

**THE EFFECTS OF MUSIC ON PAIN RELIEF
IN GYNECOLOGIC PATIENTS UNDERGOING
UTERINE CURETTAGE**

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UTERINE CURETTAGE**

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THE EFFECTS OF MUSIC ON PAIN RELIEF IN GYNECOLOGIC PATIENTS UNDERGOING UTERINE CURETTAGE.

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ABSTRACT

This study was a quasi-experimental study. The purpose of this study was to determine the effects of music on pain relief in gynecologic patients undergoing uterine curettage. This study included 60 women between the ages of 20-50 years, who underwent uterine curettage due to gynecologic indications at the emergency gynecologic ward, Maharat Nakhonratchasima Hospital during 1st August,2002 to 31st December,2002. The patients were randomly allocated into 2 groups. The experimental group(n=30) received advice and chose the preferred music to listen to during the procedure while the control group (n=30) did not have music to listen to. Pulse rate and blood pressure before and after uterine curettage were recorded. Pain score was used to determine level of pain from curettage. General characteristics of patients were analyzed by using percentage, mean and standard deviation. Chi-square test and t-test were used for hypothesis test of association.

The results of the study showed that the pain scores, systolic blood pressure and average blood pressure in the experimental group were significantly less than in the control group (p-value 0.035, 0.024, 0.007). Decreases in pulse rate and blood pressure between before and after curettage in the control group were greater than in the experimental group but with no statistically significantly difference. Most of the patients preferred Thai country music and felt satisfied with the music during uterine curettage.

The application of music therapy to relief pain during uterine curettage is convenient and effective for gynecologic patients undergoing uterine curettage. Music therapy helped pain relief by distracting attention from the procedure and helped patients feel entertained and relaxed.

KEY WORDS : PAIN / UTERINE CURETTAGE / MUSIC

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ผลของดนตรีต่อการลดความเจ็บปวดในผู้ป่วยทางนรีเวชกรรมที่ได้รับการขูดมดลูก
(THE EFFECTS OF MUSIC ON PAIN RELIEF IN GYNECOLOGIC PATIENTS
UNDERGOING UTERINE CURETTAGE)

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บทคัดย่อ

การศึกษานี้เป็นการวิจัยแบบกึ่งทดลอง มีวัตถุประสงค์เพื่อศึกษาผลของดนตรีต่อการลดความเจ็บปวดในผู้ป่วยทางนรีเวชกรรมที่ได้รับการขูดมดลูก กลุ่มตัวอย่างคือ สตรี อายุ 20-50 ปี ที่มารับการขูดมดลูกด้วยโรคทางนรีเวชกรรมที่หน่วยฉุกเฉินนรีเวชกรรม โรงพยาบาลมหาราชนครราชสีมา เก็บข้อมูลระหว่างวันที่ 1 สิงหาคม 2545 ถึงวันที่ 31 ธันวาคม 2545 จำนวน 60 คน โดยกลุ่มทดลอง 30 คน ได้รับการแนะนำและเลือกชุดดนตรีที่ชอบ เพื่อใช้ฟังโดยสวมหูฟังในขณะที่ขูดมดลูก ส่วนกลุ่มควบคุม 30 คน ไม่ได้ฟังดนตรี ทั้ง 2 กลุ่มได้รับการวัดชีพจรและความดันโลหิตก่อนการขูดมดลูก หลังการขูดมดลูกมีการประเมินความปวด, ชีพจรและความดันโลหิตทั้ง 2 กลุ่ม สถิติวิเคราะห์ข้อมูลลักษณะทั่วไปของกลุ่มตัวอย่างใช้ร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน และทดสอบสมมติฐานโดยใช้ Chi-square และ t-test

ผลการวิจัยพบว่าคะแนนความเจ็บปวด ค่าความดันโลหิตซิสโตลิกและค่าความดันโลหิตเฉลี่ยหลังขูดมดลูกในกลุ่มทดลองต่ำกว่ากลุ่มควบคุมอย่างมีนัยสำคัญทางสถิติ (p-value 0.035, 0.024, 0.007) ส่วนชีพจรและค่าความแตกต่างของความดันโลหิตก่อนและหลังการขูดมดลูกในกลุ่มควบคุมเพิ่มขึ้นมากกว่ากลุ่มทดลองอย่างไม่มีนัยสำคัญทางสถิติ ผู้ป่วยส่วนใหญ่ชอบดนตรีประเภทเพลงไทยลูกทุ่งและฟังพอใจในการฟังดนตรีขณะได้รับการขูดมดลูก

การนำดนตรีที่ชอบมาใช้เพื่อลดความปวดจากการขูดมดลูก เป็นวิธีที่สะดวกและมีประสิทธิภาพ มีส่วนช่วยให้ผู้ป่วยลดความปวดลงได้ เนื่องจากช่วยเบี่ยงเบนความสนใจจากขบวนการรักษาเกิดความเพลิดเพลิน และผ่อนคลาย

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CHAPTER I

INTRODUCTION

The significance of problems

Uterine curettage is an obstetric procedure for both diagnostic and therapy. The diagnosis is for the patients who had abnormal uterine bleeding or rule out cancer of the uterus. For therapeutic purpose of uterine curettage is for abortion or stop bleeding from dysfunctional uterine bleeding patients.

Pain is a highly personal and variable subjective experience that is influenced by cultural learning, the meaning of the that professional caregivers do not have the goal of total relief for patients. In the nineteenth century, the role of the nervous system in the transmission of pain was discovered, and thus began our romance with neurosurgery and anesthesia. Removing the pain by severing or blocking a nerve became acceptable, but covering up the pain by using treatments, particularly medications, was a sign of weakness of a breach of morality. These beliefs are still evident among patients, family members, and caregivers. Their responses to pain management approaches, particularly analgesia, reflect some beliefs that do not encourage pain relief. These misbeliefs suggest that covering up pain is dangerous and that suffering has merit.

As we move through the last decade of this century, poor pain relief continues to be a problem for both patients and professional caregivers. Millions of people experience acute and chronic pain every year, yet effective pain management seems elusive. Consequently pain is the most frequent cause of suffering and disability for many people, significantly decreasing their quality of life.

Physiological factors and psychological factors are 2 etiology that make severe pain to the patients during uterine curettage. Physiological factors are tissue damage, vaginal or cervical muscular constriction and the pressure due to long time dilatation from instrument. Psychological factors are anxiety about pain that made to increase pain level (1). To lie down on lithotomy position make the patients feel

ashamed and were afraid(2). Therefore pain was increased especially occurrence pain due to important organs was damage and psychological disturbances (3).

Although the time for uterine curettage is 5-10 minutes but it might be severe pain to the patients. From the researcher's pilot study, the patients who received uterine curettage at emergency gynecological ward at Maharat Nakhonratchasima Hospital, felt mild to severe pain. Some responded to pain by body movement that made the curettage more difficult and risk to complication. At the present time, at Maharat Nakhonratchasima Hospital, there is no specific therapeutic regimen for pain relief. Most of doctors prefer to use analgesic drugs i.e. morphine or pethidine. In some cases the patients who received analgesic drug still felt severe pain. It is accordance with Fields's study in 1987 (4) which found that there were more patients who still felt severe pain after they received analgesic drug and most of them must be observed for side effects of analgesic drug for 4-6 hours after curettage.

There are several studies which found that music could relieve pain from surgical procedures but no study has been on uterine curettage. Thus, the researcher's interest is to study the effect of preferred music to relieve pain in patients who underwent uterine curettage. This result will be a guideline for pain relief without or decrease the use of analgesic drugs in non-complicated uterine curettage patients that will save cost and reduce adverse drug reaction. Furthermore these patients will be discharged.

Objective of the study

To study

1. Effects of music on pain relief in gynecologic patients undergoing uterine curettage. To compare the followings between the patients who listened to preferred music and who did not, during uterine curettage.

1.1 Pain score

1.2 Pulse rate, systolic blood pressure, diastolic blood pressure and average blood pressure before uterine curettage

1.3 Pulse rate, systolic blood pressure, diastolic blood pressure and average blood pressure after uterine curettage

1.4 Change in pulse rate, systolic blood pressure, diastolic blood pressure and average blood pressure after uterine curettage

2. Opinions of patients toward:

2.1 Type of preferred music

2.2 Opinions on the use of preferred music for pain relief.

Research Hypothesis

1. The pain score of the gynecologic patients undergoing uterine curettage who listened to music was different from the patients who did not.

2. The pulse rate, systolic blood pressure, diastolic blood pressure and average blood pressure after uterine curettage of the gynecologic patients undergoing uterine curettage who listened to music was different from the patients who did not.

3. The change in pulse rate, systolic blood pressure, diastolic blood pressure and average blood pressure after uterine curettage of the gynecologic patients undergoing uterine curettage who listened to music was different from the patients who did not.

