time saved. According to Auvenshine & Enrinquez (1990: 387), women's behaviors provide important information which nurses can utilize in their assessment. This finding is similar to Khumpang' s (1996: 73) which is found that most nurses assess infant's pain by observing their behaviors.

However, the finding reveals that 86.3 % of nurses have never used assessment tools such as Visual Analogue Scale or Faces Pain Rating Scale to ask women to rate their pain level (Table 3). It can be explained by the fact that nurses are not yet interested in using such tools. Using such tools, which are not similar to using observing behaviors, may not be easy and convenient for nurses. Besides, some nurses do not have an acquaintance with assessment tools: they ask the researcher that " what is assessment tools". Some nurses do not believe in the validity of such tools. Furthermore, there is no any assessment tools in delivery units. Therefore, most nurses have never used such assessment tools. This finding is similar to the finding of Soonsawad (1997: 83) which reveals that some nurses have never used assessment tools to get information from postoperative children and the finding of Poomnikom (2000: 49) which finds that nurses use less assessment tools for assessing pain of postoperative patients.

2. **Being trusty companion sub scale.** The finding reveals that nurses practise in being trusty companion in high level (Table 2). Considering the practice in each item, from the study, it is found that 74.1 % of nurses always practise in calling women's names in appropriate way, and 99.0 % often to always practise in providing nursing care with warmth and admiration, 94.9 % practise in being friendly, 99.5 %

practise in talking to women politely and gently, 97.5 % practise in encouraging and assuring during contraction (Table 3). It shows that nurses usually convey the impression that they are interested in women. Nurses are friendly and they also encourage, and give women praise or compliment. This can be explained that when women are experiencing pain, they would respond to pain. Reactions that are common to them include restlessness, crying, facial grimacing, and desire for personal contact and touch. Nurses who spend time after time approach women to check fetus health and examine the progress of labor would notice those reactions. They realize that how women in labor are experiencing the pain and how suffer they are. Therefore, nurses approach those women by being friendly and kind aiming at calming them. According to Myles, (1971: 227), nurses' approach such as being friendly or kind make laboring women feel warmth. When women are conveyed by the nurses' impression that they are really in nurses' interest and nurses are doing their utmost to be helpful, they would trust in nurses thereby their stress would be decreased as well as pain also is relieved. Hence, nurses always practise in reducing labor pain in being trusty companion sub scale.

However, from this study, it is also found that 24.4 % of nurses once or twice practise in being with women and do not left them being alone. As mentioned above, all subjects worked at hospitals, which are studying fields. Medical and nursing students usually attend on women by their bedsides. Thus, nurses notice that women have got companions. Besides, nurses play as advisors who instruct student in how to care for laboring women. Furthermore, most hospitals use team-nursing method except Charoen Krung Pracharak hospital which use primary nursing. Because of team nursing method, one nurse is responsible to many women. She has to establish the women's round time

after time. Therefore, nurses do not have much time to be with women as a companion during contraction. This finding is similar to Siriburanapanont's (1997: 68) finding which shows that nurses once or twice practise in being with women and do not left them alone during contraction.

3. **Proving information and education sub scale.** The finding shows that nurse provide women information and education in high level (Table 2). Considering the practice in each item, the finding reveals 69.0 % of nurses always practise in teaching women to use breathing technique during contraction and 89.8 % often to always practise in giving information about the results of any checking such as FHR, PV/PR, and 87.3 % practise in giving information about the progress of labor (Table 3). It means that nurses always give information to women. It can be explained that what women need in labor time are information of any checking and progress of labor and they always ask for. Such information makes women realize that where they are in the stage of labor or how their babies are thereby anxiety and fear are decreased. According to Myles (1971: 228), women who are informed the progress of their labor, would experience less stress and reduce their anxiety. In addition, nurses commonly practice teaching women to use breathing technique. This technique is easy and takes a short time. It also gives women another focusing point. According to Gorrie, et al. (1994: 368), nurses should give women another focusing point by teaching them to use breathing technique. With these reasons, nurses always give women information and teach them to use breathing technique. Similarly, Siriburanapanont (1997: 52) also finds that nurses' practice in giving women information about the progress of labor and teaching them to use breathing technique is in much level.

However, the finding shows that 31.0 % of nurses once or twice to never

practise in teaching women to use effleurage technique during contraction. It is interesting that some nurses have asked the researcher that "is it true that effleurage can alleviate pain?" This shows that nurses lack of knowledge in the effect of effleurage. They do not know that effleurage is one of pain relief methods. Therefore, some nurses hardly teach women to use effleurage to help them alleviate pain.

4. **Helping to cope with pain by using pain control techniques**. From this study, it is found that nurses help women cope with pain in high level (Table 2). Considering the practice in each item , the findings reveals that 64.5 % of nurses always practise in encouraging women to use breathing technique and 91.9 % often to always in giving women praise or compliments when they could cope with pain(Table 3). As mentioned, nurses usually teach women to use breathing technique. It is a peace of mind when women focus on breathing. Lagewig, et al. (1994: 431) state that women who control breathing would increase their pain threshold, permit relaxation, and enhance their ability to cope with pain. In addition, giving praise is easy for nurses to do. It is the best encouragement (Simkin, 1995: 169). With these reasons, most nurses encourage women to use breathing technique and give women praise or compliments.

It is interesting that 53.3 % of nurses practise once or twice in massaging women's hands, legs, and backs and 31.5 % in touching or holding women's hands during contraction. It can be explained by the fact that these practices take time to provide at least 10-15 minutes per person. According to Saltenis' controlled study of touch (Saltenis, 1962 cited by Simkin, 1995: 168), women would cope with pain appropriately when they are received a high degree of physical contact from the nurse such as hand holding, stroking brow or shoulder, and patting the back for three contractions. In addition, as mentioned above most nurses' assignment and

responsibility method is team nursing. One nurse has to provide care for many women so they do not get much time to massage their hands, legs, and backs. This finding is similar to Siriburanapanont's which states that nurses practice less in massaging women's backs. The reason that some nurses do not touch or hold women's hands is that they are afraid of getting pain and bruise. During severe contraction, women cannot help pinching or squeezing nurses' hands with the result that nurses got pain and bruise. Furthermore, the finding shows that 26.9 % of nurses practise once or twice in encouraging women to use effleurage. It can be explained by the fact that effleurage which stimulate the large nerve fibers is effective only at the beginning of the labor. As mentioned above, some nurses do not know that effleurage can assist women feel painless. With these reasons, the study is found that some nurses encourage women to use effleurage a few times. Additionally, the finding also shows that 22.3 % of nurses practise once or twice in encouraging women to change position regularly and do not stay with one position for a long time. Most nurses usually let women lie on their left side or back because nurses can check FHR or contractions easily. Some nurses tell the researcher that they must let women lie on their left side otherwise fetal distress may occur. Therefore, some nurses encourage women to change position a few times. According to Leifer (1999: 171), changing position relieves muscle fatigue and strain and decrease constant pressure on one area of the women's body. In addition, changing position promotes normal mechanism of labor and enhance the progress of labor (Leifer, 1999: 171; Simkin, 1995: 162).

5. **Promoting general comfort and hygiene**. From the study, it is found that nurses promote general comfort and hygiene to women in high level (Table 2). Considering the practice in each item, the finding shows that 90.3 % of nurse practise

often to always in giving perineal care when women become wet and soiled (Table 3). It can be explained that women usually become wet or soiled with amniotic fluid or bloody show during labor period. Nurses can notice that women are wet or soiled when they approach to give women a vaginal examination, then they always give women a perineal care. According to Kenner & MacLaren (1993: 217-218), cleaning vulva or changing pads increase the women's comfort level. The finding is similar to Siriburanapanont's (1997: 68) which found that nurses practise in giving women a perineal care in much level. In addition, the finding also mentions that 94.9 % of nurses practise often to always in giving women comfort by adjusting temperature, which is not too cool or too hot. It can be explained that all studied hospitals have air conditioners. Nurses can easily adjust temperature whenever women need.