Scope of The Study

This research is studied among the gynecologic patients who came to receive uterine curettage at the emergency gynecologic ward, Maharat Nakhonratchasima hospital during 1st August,2002 to 31st December,2002.

Definition of Terms

Music Therapy refers to applied music help treatment illness or discomfort from physical , mental and social. Music therapy have music for relaxation, prefer

music etc. Applied music therapy should be concerned about detail of music and objective in treatment for efficiency (11,14,15,16).

Preferred Music refers to sounds or tones which are arranged to relief pain in gynecologic patients undergoing uterine curettage. They were recorded in a tape cassette. Cassette tape of recorded music for 60 minutes were selected 7 types of music. They are chosen from Thai pop music, Thai country music, International music, Folk music, Thai chorus music, Thai classic music (Instrument) and International music (Instrument). The characteristics of this music was composed of a 60-80 beats/minute tempo.

Pain refers to subjective feeling of accept and response that the tissue damage associated with mental, physical, emotional, social and culture. The pain is feeling who meet and had pain show that true pain (6,20,21,22). Pain in this research means suffering and discomfort in physical and mental who receive uterine curettage . It could be assessed in two forms:

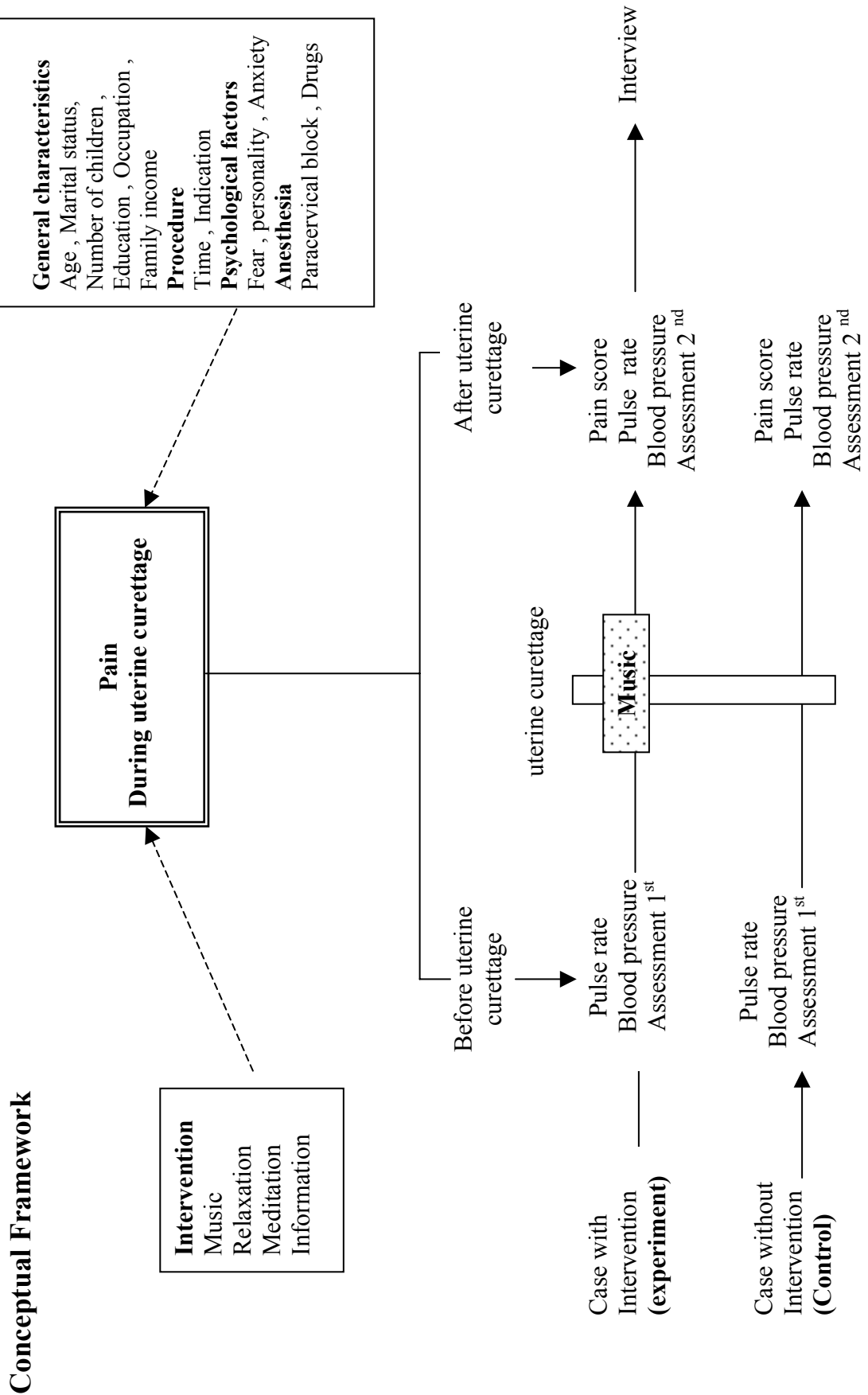
1. Verbal expression refers to pain scores which the patients used to describe their pain level. The assessment of pain use the evaluation which was modified by Udomthavornsuk P. was applied to measure pain (19).

2. Nonverbal expression refers to physiological responses. They have blood pressure and pulse rate which can be automatic blood pressure monitoring.

Expected Outcome and Benefits

The results of this study may be :

1. To support music therapy as a self-care strategy on pain relief patients undergoing uterine curettage.
2. To increase scientific merit of non-drug logical intervention such as music therapy.
3. A guideline for those interested in studying the effects of music on other types of pain in the future



CHAPTER II

LITERATURE REVIEW

This chapter covers literatures related to pain and music therapy in patients undergoing gynecologic uterine curettage

The aspects of literature review are presented in sequence as follow :

2.1 Pain and pain relief mechanism

2.2 Pain relief during uterine curettage

2.3 Music therapy

2.1 Pain and pain relief mechanism

Definition of pain

Many meaning of pain has been given as follow,

The International Association For the Study of Pain (25). defined that pain was the uncomfortable experience both of emotion together with the annihilation from tissue damage.

Sternbach (1968) (24) concluded that the pain that subjective feeling that depends on ,

- 1). A personally feeling happened to an individually.
- 2). The warning signal or shows the risk happened to the caused tissues.
- 3). It was physical reaction to prevent the harms from the living things.

McCaffery (1979) (6) given the meaning of the pain that “ Pain is whatever the experiencing person says it is , existing whenever he says it does ”

Bayley (1984) (20) given the meaning of the pain in two ways. They were,

1. The pain was the mind vision in many dimensions, which caused the pain to show in many characters.

2. The pain was an individually experience that related to physiological systems nerves basis, mind conditions and the cultural factors.

Bonica (1990) (21) said that the pain was an uncomfortable feeling and the emotion experienced according to the damage tissues or risk to the damage.

Boss (1992) (22) said that the pain was the aware experience of the person that was complex by bio, mind, social or the interaction to prevent the physical damaged which related to that cultural social.

Pain is a highly personal and variable subjective experience that is influenced by cultural learning, the meaning of the that professional caregivers do not have the goal of total relief for patients.

In the nineteenth century, the role of the nervous system in the transmission of pain was discovered, and thus began our romance with neurosurgery and anesthesia. Removing the pain by severing or blocking a nerve became acceptable, but covering up the pain by using treatments, particularly medications, was a sign of weakness of a breach of morality. These beliefs are still evident among patients, family members, and caregivers. Their responses to pain management approaches, particularly analgesia, reflect some beliefs that do not encourage pain relief. These misbeliefs suggest that covering up pain is dangerous and that suffering has merit.

Melzack and Wall's gate control theory, which proposed that the dorsal horn, the brain stem, and the cortex played essential roles in enhancing, modulating, and integrating the pain experience, brought a more holistic view of pain than earlier pain theories had allowed. The most significant contributions of Melzack and Wall to the understanding of pain were their identifications of the gating mechanism by which painful impulses are modulated in the dorsal horn of the spinal cord before ascending to the thalamus and cortex, where they are recognized as pain; and the interacting effects of cognitive and emotional processes within the cerebral cortex and midbrain on the transmission of painful impulses. The gate control theory acknowledged that emotional states, learning knowledge, and thought processes help to determine whether the gating mechanism in the spinal cord allows or stop the transmission of pain impulses.

This suggestion of a link between cortical processes and pain transmission reactivated interest in the relationships between psychological states and pain perception. Indeed, gate control theory stimulated the development of a new field in psychology, and soon a variety of new techniques for pain management emerged. Many of these are discussed in the chapters that follow. Imagery, distraction, music therapy, laughter, and sensory information can be broadly classified as behavioral or cognitive approaches to the management of pain. The rationale for their use comes from the gate control theory, which links cognitive and emotional functioning with the transmission and perception of pain.