However, the finding shows that 37.6 % of nurses practise once or twice in giving women water chips. Some nurses tell the researcher that to prevent aspiration, women should have nothing per oral when labor begins. In practice of Cheek & Gutshe (1993: 410), women in labor with a functioning epidural block are allowed ice chips and limited sips of clear liquids. After 15 years and more than 8000 cesarean sections, they have not had an aspiration. Therefore, women who are in labor can take water or ice chips especially those who have no risk of needing a cesarean delivery. Furthermore, the finding shows that 24.9 % of nurses practise once or twice in rubbing women with towel when they become sweaty and changing their wet cloths and 19.8 % in giving cleanliness to women's body and mouth. Some nurses inform the researcher that they assign this practice to practical nurses. As mentioned above, there are nursing students who care for each woman by their bedsides. They provide such practice to their women they are assigned for. Therefore, nurses hardly practise in rubbing women

with towel when they become sweaty and changing their wet cloths, and giving cleanliness to women's body and mouth. This finding is similar to Siriburanapanont's (1997: 68) which cliams that nurses' practice in giving cleanliness to women's mouth is the least. In addition, the finding also shows that 24.4 % of nurses practise once or twice in encouraging women to empty their bladder every 2 hours. Some nurses tell the researcher that the treatment of their hospitals would encourage women to empty their bladder every 4 hours. However, Ladewig, et al.(1994: 429) state that the women should be encouraged to empty their bladder every 2-3 hours whenever labor begin. An empty bladder causes an effective uterine contraction which also enhance the progress of labor. Moreover, the finding shows that 24.4 % of nurses practise once or twice in setting a peaceful atmosphere without an impulse of rushing about. It can be explained by the fact that most studied delivery rooms are not private rooms, but are through rooms. Each bed has side walls shared with others' beds. The labor staff can walk through each room to approach the women. As mentioned above, most delivery units are studied fields. There are 3-30 persons such as medical students, nursing students, and practical nursing students who work in delivery units a day. In addition, sometimes there are situation attempting at resuscitation for women and newborns' lives. Therefore, it seems to be crowded and it cannot help being an impulse of rushing about in labor wards.

Objective II To compare practice in reducing labor pain of nurses who have different knowledge in pain management, childbirth experience, obstetrics working experience, and training on management of pain in labor.

Hypotheses 1 Nurses who are more knowledgeable in pain management would practise more in reducing labor pain than those who are less knowledgeable.

From the study, it is found that nurses who have good knowledge practise more in reducing labor pain than those who have less knowledge with a statistical significant of $p < .01$. It means that nurses who are good knowledgeable would practise more in reducing labor pain than those who are less knowledgeable. It can be explained by the fact that nurses who are knowledgeable in the cause of pain and severity of pain that women are experiencing, can select techniques or new methods to help women alleviate pain appropriately. On the other hand, nurses who are less knowledgeable cannot understand how do women experience the pain. They do not know which methods could help women to alleviate pain. According to McCaffery & Ferrell (1997: 184), knowledge is the first step for nurses to improve patient care. In the absence of correct information, patient care is unlikely to improve. Lowe (1996: 82) states that an understanding of labor pain provides the basis of a women-centered approach to labor pain management. Therefore, nurses who are knowledgeable in pain management practise more in reducing labor pain than those who are less knowledgeable. This finding is similar to Khumpang's (1996: 84) which mentions that nurses' knowledge in pain relief has positive relationship with their practice in reducing procedural neonatal pain. The finding is also similar to the finding of Hamers, et al. (1994: 875) which claim that knowledge in the effects of pain-relieving interventions have an effect on nurses' practice in reducing pain.

Hypotheses 2 Nurses who have much working experience in obstetrics nursing would practise more in reducing labor pain than those who have less .

From this study, it is found finds that nurses who are different in obstetrics working experience practise in reducing labor pain differently with a statistical significant of $p < .05$. It means that nurses who have different obstetrics working experience would practise in reducing labor pain differently. When it comes to the comparison between nurses' working experience groups, there are 3-pair of groups which each pair-group is significantly different. It is found that, nurses who are in above 16 years working experience group practise more in reducing labor pain than those in 11-15 years group with a statistical significant of $p < .01$. It means that nurses who have worked for more than 16 years would practise more in reducing labor pain than those who have worked for 11-15 years. It can be explained by the fact that the more obstetrics working experience the nurses have, the more knowledge they have deeply in caring laboring women. They also have skills and abilities to provide practice to help women in order to alleviate their pain. Therefore, nurses who have worked for more than 16 years practise more in reducing labor pain than those who have worked for 11-15 years. According to Benner (1984: 20-32), nursing practice of nurses who have more clinical working experience is better than those of nurses who have less. This finding is similar to the finding of Halfen, et al. (1990: 43) which shows that the ability in pain assessment of the third and fourth-year nursing students and registered nurses is better than that of the first-year nursing students. Similarly, Chatrung (1997: 59) finds that working experience has positive correlation with nurses' practice in infection control.

However, these results support the hypothesis partially. It is found that nurses who are in 1-5 and 6-10 years working experience groups practise more in reducing labor pain than who are in 11-15 years group with a statistical significant of $p < .05$. It means that nurses who have worked in obstetrics wards for 1-10 years would practise more in reducing labor pain than those who have worked for 11-15 years. It can be explained by the fact that nurses who are in 1-5 and 6-10 years groups have been taught about childbirth preparation and pain management. During the past decade in Thailand, nursing instructors who graduated from abroad established a new curriculum. They advise and teach nursing students about childbirth preparation and pain management. Therefore, nurses who have working experience less than 10 years are those who graduate from such curriculum. They, therefore, have abilities and skills to help women to alleviate pain. Furthermore, it can be explained by the fact that nurses who are in 11-15 years group usually play as leader in nursing team. They take responsibility to complete women's charts. They may be busy with physician's orders or treatments. Thus, they do not get much time to provide care closely for laboring women as the team members. However, this result may be explained by the fact that nurses who have worked for a long times become desensitized to women's suffering after repeated exposure to the pain (Marson cited by Molzahn & Northcott, 1989: 137). With these reasons, nurses who have more working experience practise less in reducing labor pain than those who have less working experience. It is interesting that the knowledge in pain management mean score of nurses who have worked for 11-15 years is less than those of nurses who have worked for 1-10 years (Table 11). Furthermore, it is found that percentage in being trained on pain management of 11-15 years nurses is also less than that of 1-10 years nurses (Table 12). This research finds

that both of knowledge and training on pain management have an effect on nurses' practice. Hence it seem to be possible that nurses who have more working experience, less knowledgeable, and never been trained would practise less in reducing labor pain than those who have less working experience, more knowledgeable, and been trained. This finding is similar to the finding of Dyer, et al.(1972: 303) which shows that nurses who are younger and report less years in working provide nursing practice more than those who are older and report more years in working.

Hypotheses 3 Nurses who have childbirth experience would practise more in reducing labor pain than those who have not.

From the study, it is found that there is no significantly different in practice on reducing labor pain of nurses who have different childbirth experience ($p > .05$). It means that the practice of nurses who have childbirth experience is similar to the practice in reducing labor pain of those who have not. This result does not support the hypothesis because all nurses including those who have and do not have childbirth experience are professional nurses. They all have got midwifery certificates indicated that they are knowledgeable and have skills to provide nursing care to laboring women effectively. Therefore, there is no difference in practice in reducing labor pain of nurses who have different childbirth experience. Moreover, 78.6 % of nurses state that they have cesarean delivery experience. it seem to be possible that they may not experience labor pain. They including those who do not have childbirth experience may not understand and realize how labor pain is. With these reasons, the finding does not show any difference of practice in reducing labor pain between nurses who have childbirth experience and those who do not have childbirth experience.

Hypotheses 4 Nurses who have been trained on pain management would practise more in reducing labor pain than those who do not have been trained.