Cutaneous stimulation techniques interfere with the transmission of pain impulses, decreasing the perception of pain.

Cutaneous stimulation, such as the application of heat or cold, massage, acupuncture, transcutaneous electrical nerve stimulation (TENS), and implanted electrical stimulation of the dorsal columns and thalamus have also become increasingly common in practice. Biofeedback is both a distraction, technique that modulates incoming painful stimuli and a method of reducing the muscle activity that may be contributing to the pain.

In the early 1970s, the discovery of endogenous opiates suggested that spinal opioid analgesia might be useful in pain management. Nonnarcotic analgesics, particularly nonsteroidal anti-inflammatory drugs, gained more prominence in the early 1980s. However, to date, the ideal therapy that would be simple, universally effective, nonaddicting, without side effects, inexpensive, able to meet every patient's needs, and requiring little nursing time has been elusive. Interventions that require large expenditures of nursing time have become less acceptable as a result of prospective reimbursement and nursing clinical pressure. Even the intervention that seems to be most effective, patient-controlled analgesia (PCA), is not embraced by all patients. Thus there is still no panacea for acute or chronic pain.

Pain Management

As we move through the last decade of this century, poor pain relief continues to be a problem for both patients and professional caregivers. Millions of people experience acute and chronic pain every year, yet effective pain management seems

elusive. Consequently pain is the most frequent cause of suffering and disability for many people, significantly decreasing their quality of life.

The approaches we use to manage pain represent a collage of reactions to a concept of pain that has evolved over thousands of years. Current practices in pain management seem to reflect outdated thinking rather than current knowledge and research. Aristotle, in the fourth century believed that pain was an emotion. Today there are still those who practice, study, and publish in a manner that suggests they believe pain is primarily an emotional reaction that can be conquered by willpower. It is disconcerting to hear professional caregivers suggest that their patients with persistent pain “could get better if they really wanted to.”

In the Middle Ages, pain was viewed as a possession by demons, punishment for sins, and the will of God. Kilwein suggests that pain continues to be perceived as having some redeeming value and as synonymous with moral weakness. As a result, caregivers are unwilling to give adequate analgesic doses for pain relief, fears of addiction are exaggerated, and patients suffer needlessly. Research continues to demonstrate situation in which it occurs, attention, anxiety, and a host of other cognitive and psychological variables. It is generally acknowledged that pain is a signal that body tissues are being or have been injured. However, it is important to remember that pain processes do not begin with the stimulation of receptors. Rather, injury of disease produces neural signals that enter an already active nervous system that represents the substrate of past experience, culture, anxiety, and other ongoing and current neural processes. These brain processes actively influence the selection, abstraction, and synthesis of information from the total sensory input at any given time. Pain, then is not simply the end product of a linear sensory transmission system, but is a dynamic process involving continuous interactions among complex ascending and descending neural systems.

The physiology composition of the pain

The pain from the uterine curettage was the physiology process that related to somatosensory system that explained with the mechanism of the pain that consisted of 3 compositions, were noxious stimuli, primary afferent nociceptor and pain impulse pathway (26).

1.The noxious stimuli The stimuli may divide into 2 types, as follow.,

1.1.Physical stimuli. which were sharp curette, curetted the tissue that adhere the uterus cavity. The dilatation of vaginal and cervix, press force, muscular tensed from the large tool used and hard to dilate the vagina for long time.

1.2.Chemical stimuli. which were the chemical built in the body such as histamine and prostaglandin etc.,

2.Primary afferent nociceptors It will be incited from the noxious stimuli with the character of free nerve ending of the encased nerve fiber (28,29) was A-delta group and the naked nerve fiber was C-fiber group of the nerve sensory which were uterine plexus and pelvic plexus of hypogastric sympathetic nerve and pelvic parasympathetic (30). When there was the physical activation and the chemical stimuli, as mentioned above. The spinal gate mechanism will be activated to pain threshold causing the pain impulse and lead to hypogastric sympathetic nerve and pelvic parasympathetic to Spinal cord and brain.

3.The Pain Impulse Pathway. When the free nerve ending activated will caused the pain impulse by A-delta nerve fiber and C-fiber nerve. The Hypogastric sympathetic nerve and pelvic parasympathetic will lead the nerve flow to spinal cord at dorsal horn. Here, the synape with the nerve cells in Substantia Gelatinosa or SG which the various receptors does not directly from the skin to the brain at all. But it will be transmitted, control or data first adjusted at Substantia gelatinosa (SG) in dorsal horn (31). Which considered that this area was the control center for transforming the pain impulse signal to the stimulated person which may sensing the pain less than not serious stimulated person.

The Gate Control Theory of Pain

The gate control theory was well known in 1965 (32,70). By the psychologist called Ronal Melzack and Patrick Wall the physiologist. It was in the light of this understanding of pain processes that Melzack and Wall proposed the gate control theory of pain . Basically , theory states that neural mechanisms in the dorsal horns of theory states that neural mechanisms in the dorsal horns of the spinal cord act like a gate that can enhance or diminish the flow of nerve impulses from peripheral fibers to

the spinal cord cells that project to the brain. Somatic input is therefore subjected to the modulating influence of the gate before it evokes pain perception and response. The theory suggests that large – fiber inputs tend to close the gate, small-fiber inputs generally open it, and the gate is also influenced by descending controls from the brain. It further suggests that sensory input is modulated at successive synapses throughout its projection from the spinal cord to the brain areas responsible for pain experience and response. Pain occurs when the number of nerve impulses that arrive at these areas exceeds a critical level.

Melzack and Wall recently assessed the current status of the gate control theory in the light of new physiological research. It is clear that the theory has continued to thrive and evolve despite considerable controversy. The concept of gating, or input modulation, has gained increasing strength

Spinal cord Mechanisms

The dorsal horns, which receive fibers from the body or project impulses toward the brain, contribute to our understanding of information processing at the spinal cord level. The dorsal horns comprise several layers or laminae, each of which is now known to have specialized functions, although the inputs and outputs of each lamina are not entirely understood. But it now appears that input is modulated in the dorsal horns before it is transmitted to the brain.

The substantia gelatinosa, laminae 1 and 2, is of particular interest here because it represents a unique system on each side of the spinal cord where this modulating effect occurs. Many afferent fibers from the skin terminate in the substantia gelatinosa, and the dendrites of many cells in lower laminae, whose axons project to the brain, lie within the substantia gelatinosa. This region then, is situated between a major portion of the peripheral nerve fiber terminals and the spinal cord cells that project to the brain. There is convincing physiological evidence that the substantia gelatinosa has a modulating effect on transmission from peripheral fibers to spinal cells.

Although cells in all laminae undoubtedly play a role in pain processes, lamina 5 cells are particularly responsive when noxious stimuli are applied within their receptive fields. Their fields have a remarkably complex organization, and they

respond with characteristic firing patterns to stimulation over a wide range of intensities. Moreover lamina 5 cells receive multiple inputs. There is reason to believe that they receive inputs from the lamina 4 cells, which respond readily to light touch. In addition, they receive inputs from the small myelinated and unmyelinated fibers from the skin, from deeper tissues such as blood vessels and muscles, and from the viscera

It is now also established that virtually all dorsal horn cells are under the control of fibers that descend from the brain. These cells moreover, with the exception of the substantia gelatinosa, have extensive projections to the brain. In primates, the majority project through the spinothalamic tract, while some appear to project through the dorsolateral and dorsal column systems.

The mechanism of the inhibition produced by the large fibers and the facilitation produced by the small fibers is unknown, but Hillman and Wall suggest that it may be due to presynaptic and postsynaptic effects produced by the small cells of laminae 1 and 2. A similar effect has been observed by Mendell and Wall. They found that a single electrical pulse delivered to small fibers produces a burst of nerve impulses followed by repetitive discharges in spinal cord cells. Successive pulses, if delivered at sufficiently high frequency, produce a “wind-up” effect—a burst followed by a discharge of increasing duration after each stimulation. In contrast, successive pulses delivered to large fibers produce a burst of impulses followed by a “turn-off” or period of silence after each pulse. These opposing effects of facilitation and inhibition after small and large fiber stimulation are believed to be mediated by the substantia gelatinosa, and provide the physiological basis of the gate-control theory.

The Gate Control Concept

The conceptual model that underlies the gate control theory of pain is based on the following propositions:

1. The transmission of nerve impulses from afferent fibers to spinal cord transmission (T) cells is modulated by a spinal gating (SG) mechanism in the dorsal horns.