From the study, it is found that nurses who have been trained on pain management practise more in reducing labor pain than those who do not have been trained with a statistical significant of $p < .01$. It means that nurses who have been trained on pain management would practise more in reducing labor pain than those who do not have. It can be explained by the fact that nurses who have been trained on pain management would receive new knowledge in pain relief. They would get skills to provide practice in reducing labor pain. They also have abilities to select new methods or techniques to help women to alleviate the pain. According to Hirunto (1982: 196), training increases person's knowledge and ability to job performance. Therefore, nurses who have been trained on pain management practise more in reducing labor pain than those who have not. This finding is similar to Conway-Turners' (1997: 573) which claims that training provides midwives in Zimbabwe in gaining knowledge and improving their nursing performances. Similarly, Charoenkul (1997: 89) finds that staff's training has an effect on their health education performances.

CHAPTER VI

CONCLUSION

Summary of the Study

This study was a descriptive research which aimed at exploring nurses' practice in reducing labor pain and comparing practice of nurses who had different knowledge in pain management, childbirth experience, working experience in obstetrics, and training on pain management. Registered nurses who had at least 1- year experience in delivery units were selected at least 50 % of all labor nurses by using simple random sampling method. Subjects were 197 nurses and they worked at 17 hospitals which were operated under the Ministry of University Affairs, The Department of Medical Services Ministry of Public Health, the B.M.A., the Ministry of Defence, and the Ministry of Interior in Bangkok. Instruments were the Nurses' practice in reducing labor pain and the Knowledge in pain management questionnaires, which the reliabilities were 0.93 and 0.79 respectively. Data was analyzed by using SPSS. Scores of nurses' practice in reducing labor pain and knowledge in pain management were presented in term of percentage, mean, and standard deviation. T-test was used to differentiate practice in reducing labor pain mean scores of nurses who had different knowledge in pain management, childbirth experience, and training on pain management whereas one way ANOVA was used to compare such mean score of nurses who had different obstetrics working experience.

The findings are summarized as follows:

1. Most of nurses (20.3 % and 78.7 % respectively) are in very high and high level of practice in reducing labor pain.

2. Number of nurses who have good knowledge is as equal as number of those who have fair knowledge (49.24 %). When it comes to the comparison, nurses who have good knowledge practise more in reducing labor pain than those who have less knowledge with a statistical significant of $p < .01$.

3. Nurses who are in 11 to 15 years working experience group practise less in reducing labor pain than those who are in 1-5 years, 6-10 years, and above 16 group with a statistical significant of $p < .05, .05, .01$ respectively.

4. Nurses who have been trained on pain management practise more in reducing labor pain than those who have not with a statistical significant of $p < .01$.

5. Nurses who have childbirth experience do not practise in reducing labor pain differently from those who have not ($p > .05$).

Implications and Recommendations

Implication and Application of Research Findings

This study finds that good knowledgeable nurses would practise more in reducing labor pain than less knowledgeable ones. Furthermore, nurses who have been trained on pain management would also practise more in reducing labor pain than untrained nurses. Besides, nurses who have 11 to 15 years of working experience would practise less in reducing labor pain than other groups. In addition, the findings reveal that there are 5 practices, which nurses never to once or twice provide to women; asking women to rate their pain level by using pain assessment tools; massaging women's hands, legs, or back; touching or holding women' s hands

during contractions; teaching and encouraging women to use effleurage technique; and giving women water chips. Thus, suggestions are as follows:

1. Aiming at gaining nurses' knowledge and skills to practice in reducing labor pain, nurses' supervisors should be aware of and establish continuously an active training on pain management program for less knowledgeable nurses and nurses who have worked for more than 10 years. Furthermore, nurses should be encouraged to practise massage and effleurage techniques to women. Along with these techniques, they would suggest of encourage student nurses or practical nurses to provide such techniques to women.

2. Nurses supervisors should inform and encourage nurses to use pain assessment tools such as Visual Analogue Scale or Faces Pain Rating Scale. For nurses' convenience, such tools should be supplied and placed at women's charts or their bedsides.