2. The spinal gating mechanism is influenced by the relative amount of activity in large-diameter(L)and small-diameter (S) fibers: Activity in large fibers tends to inhibit transmission (close the gate) . and small-fiber activity tends to facilitate transmission (open the gate).

3. The spinal gating mechanism is also influenced by never impulses that descend from the brain.

4. A specialized system of large-diameter, rapidly conducting fibers (the central control trigger) activates higher cognitive processes that then influence, by way of descending fibers, the modulating properties of the spinal gating mechanism.

5. When the output of the spinal cord transmission (T) cells exceeds a critical level, it activates the action system-those neural areas that underlie the complex, sequential patterns of behavior and experience characteristic of pain.

The small (A-delta and C) fibers, in this conceptual frame-work, play a highly specialized and important role in pain processes in that they activate the T cells directly and contribute to their output. The activity of high-threshold small fibers, during intense stimulation, may be especially important in raising the T cell output above the critical level necessary for pain. But the small fibers are believed to so much more than this. They facilitate transmission (“open the gate”) and thereby provide the basis for summation, prolonged activity, and spread of pain to other body areas. This facilitative influence provides the small fibers with greater power than was envisaged in the concept of “pain fibers.” Yet at the same time, the small-fiber impulses are susceptible to modulation by activities in the entire nervous system. This multifaceted role of the small fibers is consistent with the psychological, clinical, and physiological evidence. The substantia gelatinosa, laminae 1 and 2, appears to be the most likely site of the spinal gating mechanism (71). It receives axon terminals from many of the large and small-diameter fibers. and the dendrites of cells in deeper laminae project into it. The substantia gelatinosa, moreover. Forms a functional unit that extends the length of the spinal cord on each side. Furthermore, its rostral extension is continuous with the substantia gelatinosa of the trigeminal system. Its cells connect with one another by short fibers and influence each other at distant sites on the same side by means of Lissauer’s tract and on the opposite side by means of

commissural fibers that cross the cord. The substantia gelatinosa, then, consists of a highly specialized, closed system of cells throughout the length of the spinal cord on both sides; it receives afferent input from large and small fibers, and is able to influence the activity of cells that project to the brain.

We have already note that cognitive or higher central nervous system processes exert a powerful influence on pain. It is also firmly established that stimulation of several different brain regions activates descending efferent fibers that can influence afferent conduction at the earliest synaptic levels of the somesthetic system. Thus it is possible for brain activities subserving attention, emotion, and memories of previous experience to exert control over the sensory input. This control of spinal cord transmission by the brain may be exerted through several systems .

The factors influencing pain.

Psychological aspects of pain

When compared with vision of hearing, the perception of pain seems simple, urgent, and primitive. We expect the nerve signals evoked by injury of disease to be perceived, unless we are unconscious or anesthetized. But experiments and clinical observations show that pain is much more variable and modifiable than many people have believed in the past. Pain differs from person to person and from culture to culture. Stimuli that produce intolerable pain in one person may be well tolerated by another. Pain perception, then, cannot be defined simply in terms of particular kinds of stimuli. Rather, it is a highly personal experience that depends in part on psychological factors that are unique to each individual.

Cultural Determinants

It is often asserted that variations in pain experience from person to person are due to different “pain thresholds”; however, there are several thresholds to pain, and it is important to distinguish among them. Typically, thresholds are measured by applying a stimulus such as electric shock or radiant heat to a small area of skin and gradually increasing the intensity. Four thresholds can be measured by this technique:

1. Sensation threshold-the lowest stimulus value at which a sensation such as Tingling of warmth is first reported;
2. Pain perception threshold-the lowest stimulus value at which the person report that the stimulation feels painful;
3. Pain tolerance (or upper threshold)- the lowest stimulus level at which the subject withdraws or asks to have the stimulation stopped; and
4. Encouraged pain tolerance- the highest level the subject will tolerate after being encouraged to tolerate higher levels of stimulation than identified in 3.

Past Experience

The knowledge that pain is influenced by cultural factors leads one to examine the effect of early experience on adult behavior related to pain. It is commonly accreted that children are influenced by the attitudes of their parents toward pain. In some families, a great fuss is made about ordinary cuts and bruises. Whereas in others there seems to bi little sympathy expressed about even fairly serious injuries. There is reason to believe, in the basis of everyday observations, that attitudes toward pain acquired early in life are carried into adulthood.

Attention, Anxiety, and Distraction

When a person's attention is focused on a potentially painful experience, he tends to perceive more intense pain than he would normally. The simple appearance of the word "pain" in a set of instructions made subjects more likely to report a given level of electric shock as painful. When the word was absent from the instructions, the same level of shock was seldom reported to be painful. Thus ,the mere anticipation of pain is sufficient to raise the level of anxiety and thereby the intensity of perceived pain. It is also well known that distraction of attention away from pain can diminish of abolish the pain. Distraction of attention may partly explain why athletes sometimes sustain severe injuries during the excitement of competition without being aware that they have been hurt. Distraction of attention may be most effective when the pain is steady or rises slowly in intensity. When radiant heat is focused on the skin, for example, the pain intensity may increase so quickly and sharply that subjects are unable to control it by distraction. But when the pain intensity increases slowly, people may use various techniques to distract their attention from it. Distraction

strategies are used effectively by some people to control pain produced by dental drilling and extraction.

The pain assessment.

The pain assessment was the thing that a nurse must first realized for the pained patient nursing. The painful measure gave the accurate value. And that believed was hard to do due to such pain was an individually experienced. Each set of the pain measure suitable for individual of each group only. The pain assessment method of the tool builder was to assess the pain in many types, for the correct data as much as possible. Each of the tool suitable with the patients of each disease group, and each type patients were differed. Generally, pain assessment can be divided to 2 ways as follows:

1. Verbal

A patient's verbal statements about his or her pain are the most important in pain assessment, but he or she is often unable to find the right word to describe the pain (40). Mc Caffery 1979 (6) has said that pain as whatever the experiencing person says it is, existing whenever he or she says it does accordance with Carpenito1993 (38). Therefore, numerous methods of measuring and assessing pain are invented. Each method has its own strengths and limitations. As follow:

Pain rating scales which have many different names are used in daily clinical practice to assess pain intensity.

2. Nonverbal

Pain behaviors are anything that a patient does or says in response to pain. The model of acute pain states that if the patients have pain visible signs of discomfort, behavior and/or physiologic signs, will be present such as grimacing, rigid body posture, limping, frowning, or crying. Physiologically, evaluated vital signs are predicted. Behaviors which respond to pain are different, depending on individuals, gender, age, race, pain experience, mental status, social status, environment, and other. However, no behavioral or physiological sign of pain does not necessarily mean absence of pain.

Sometimes clinicians overestimate or underestimate pain intensity from observation. Thus, several methods are selected to measure and assess pain to confirm pain intensity. The pain can be assessed by

2.1 Physiological manifestations A pain impulses ascend the spinal cord toward the brain stem and thalamus, the autonomic nervous system is stimulated as part of the stress response. Pain of low to moderate intensity and superficial pain elicits the fight-or-flight reaction. Stimulation of the sympathetic branch of the autonomic nervous system results in the physiological responses including increased heart rate, increased blood glucose vessel, diaphoresis, increased muscle tension and other. During this period the sympathetic nervous system is dominant. If pain is unrelenting, severe, or deep, typically involving visceral organ, the parasympathetic nervous system goes into action such as pallor, decreased heart rate and blood pressure, exhaustion, and so on. Sustained physiological responses to pain could cause serious harm, except in cases of severe traumatic pain, which may place a client into shock, most clients adapt, with physical signs returning to normal. Thus, a client in pain will not always have physical signs.

2.2 Behavioral manifestations Pain threatens physical and psychological well-being. People react to pain in different ways. However, pain may not be expressed if the client believes such expression would cause inconvenience to other or signal loss of self – control. A person's tolerance to pain is the point at which there is an unwillingness to accept pain of greater severity or duration. Tolerance depends on attitudes, motivation, and values. Observation of these behaviors is fairly easy and routine, and indeed, almost unavoidable (40).

2.2.1 Vocalizations refers to all emitted sounds that are not language, or at least cannot be understood as words by others. They include groaning, grunting, whimpering, moaning, crying, screaming, gasping, and many others. Some of these sounds are practically involuntary if pain is sudden, sharp, and unexpected. Such pain often elicits a gasp, a grunt, or even a scream. Some patients, because of cultural expectations, will not have as many vocalizations as others.

2.2.2 Facial expressions Meinhart and McCaffery 1983 (40) have stated that the patient's facial expression may be first or the only sign of pain, or

facial expressions may accompany a variety of other behaviors. If a patient does not verbalize or vocalize, changes in facial expression may be an excellent indication of his or her pain experience. Some patients may have a normal expression, such as opened eyes and no wrinkling of the skin in any part of the face. Others may have clenched teeth, tightly shut lips, spread lips, biting lips, widely opened or tightly shut eyes, wrinkled forehead and tightened muscles in the jaw, or any number of other facial contortions.

2.2.3 Body movement can be observed through several expression:

- **Restlessness** may be an excellent indicator of impending pain, as well as a sign of the presence of pain or its increasing intensity. It can be used to predict that pain is imminent.

- **Immobilization** means that a patient sustains one particular position for either part of the body. Patients often do this to minimize their pain. They may sustain whatever position they happen to be in, or they may purposely choose a position of maximum comfort such as a horizontal position for a spinal headache or a semi-fowler's position.

- **Rubbing body movement** Patients with pain frequently utilize some type of rhythmic or rubbing body movement. It may excellent clues as to the location of pain. For example, when a patient has a headache, he or she may rub the head.

- **Protective movement** The patient's initial physiological responses to pain typically prepare him or her for the fight-or-flight reactions. The goal of protective movements may take the form of consciously controlled fight reactions for which activation of the initial physiological processes so aptly prepare the person. For example, the patient may run away from a threat of pain to careful shielding of the threatened part using the hands or objects. Otherwise, he or she may splint his or her incision with a pillow before turning from side to side. Or, protective movements be reflex responses, which are involuntary movements executed without conscious efforts. Reflex responses are a type of fight reaction.

The attention deviation to relief the pain.

The attention deviation was the method causing the people to change its attention from the sensing or the facing circumstances to the other that was more interest. Which this new attention happened from the thalamus motivation gave the person to be aware and realized the new motivation. Changing the attention from the origin feeling. Joyful with the new motivation happened. The attention deviation was one of a free activity of the nurse that was no harm to the patients, convenience, save, easy to perform. Which this attention deviation able to nursing to the suffering relief of the patients in many sides such as anxiety reduced to reducing the pain etc.,

The attention deviation able to be used as the nursing activity to reduce the pain and well use to the small and medium pain patients, which the attention deviation causing the people to change its attention from the sensory similar as the “**sensory shielding**”. By expecting the attention to the other motivation that was around. Theses motivation may be the caused or other sensing with the bodily sensation. The other activity doing that was not relate to the pain such as watching the television, games playing, listen to music etc., causing an awareness to the less pain causing the patient with more pain tolerance and reduced the pain response as well (6,33,39).

The attention deviation to the pain reduced, able to describe by the gate control theory of Melzack and Wall (1965)(32). By the central control system and central biasing system performance.

When there was motivated from the external motivation. There would be the nerve signal transmitting to motivate the work of the central biasing system, which this part was the work of reticular formation. The input signal will motivate the work of reticular formation, to be alert and acknowledge the various matters at all time. When the nerve signal lead to reticular formation, there would be the signal transmitting to the central control system by the work of the thalamus and cerebral cortex. Which acting the cognitive and response to the stimulation.

At the same time, when there was a noxious stimuli and sending the pain signal to the brain of cerebral cortex to be aware if the nerve signal from the attention deviation has a more concentrate than the reticular formation select the acknowledgement and response to the attention deviation and transmitting the signal

to the reticular formation causing a nerve signal transmitting from the attention deviation to the central control system more, effected the pain impulse signal reduction to the central control system. After that the reticular formation and the central control system will transmit the nerve signal at the gate control system at the spinal cord, activated the gate system performance to motivated the of SG cells to be closed the gate and block the pain impulse (40).

2.2 Pain relief during uterine curettage

Curettage of the uterus

Definition of Curettage

A procedure using an instrument inserted into uterine cavity to scrape off endometrium tissue for pathological examination.

The indications for the curettage are limited to the following:

1. Diagnostic. To establish the exact histological nature of the endometrium in bleeding, to establish the presence of ovulation in infertility and to confirm or refute the possibility of endometrial cancer or tuberculosis. The operation should be performed as a diagnostic routine in all prolapse operations in which the uterus is not to be removed in order to exclude any intra-uterine pathology.

2. Therapeutic. To remove an endometrial polypus (this is partly diagnostic) and to remove a small myomatous polypus or the retained products of gestation in incomplete abortion. It is also a method of therapeutic abortion. It is sometimes effective in certain types of functional. Bleeding, but its value in these conditions is unreliable. It is necessary to explore the uterine cavity in order to remove an intrauterine device or parts of such a device.

Indications and Contraindications

It is important that curettage be performed for the proper indications, be performed correctly to obtain the most useful information, and be performed safely. A Curettage performed properly and with aseptic technique involves little risk but if precautions are disregarded, complications and even death can result. The chief purpose of curettage of the uterus is the removal of endometrial or endocervical tissue

for histologic study of cases of abnormal uterus bleeding. Although classical curettage of the uterus continues to be a useful Procedure, new practices and instrumentation permit the procurement of endometrium as a screening diagnostic test under many circumstances. Appropriate use of such procedures can reduce significantly the need for operating room curettage. Careful pelvic examination under relaxation has been an important adjunctive diagnostic aid to conventional curettage, but the precision and availability of ultrasound and other imaging techniques have brought them to the forefront of importance in diagnosis.

When office procedures fail to establish the diagnosis, it is preferable to use a general anesthetic during curettage. The procedure is more comfortable for the patient and easier to perform with the patient fully relaxed, and most patients will opt for a general anesthetic for this procedure. Curettage under general anesthesia also Provides an ideal opportunity for thorough examination of the pelvic organs. Before the Examination, the bladder should be empty and an enema should have been given and expelled. The pelvic examination should be performed after the anterior abdominal wall is relaxed from the anesthesia and before the patient is draped. Occasionally, new and important pelvic findings will be discovered. When women who are serious medical risks require curettage for postmenopausal bleeding, The operation is performed without anesthetic other than hypodermic or intravenous administration of sedative combined with paracervical nerve block.

Complications of Uterine Curettage

If the position and the consistency of the uterus are carefully observed on bimanual examination under anesthesia before curettage is begun, perforation will rarely occur. When the position of the uterus is not known to the operator, perforation occurs with remarkable ease. Special care should be exercised with a uterus that is acutely anteflexed or retroflexed. With cervical stenosis, pregnancy, or intrauterine malignancy, perforation is more likely, The Postmenopausal atrophic uterus can be perforated with only slight force applied to the uterine sound or the curet. Perforation is discovered when the sound or the curet fails to encounter resistance where it normally should, as judged by the palpated size of the uterus. Perforation by the uterine sound or cervical dilator causes less damage than

perforation by the sharp curet or suction cannula. Sharp curettage for legally induced abortion has a major complication rate that is two to three times higher than that for suction curettage. The two principal dangers of uterine perforation are bleeding and trauma to the abdominal viscera. Lateral perforation through the uterine vessels is especially dangerous from the standpoint of intraperitoneal hemorrhage and broad ligament hematoma formation. Damage can occur to bowel, omentum, mesentery, ureter, and fallopian tube. Perforation of the anterior or posterior wall of the uterus by a small curet in performing a diagnostic curettage is usually not a serious accident. However, it is usually necessary to discontinue curettage. One must watch carefully for signs of hemorrhage or infection. If signs of hemorrhage develop, the abdomen should be opened and the uterine wound sutured. If signs of infection occur, broad-spectrum antibiotics should be given. If a pelvic abscess develops, the abscess should be drained if possible. Serious hemorrhage infection occurs only rarely. When serious damage from perforation is suspected, laparoscopy can be performed to assess the extent of the damage and the needed repair.

Complications of uterine curettage. In the first place there is a risk of sepsis, which may take the form of peritonitis, and in post-abortion cases of septicaemia. Haemorrhage of severe degree may follow the removal of pieces of placental tissue, and bleeding may be caused by a laceration of the cervix if the dilatation has been performed too quickly. If there is any possibility that the bleeding may be due to malignant trophoblastic disease, then curettage is contraindicated. There is a real risk of provoking acute right failure by the dislodgement of malignant trophoblastic emboli. Curettage is not recommended as a method of evacuating a vesicular mole. Perforation of the uterus by a curette is unusual, although it may occur in cases of adenocarcinoma of the endometrium and after abortion.

If perforation should occur, provided the operation is a clean one, nothing is required except careful observation, i.e. a half-hourly pulse and temperature chart is kept and the patient is watched for any sign of intraperitoneal irritation or haemorrhage.

2.3 Music therapy

Music has long been known for its soothing qualities. In recent years it has been the subject of many research studies. As a therapy, music is used to restore, maintain, and improve mental and physical health, according to the National Association for music Therapy. Music is a natural tool for nurses to use as an adjunct to pain management because of its ease of use in a wide range of health care settings.