3. Nurses supervisors should promote nurses to know and realize that women can be allowed to take water or ice chips although they are in labor. It is a refreshing nursing practice. It should be done especially in women who their mouth become dry and have no risk of needing a cesarean section.

Implication for Further Studies

1. To compare nursing practice in reducing labor pain between nurses practice and women's perception.

2. To compare pain relief methods between massage and breathing patterned

3. To study the effect of analgesics to maternal and fetus health.

4. Although it is known that natural childbirth is more safe to women and babies than pharmacological pain control methods, the findings reveal that most nurses notify obstetrician for analgesic administering. The researcher does not explore why nurses do much in notifying. Thus, further studies should explore including how nurses manage with information of pain assessment, what are their plans for helping women to alleviate the pain, and what are the results before notifying.

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APPENDIX

APPENDIX A

List of Experts

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6. Asst.Prof.Dr. Yaowalak Serisathien

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APPENDIX B

CONSENT FORM

คำชี้แจงและเอกสารพิทักษ์สิทธิ์

เรียน คุณพยาบาลห้องคลอด

เรื่อง ขอความร่วมมือในการตอบแบบสอบถาม

ดิฉันมีความเชื่อว่าการศึกษาวิจัย เป็นการส่งเสริมพัฒนาวิชาชีพพยาบาลให้ก้าวหน้ามั่นคง การพยาบาลในระยะคลอดก็เป็นส่วนหนึ่งที่จะสามารถส่งเสริม ให้วิชาชีพพยาบาลพัฒนาก้าวหน้าได้ ท่านเป็นบุคคลสำคัญคนหนึ่งที่ให้การพยาบาลแก่ผู้คลอดในระยะเจ็บครรภ์ เป็นผู้ที่มีความรู้ความชำนาญ มีประสบการณ์ในการช่วยเหลือผู้คลอดและทารกให้ปลอดภัยจากการคลอด และคลายความทุกข์ทรมานจากความเจ็บปวด ดังนั้นความรู้ ความชำนาญและประสบการณ์อย่างมากมายของท่านจึงถือเป็นข้อมูลที่สำคัญและมีค่าอย่างยิ่งในการศึกษาวิจัยครั้งนี้ ผลที่ได้จากการศึกษาวิจัยครั้งนี้จะเป็นข้อมูลพื้นฐานทางการพยาบาลของเราในการให้การพยาบาลผู้คลอดในระยะเจ็บครรภ์ เพื่อนำไปเป็นแนวทางในการพัฒนาคุณภาพการพยาบาลผู้คลอดในระยะเจ็บครรภ์สืบไปในอนาคต

จึงใคร่ขอความกรุณาและความร่วมมือจากท่านในการตอบแบบสอบถาม เรื่อง "การศึกษากิจกรรมการพยาบาลเพื่อบรรเทาความเจ็บปวดในระยะคลอดของพยาบาลในหน่วยห้องคลอด" ข้อมูลที่ได้จะนำเสนอในภาพรวม ดังนั้นการตอบแบบสอบถามครั้งนี้จะไม่มีผลกระทบใดๆ ทั้งต่อตัวท่านและบุคคลที่เกี่ยวข้อง แต่จะเป็นประโยชน์ต่อวงการพยาบาลของเราอย่างมากในอนาคต ท่านมีสิทธิโดยชอบธรรมที่จะปฏิเสธการตอบแบบสอบถามนี้ โดยจะไม่มีผลกระทบใดๆต่อท่าน ขอขอบพระคุณท่านที่กรุณาสละเวลาตอบแบบสอบถาม

นาถสุดา โชติวัฒนากุลชัย

คำชี้แจง

แบบสอบถามที่ใช้ในการศึกษาวิจัยครั้งนี้เป็นแบบสอบถามที่ผู้วิจัยสร้างขึ้น มีจำนวน 2 ชุด ดังนี้ ชุดที่ 1 แบบสอบถามเรื่องกิจกรรมการพยาบาลในการบรรเทาความเจ็บปวดแก่ผู้คลอดในระยะคลอด และชุดที่ 2 แบบสอบถามความรู้เกี่ยวกับความเจ็บปวดในระยะคลอด โปรดอ่านคำชี้แจงแต่ละส่วนก่อนตอบและกรุณาตอบแบบสอบถามทุกข้อ

APPENDIX C

INSTRUMENTS

รหัสแบบสอบถาม ☐ ☐ ☐

แบบสอบถาม

กิจกรรมการพยาบาลเพื่อบรรเทาความเจ็บปวดในระยะคลอด

ส่วนที่ 1 ข้อมูลส่วนบุคคล

คำชี้แจง โปรดทำเครื่องหมาย ✓ ลงใน ☐ หรือเติมคำลงในช่องว่าง

1. ปัจจุบันท่านอายุ.....ปี ☐
2. วุฒิการศึกษาสูงสุดของท่านคือ..... ☐

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8. ท่านเคยได้รับการฝึกอบรมเกี่ยวกับการบรรเทาปวดในระยะคลอดหรือไม่ ☐

☐ ไม่เคย

☐ เคย

ส่วนที่ 2 กิจกรรมการพยาบาลเพื่อบรรเทาความเจ็บปวดในระยะคลอด

คำชี้แจง แบบสอบถามชุดนี้มีวัตถุประสงค์เพื่อสำรวจกิจกรรมการพยาบาลในการบรรเทาความเจ็บปวดในระยะคลอดในรอบ 1 เดือนที่ผ่านมา โดยต้องการสอบถามท่านว่า ท่านได้ปฏิบัติจริงตามกิจกรรมการพยาบาลเหล่านี้หรือไม่ ปฏิบัติบ่อยเพียงใด คำตอบจะไม่มีถูกหรือผิดประการใด กรุณาอ่านข้อความทางซ้ายมือ แล้วทำเครื่องหมาย ✓ ลงในช่องทางขวามือที่ตรงกับการปฏิบัติจริงของท่านมากที่สุด คำตอบมี 4 ระดับ ซึ่งมีความหมายดังนี้ คือ

เป็นประจำ	หมายถึง ท่านกระทำกิจกรรมนั้นสม่ำเสมอ หรือกระทำทุกครั้งที่มีเหตุการณ์
บ่อยครั้ง	หมายถึง ท่านกระทำกิจกรรมนั้นเป็นส่วนใหญ่ แต่ไม่ทุกครั้ง
น้อยครั้ง	หมายถึง ท่านกระทำกิจกรรมนั้นเป็นบางครั้ง หรือกระทำเป็นส่วนน้อย
ไม่เคย	หมายถึง ท่านไม่เคยกระทำกิจกรรมนั้นเลย

กิจกรรมการพยาบาล	ปฏิบัติเป็นประจำ	ปฏิบัติบ่อยครั้ง	ปฏิบัติน้อยครั้ง	ไม่เคยปฏิบัติ
ในการให้การพยาบาลผู้คลอดในระยะเจ็บครรภ์ในรอบ 1 เดือนที่ผ่านมา ท่านประเมินความเจ็บปวดของผู้คลอดโดยการ 1. สังเกตจากน้ำเสียงของผู้คลอด เช่น ร้องคราง เป็นต้น				
2. สังเกตจากกิริยาของผู้คลอด เช่น กระสับกระส่าย กำมือ.....				
34. ไม่พูดคุยกันเองเสียงดัง รบกวนผู้คลอด				
35. จัดบรรยากาศในห้องคลอดให้สงบ ไม่พลุกพล่าน				

ในการให้การพยาบาลผู้คลอดในระยะที่ 1 ของการคลอด ท่านได้บรรเทาความเจ็บปวดให้แก่ผู้คลอดหรือไม่

- ☐ ไม่ได้บรรเทา
- ☐ ได้บรรเทา ท่านให้การบรรเทาความเจ็บปวดแก่ผู้คลอดโดยวิธีใด (ตอบได้มากกว่า 1 ข้อ)
  - ☐ 1. แนะนำให้กำหนดลมหายใจเข้าออก.....
  - ☐ 2. แนะนำลูบหน้าท้อง
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  - ☐ 9. ใช้วิธีอื่นๆ (โปรดระบุ.....)
  - ☐ 10. รายงานแพทย์เพื่อฉีดยาระงับปวด