Human and music were deep attached. It can be said that music is a part of the human's life. The music related with the human since born until the end of life. The music has a similarity to the blood attachment signal between the deliverer and the infant. By using the music to sing lullaby, when the infant grown, it would be a part of life which would be jovial, soothe even go-between the person to the social as well. And at the end of life, the music was a part of the melody produced in the cremation as well (41) and due to the said cause. The music was brought to many advantages such as melody produced while was working effected the productivity. The music used to build the advertisement phenomenon etc., In the medical and nursing, the music was brought for the many advantage therapy as well.

The music was brought for therapy long time ago. From the beginning, the music was brought in the form of the incantations to expel the evils from the body. Homer (42) suggested to use the music for the negative emotion releasing. Or the Pythatorus emotion. And Plato believed that the music is a part of the everyday life that assisting the good health of the body and mind. And Aristotle used of “ Psychocatharsis ” as the emotion and mind purified. The Roman used of the music to stir up the people and army in the battle. And in the Renaissance period, the music was used with medicine therapy and later, there was the music result study by discovering the music effected to the physiological transforming or the respiratory ratio, pulse, blood pressure and the digestion (7).

According to the music for the therapy. There was a report when the music was first brought in the hospital around in 1800. Using the music to reduce the anxiety while was operation and while was anesthetic particular used. Other than this, the music was brought to pacify the shock of the shell-shock soldier from the battlefield

(8) and in 1940 the music was brought for the dentistry to deviate the attention. The patient from uncomfortable feeling and disturbing noise of the tool (7).

The meaning of the music.

The National Association for the Music Therapy (1977) (15) said that the music therapy was using the music to repair, exist and improve the health both of physical and mind of the human.

Buckwalter (1985) (15) said that the music that was used of the therapy should considered the composition of the music that effected to the physical, and mind. Which there are many type of music therapy. The music for relaxing, preferred music and music activated the movement.

Alvin (1991) (43) said that the music was a beautiful thing, able to find everywhere for entertainment and relaxing. The music will effected to mind, physical and emotion. The potency from the music is a great deal. The music brought the listener to the imagination, places, or persons in past and present. The differ music melody able to communicate with each person by no limitation of age, education and physical conditions.

Bampenchit Sangchat (1992) (18) said that the meaning of the music therapy means applied the music with the science principles. To assist the illness condition therapy or disabilities both of physical, mind and social. Along with the health promotion.

Munro (1993) (44) said that the music was sound character consisted of the pitch, tempo, harmony, melody and rhythm to shown the thought, experience, hope and dream,. Which effected to the physical, mind, spirits and human society. The human able to reach onto the music in several levels, from slightly level, emotion level, cerebrally level, and the innermost depth. Other than this, the music effected to the comfortable, movement, disturbance or relaxation.

Sukri Charoensuk (1993) (45) said that the meaning of the music was the art work that human created by relying on the sound to transmitting the artist feeling. The sound of music was a beautiful sound that was an art arrangement

Wallapa Sangkasophon (1993)(12) said that the music is an art of the sound which the human created to reproduce the natural sound or whatever it is. But the sound was arranged systematic and most of all was the music must in the mood to communicate the listener. The music nature are as follow.

1. The music is a mood media that able to meet with ears.
2. The music is part of the culture.
3. The music is the esthetic.
4. The music is the emotion.
5. The music is a science.

Maranto (1993) (14) said that the music therapy should considered the music compositions to suit the patients with the purpose to be used, familiarity, and the preferable of the patient to the music.

Saowanee Sangkasophon (1994) (46) said that the music therapy means of the music and the music composition to adjust the behavior and the capability reinforcement of the body and mind which able to use both of person and patients.

From the definition and the principles from the music therapy used. It may concluded that the music therapy means of the music was applied with the science principles to the illness therapy or the abilities both of physical, mind and social. Along with the health promotion. There are many type of music therapy such as the movement activation music, relaxing music, preferred music, the music therapy used should considered the compositions of the music and the purposes of the therapy used.

The elements of music.

The music was differed by type or kind of the compositions of the music. The qualification of the music also effected to the different listeners. The compositions of the music are,

1.Tone. The sound of music is the potency with the qualification and the advantages to human, divided as follow,

1.1 The pitch or frequency. It is an object vibration until enough frequency to meet with the ears. Which effected to the physical, and mind of the human. The tone level that was high accelerated or high tone will activated or accelerate the work of automatic nerve to be tension or easily confused. While the low tone or smooth may relaxed and calm the mind.

1.2 The volume intensity. Means of the high and low volume to be used for producing the melody. The high volume will activated the emotion and the Endocrine glands related to the sympathetic nerve, the smooth sound gave the tranquil, comfort and the constant loud continued for long time gave the disturbance to the listener causing the fatigue.

2. Melody It is the sequence of musical pith and the distance between the musical tones. The melody of a musical piece contributes to the listener 's emotional response to the piece.

3. Time. It is the music composition with period and the movement feeling, were,

3.1 Tempo. Means of the beat tapping for such song which was popularly to count by 1 minute. Generally, 1 beat has between 50-120 mm. (Metronom measurement) means the music beat timer per minute. Which changed by the various beat levels and the standard used, estimated to the human heart rate between 60-80 times. If the frequency of the beating that counting from the Metronom measurement was faster than the heart rate called the quick rate and slower than the heart rate called the slow rate. The music rate that faster than the heart rate (more than 80-90 times/minute) cause the tension. The slower rate than the heart rate (40-60 times/minute) causing the less confident or anxiety and the normal rate as quick as the heart rate (60-80 times/minute) gave the tranquil (8).

3.2 Rhythm . It is the order in the movement of music . It is most dynamical aspect of music and is a key factor in selecting particular pieces of music for specific purpose. For example, body system are an integral part of human life, and music can play an essential role in harmonizing these rhythms. Rhythm can also cause changes in mood state. Steady, slow repetitive rhythm are thought to exert a hypnotic or relaxing effect on listeners.

4. Harmony. It was many different tones harmonized by rhythm and melody harmonizable such as the chorus or chorusing the different musical instrument. Un-harmonize causing the dissonante, For the harmonizable gave the comfort, warmth and free.

5. Sonority. It is a component of the completed sound. The important issue to indicate the composer to give the tuneful in the song. Or the feeling as limbo in the song listener through the resonant of such music.

6. The expression of music. The music sensing that going between the listener was a heart of music giving the singer and the listener to understand and emotion impressive and the phenomenon of such music such as sadness, sweetness, joyfulness, amused and arouse.

Mechanisms of Action

Definitive explanations for the efficacy of music therapy are not currently known. It has been postulated that there may be a conditioned relaxation response or distraction effect because of enjoyable past associations. Another possible mechanism of action is that auditory stimuli may directly suppress pain neurologically. Music can also encourage distraction or dissociation from unpleasant or painful stimuli through the development of imagery, increase the production of endorphins, and serve as a cue for relaxation. All of these processes are well in keeping with our understanding of the mechanisms of the gate control theory. The potential of music as a practical measure has only begun to be recognized. The goals of music therapy in pain management are to improve the patient's comfort level to assist him or her to regain a sense of perceived personal control and to activity involve the patient in the management of his or her pain.

Clinical Uses and Precautions

Music therapy, like other nonpharmacological methods of pain control, is not meant to be used alone, nor is it meant to be used when pain is already at a peak intensity. Not all patients in pain wish to listen to music

during or before painful episodes, and some find that they either cannot or do not wish to focus on the music. When one discusses the use of music with patients, it is important to ascertain their experience with music, their skills or interest in different types of music, and their current listening abilities. The patients generally fit into one of the following categories :

1. A music performer. The patient has played an instrument, sung in a choir, or even composed music.
2. A music listener. The patient has been an interested listener to music.
3. A music “event – er.” The patient associates music with special events and does not ordinarily listen to music.

The most successful pain relief associated with music tends to happen when the music is carefully chosen according to the preferences of the patient. Not only can the music selection be tailored to the kind of music the patient enjoys, but it can also be selected to match the mood and the needs of the patient. For example, if a patient in pain is also feeling depressed or sad, music that supports that mood may be more acceptable at first, and the patient may then be able to progress into lighter melodies. We recommend instrumental over vocal selections.

Guidelines for Use

Although music is an easy – to – use modality, it is not enough to simply present the music to the patient and instruct the patient to listen to it. A clear set of instructions is required so that the patient will become an active participant in his or her own care. The following guidelines from McCaffery are particularly helpful (6).

1. Listen only to the music.
2. Feel the music lifting you upward.
3. Let each measure rhythmically flow through your body and relax the muscles.
4. Let yourself float through the air with the melody.

It is best to introduce the patient to music therapy before pain becomes intense, or before commencing a painful procedure, such as wound packing.