แบบสอบถาม
ความรู้เกี่ยวกับความเจ็บปวดในระยะคลอด

คำชี้แจง แบบสอบถามนี้มีวัตถุประสงค์เพื่อประเมินความรู้ของพยาบาลเกี่ยวกับความเจ็บปวดในระยะคลอด โปรดอ่านข้อความในแบบสอบถามแต่ละข้อและพิจารณาว่าท่านมีความเข้าใจข้อความเหล่านั้นว่าอย่างไร กรุณาตอบด้วยตัวของท่านเอง อย่าเปิดหนังสือหรือถามผู้อื่น โปรดพิจารณาอ่านทุกข้อและ ทำเครื่องหมาย ✓ ลงในช่องว่างที่มีความหมายดังนี้

ใช่ หมายถึง ท่านมีความเห็น ความเข้าใจว่าข้อความนั้นถูกต้อง
ไม่ใช่ หมายถึง ท่านมีความเห็น ความเข้าใจว่า ข้อความนั้นไม่ถูกต้อง
ไม่แน่ใจ หมายถึง ท่านมีความสงสัยว่าข้อความนั้นถูกต้องหรือไม่ถูกต้อง

ความรู้เกี่ยวกับความเจ็บปวดในระยะคลอด	ใช่	ไม่ใช่	ไม่แน่ใจ
ข้อความใดต่อไปนี้กล่าวถึงความเจ็บปวดในระยะคลอดถูกต้อง 1. ความปวดในระยะที่หนึ่งเกิดจากปากมดลูกขยายตัว			
2. บริเวณหน้าท้องและแผ่นหลังส่วนล่าง มีประสาทรับความเจ็บปวดร่วมกับมดลูก เมื่อมดลูกหดรัดผู้คลอดจะปวดหน้าท้องและหลัง			
36. การฟังดนตรี การเพ่งจุดสนใจ เป็นการกระตุ้นสมองให้รับสัญญาณจากสิ่งเร้าที่เป็นเสียง หรือแสง ปิดประตูรับความเจ็บปวด จึงปวดน้อยลง			
37. การเบี่ยงเบนความสนใจ เช่น อ่านหนังสือ ดูทีวี ทำให้ผู้คลอดปวดน้อยลง			

APPENDIX D

Table11 Mean and standard deviation of knowledge in pain management scores of nurses classified by obstetric working experience (n = 197)

Scores of knowledge / working experience (years)	$\bar{x}$	S.D.
1 – 5	29.97	4.22
6 – 10	28.52	4.84
11 – 15	27.88	4.87
≥ 16	28.35	4.91

Table 11 shows that nurses who are in 1-5 years working experience group have the highest knowledge in pain management mean score ($\bar{x}$ = 29.97, S.D. = 4.22). The second is those who are in 6-10 years group ($\bar{x}$ = 28.52, S.D. = 4.84). It is interesting that nurses who are in 11-15 years group have the lowest knowledge in pain management mean score ($\bar{x}$ = 27.88, S.D. = 4.87).

Table 12 Frequency and percentage of nurses related to prior training on pain management and classified by obstetric working experience (n = 197)

Training experience / Working experience (years)	been trained		never been trained		total
	n	percent	n	percent	
1 – 5	**25**	**(34.2)**	48	(65.8)	73
6 – 10	**16**	**(29.6)**	38	(70.4)	54
11 – 15	**9**	**(27.3)**	24	(72.7)	33
≥ 16	**15**	**(40.5)**	22	(59.5)	37

Table 12 shows that above 16 years working experience group of nurses is the most (40.5 %) that have been trained on pain management whereas 11-15 years working experience group of nurses is the least (27.3 %).

BIOGRAPHY

NAME	Miss. Nadsuda Chotwattanakulchai
DATE OF BIRTH	29 August 1971
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INSTITUTIONS ATTENDED	Mahidol University, 1989-1993: Bachelor of Nursing Science
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