By encouraging the patient to become involved in the process of active listening, the nurse activates several other cognitive and mental strategies. The patient may conduct his or her own inner dialogue, which can focus attention onto more pleasant and relaxing images. Both the nurse and the patient can measure the effectiveness of music as a treatment modality for pain control by rating the level of distress caused by the pain on a 0 – to – 10 visual analogue or numerical scale before and after the listening session. Patients can then be encouraged to consider what strategies they might employ to increase the benefits at the next session. Some patients prefer to turn the volume up high during periods of severe pain, while others maintain it at a low level to ensure that they keep in tune with external events.

Changes in volume, attention to breathing, and variations in rhythm and tempo, plus the addition or deletion of movements such as toe or finger tapping, have been suggested and used successfully by patients.

Nursing's Role

The use of music requires some equipment, such as a portable cassette player and audio tape that may already be owned by the patient or be easily obtained from in hospital resources. It can be readily explained to patients and family members, and mechanisms for its use place, time, and a quiet setting easily arranged.

The physiological effects of music.

The music effects to every physiological parts. From the study found that the music effects to the heart system and the blood vessels, respiratory, bones and muscles and the metabolic process in the body by the respiratory ratio, heart beat ratio and the blood pressure that was changed from the music, depending on tone level, loudness and music beat (15).

The music tone able to activate to the reaction, which spontaneous such as the rhythm beat along with the music automatically or may observed that the respiratory

was fast by the music beat. Which all these were the reflection beyond the mind power.

From the physiological effects of the music study, it may concluded as follow, (48).

1. Muscles shrink and stronger.
2. Increased or decreased the muscles pulling and the muscles working.
3. Activate the movement of the body by the rhythm.
4. Increased or decreased the responding from external stimulation.
5. Increased or decreased the excretion in the body.
6. Increased or decreased the productivity.
7. Exhausted and fatigue.
8. Increased or decreased the respiratory ratio, the heart best and the blood pressure.
9. Increased or decreased the metabolic, leading an oxygen to the tissues and use the oxygen by minute.

The psychological effects of music.

The music compositions able to change the emotions and influenced the person's mind both of presence of mind and un- presence of mind. The music will adjusted the emotions at the cortical brain part with the imagination and wisdom activation. For the un- presence of mind, the music will adjusted at the thalamus level which this thalamus part considered as the main station of the emotions transmitting and sensing to the cerebral hemishere through the impulse pathway. Therefore, if the music was sent has no mean to the wisdom of the person, consider as that person was unaware, unable to the music influenced in the thalamus level.

Buckwalter et al. (1985) Fischer (1990) and Maranto (1993) (14,15,50) concluded the music advantages to the emotion change as follow,

1. The reaction and the expression, confusion and enthusiastic.
2. Memory activation in past and present and the dream.

3. Emotions control and thought activation.
4. Reduced the melancholy and tension relieved.
5. Reduced the anxiety.
6. Calm, mediate and increased the analyzing.
7. Reduce the loneliness.
8. Increased the creativity and imagination.
9. Relationship promotion with the other persons, giving the patient to the normal.
10. Prevent the mental disease, neurosis.
11. Increased the persuading and the interest.

The said change as above depending on the kind and the mark of the respect to the music that the artist allocated, composed. Therefore, the music therapy was brought. It is a must to study about the mark of the respect of the music. For the appropriated use to meet with the music therapy requirement.

The selection of the music therapy.

The music therapy brought should be the principles to the music selection , the selection should be as follow,(14)

1. The music familiarity. Due to the familiarity of such music with more attracted to the listener.
2. The music preferable. The music that the patient preferred would following with such music more listened.
3. The history and the music relationship. The music is the abstract beauty which difficult to put into words. Because it is each of taste of the different beauty, depending on the particular manner of the person, attention, cognitive, understand and impressive. Other than this, the culture is a part of the music listening to the beauty. The different culture persons will different appreciated the beauty of music (45).

4. The qualities and the music composition. The music manner and the music composition was considerable factors for the music chosen. Due to the music effects to physiological and mind of the listener such as the high pitch music caused the tension to the listener. The low pitch music cause a relaxing to the listener. Other than this, the music beat is as fast as the human heart beat to 60-80 times per minute, producing the clam. If the music beat was faster than the heart beat to 80-90 times per minute would be tension and the music beat slower than the heart beat to 40-60 times per minute would be exhausted and tired.

5. The music selection for the therapy must considered with the music requirement such as the melancholy patient should therapy with the cheerfully music.

6. The physical and mind of the music listener. Due to the music may effected to physiological and mind would be no gain such as the heart disease patient listened to the high pitch music. It may caused the tension and affected to the heart beat.

7. When the patient started to listen the music, should listen before pain. Other than this, while listening for the pain therapy. The listener should tune the volume and the listening should be free of the disturbance from the other things by wearing a head phone.

Music therapy with preferable music.

Music has long been known for its soothing qualities. In recent years it has been the subject of many research studies. As a therapy, music is used to restore, maintain, and improve mental and physical health, according to the National Association for Music Therapy. Music is a natural tool for nurses to use as an adjunct to pain management because of its ease of use and low cost. It is well suited to the practical demands of a wide range of health care settings.

The good music therapy must considered to the various factors as mentioned above. From the literature review found that the important factors that should be realized on the music therapy selection was the preference and music familiar of the patient. Especially the listening requirement for relaxing. Due to an unfamiliar music listening cause the patient felt the new strange with the music.

Herth (1978) (54) said that the music effects will produced the relaxing, related to the kind and the listener appreciated. If the listener Appreciated and interest such music, it would be a better feeling, not to be annoyed which according to **Maranto (1993)** (14) that the dislike music listening will produced the tension and unreleased.

Other than this the influence to the music must considered of the music experiences the person took, and the personal music experience will according to the personal culture as well. Due to the music is a part of the culture, **Sukri Charoensuk (1993)** (45) said that the music is a beauty, melodious, it is an abstract which unable to put into words. Because each person has its own taste of the beauty, depending on the individual character, a personal experienced will influence to the admiration, love, melodious, the beauty happened to each person, the attention, acknowledgement, impressive and the understanding. The culture is a part of the beautiful music listening, the beauty experiences must relying on the culture understanding which was the composition of such art. Because the arts is a part of the culture. The culture understanding effect the arts understanding. Because “such arts suit such community”. The familiarity, traditional, the culture of such community will produce the different music on heart. The listening or listen to Lao Duang Duen song, directly and indirectly everyday will give the familiarity. The more understanding of Lao Duang Duen than the Concerto of Mosart and Betthoven at first listened. The result was the different beauty appreciation. According to the study of **Beck (1991)** (17) about the music effects to reduce the pain of the cancer patient, by arranging 7 different types of easy listening music for the patient selection, were classic, jazz, rock, folk, country western, easy listening, and new age. The study resulted that the music reduce the pain.

Using the preferable music to pain relieved was to attention deviation. Able to describe by using the control gate theory as follow, The sound of music would be sent to the reticular formation to activate the SG cells, bringing the impulse pathway to T cell was blocked. The gate closed, unable to send the pain signal to the central control system. Therefore the music effects to the attention deviation that was sensing the pain less.

Research Related to Music Therapy

Regarding the concept based on mind-body connection to music therapy and its physiological and psychological effects to the listeners, there were many studies which were based on this concept in relation to music therapy for release pain.

Locsin (1981) (16) studied the effect of music on pain relief in postoperative patients. The subjects were 24 female patients undergoing gynecological operation. The subjects were randomly assigned to the experimental group and the control group. The experimental group received the music for 30 minutes at first time, and for 15 minutes every 2 hours for 48 hours after surgery. The study revealed that pain level both for the first 24 hours and 48 hours postoperative period in the experimental group was lower than the control group with statistically significance.

Mulloody et al (1988) (55) studied the effect of the soothing music on pain relief and anxiety in postoperative patient. The subjects were 28 female patients undergoing hysterectomy operation. The subjects were randomly assigned to the experimental group and the control group. The experimental group listened to music. The study revealed that pain level and anxiety level in the experimental group was lower than the control group with statistically significance.

Zimmerman et al (1989) (56) studied the effect of music on pain relief in patient with cancer. The 40 patients with the diagnosis of cancer and chronic pain were recruited to the study. The subjects were randomly assigned to the experimental group and the control group. The experimental group listened to preferred music by headphone for 30 minutes. The study revealed that pain level in the experimental group was lower than the control group with statistically significance.

Stone et al (1989) (7) studied the effect of music on physiological and psychological in critically ill patient at intensive care unit. The 11 males and 11 females patients were recruited to the study. The experimental group listened to preferred music. The music included classical, jazz, popular, soft rock, country and western, gospel and new age. The study revealed that heart rate, systolic blood pressure, pain level and anxiety level in the experimental group was lower than the control group with statistically significance.

Udike and Charles (1990) (57) studied the effect of music on physiological and psychological in plastic surgery patient in the preoperative ambulatory setting. The 10 patients with plastic surgery patient in the preoperative ambulatory setting were recruited to the study. The experimental group listened to music from classical or contemporary music for 30 minutes. The study revealed that systolic blood pressure, mean arterial blood pressure and heart rate in the experimental group was lower than the control group with statistically significance, and the patients reported their emotion state change toward relaxation and calmness.

Beck (1991) (17) studied the effect of preferred music on pain relief in patient with cancer. The subjects were 40 patients with chronic cancer pain. The experimental group listened to preferred music for 45 minutes twice daily for 3 days. The music consisted of 7 categories including classical, jazz, folk, rock, country and western, easy listening, and new age. The study revealed that pain level in the experimental group was lower than the control group with statistically significance.

Radziewicz and Schneider (1992) (59) studied the effect of preferred music on pain relief in Leukemia patient who were bone marrow aspiration procedure. The subjects were 20 patients who were bone marrow aspiration procedure. The experimental group listened to music. The study revealed that pain level in the experimental group was lower than the control group with statistically significance.

Schorr (1993) (60) studied the effect of preferred music on pain relief in Rhumatoid patient with chronic pain. The subjects were 30 Rhumatoid patients. The experimental group received preferred music for 1-2 hours, and the control group was not receive music. The study revealed that pain level in the experimental group was lower than the control group with statistically significance.

In Thailand

Sangchart B. (1985) (11) studied the effect of music on pain relief and on frequency of pain medication taking in postoperative patients during the first 48 hours. The subjects were 30 patients undergoing urological operation. The subjects were randomly assigned to the experimental group and the control group. The experimental group listened to the soothing music for 30 minutes at first time, and for 15 minutes every 2 hours for 48 hours after surgery. The study revealed that pain level

both for the first 24 hours and 48 hours postoperative period and the frequency of pain medication taking in the experimental group was lower than the control group with statistically significance.

Sangkasophon W. (1993) (12) studied the effect of music on pain relief and distress in patient with chronic cancer pain. The subjects were 30 patients with chronic cancer pain. Each subject listened to the soothing music for 30 minutes during the experimental period.. Pain behavioral record form and interview form were completed by the researcher before listened to music and 10, 20, 30 minutes after listened to music. The study revealed that pain level and distress intensity in cancer patient during the experimental period was lower than the control period with statistically significance.

Kittisup C. (1993) (13) studied the effect of music on pain relief and anxiety in open- heart surgery patients. The subjects were 40 patients who admitted in intensive care unit after open- heart surgery for the first 48 hours. The subjects were randomly assigned to the experimental group and the control group. The experimental group listened to Western and Thai classical music for 30 minutes, 2 hours interval for 48 hours after surgery. The study revealed that pain level and anxiety within 48 hours after surgery in the experimental group was lower than the control group with statistically significance.

Suharitdumrong P. (1994) (61) studied the effect of music on reducing anxiety levels in post-operative patients with mechanical ventilator. The subjects were 36 patients post-operative patients with mechanical ventilator in surgical intensive care unit. The subjects were randomly assigned to the experimental group and the control. The experimental group listened to Thai classical music for 17 minutes twice a day and 6 hours interval. The study revealed that the mean score of anxiety and systolic blood pressure in experimental group was lower than the control group with statistically significance.

Limprasert D. (1996) (62) studied the effect of music on pain relief in the labor and the first delivery patients The subjects were 30 patients in the first delivery. The subjects were randomly assigned to the experimental group and the control group. The experimental group listened to the music 6 categories each for 60 minutes.

The music consisted of 6 categories including Thai country music and Thai pop music. The study revealed that pain level in the experimental group was lower than the control group with statistically significance.

Kunlaya M. (1998) (63) studied the effect of music on pain relief in the labor and the first delivery patients. The subjects were 60 patients in the first delivery. The subjects were randomly assigned to the experimental group and the control group. The experimental group listened to the music every 1 hour in first stage of labor. The study revealed that pain level in the experimental group was lower than the control group with statistically significance.

Duangkosum D. (1998) (64) studied the effect of preferred music on pain relief in patients during extracorporeal shock wave lithotripsy. The subjects were 30 patients and were randomly assigned to the experimental group and the control group. The experimental group listened to preferred music. The music consisted of 9 categories. The study revealed that pain level in the experimental group was lower than the control group with statistically significance.

Payaksiri P. (2001) (65) studied the effect of music on pain relief during open wound dressing. The subjects were 10 patients with open wound dressing who was admitted at the surgery ward. The subjects were randomly assigned to 1 of 2 groups. Group 1 listened to music during their first wound dressing, and no music on following day. Group 2 listened to no music during their first wound dressing, and music during their next wound dressing on following day. The procedure in each group was repeated for 2 times. The study revealed that the increasing of pain during open wound dressing with music therapy was lower than those of no music therapy period with statistically significance.

Puang-Ngen S. (2001) (73) studied the effect of music on reducing anxiety levels, promote physiological responses by decreasing heart rate, respiratory rate and blood pressure. The subjects were 30 patients with mechanical ventilator. In the experimental period, the subjects listened to preferred music by headphone for 30 minutes. And the control period, the subjects listened to no music, but the silent headphone were put on. The study revealed that anxiety level, heart rate, respiratory rate, and systolic blood pressure in the experimental period was lower than the control period with statistically significance.

CHAPTER III

MATERIAL AND METHOD

Research Design

This study was a quasi-experimental research of the effects on pain relief in gynecologic patients undergoing uterine curettage at the emergency gynecologic ward, Maharat Nakhonratchasima hospital.

The research applied the post test – only design due to the fact is not able to measure the level of pain before experiment.

Population and Sample

The population were gynecologic patients who had uterine curettage at the emergency gynecologic ward, Maharat Nakhonratchasima hospital. The samples were these population who came during 1st August,2002 to 31st December,2002.

Sampling

Recruited from the inclusion criteria. Simple random sampling by selecting a ball was applied to include cases into the experimental group and the control group until the number of each group reached the sample size.

Inclusion Criteria

The inclusion criteria included with these characteristics.

1. Age 20-50 years old
2. Receive uterine curettage for the first time due to gynecologic indications.
3. Normal hearing
4. Good consciousness
5. Willingness to cooperate
6. No medical complications or diseases which need special care during curettage, i.e. heart diseases

7. Not an emergency case
8. Not receive narcotic and or tranquilizer drugs prior to curettage.

Exclusion Criteria

Case with severe complications after curettage, i.e. severe case with bleeding, unconsciousness.

Data collection

Data collection procedure was conducted in the following sequence:

1. A letter from the Faculty of Graduate Studies, Mahidol University is submitted to the director of Maharat Nakhonratchasima hospital.
2. The researcher got the permission from the Faculty of Graduate Studies, Mahidol University and explained the study to the director of the hospital, the head of nurses of the hospital and the head of emergency gynecologic ward and request for the cooperation to collect data.
3. Collect data from the patients who received curetted in condition of gynecological diseases.
4. Data analysis of variables.
5. Conclude the research result.

Variable and Measurements

Dependent variable was the pain from uterine curettage

Independent variable were :

1. General characteristics of patients undergoing uterine curettage included :
 - 1) Age
 - 2) Marital Status
 - 3) Number of children
 - 4) Education
 - 5) Occupation

- 6) Family Income
2. Condition uterine curettage characteristics
 - 1) Diagnosis
 - 2) Time
 - 3) Pulse rate
 - 4) Systolic blood pressure
 - 5) Diastolic blood pressure
 - 6) Average blood pressure.
 3. Music therapy

Materials

A tape player and earphones with volume control.

1. Cassettes tape of recorded music for 60 minutes were selected for 7 types of music. The steps for selection of music were:
 - 1.1 Studying from text book, journal, research and the expert in music towards the music elementary, i.e. types and musical characteristics.
 - 1.2 Selected and surveyed for type of musics by interviewing 20 patients who were curretted at the emergency gynecologic ward, Maharat Nakhonratchasima hospital in the pilot study.
 - 1.3 Testing for validity of preferred by an expert in music.
2. The questionnaires were constructed to collect data which included:
 - 2.1 Personal data
 - 2.2 Satisfaction with music
3. The Simple Descriptive Scale and Stewart's Pain-color Scale which was modified by Udomthavornsuk P. (19) was applied to measure pain. The red and number were applied for level of increasing pain and divided into 11 levels (0-10th

number), 0 meant no pain, 1st meant mild pain and the increasing pain with increasing number.

Statistical Methods

Sample size estimation

The estimation of sample size was based on the following formula (69)

$$n = \frac{(Z_{\alpha/2} + Z_{\beta})^2 \sigma^2}{(\mu_1 - \mu_0)^2}$$

n = Estimated sample size

σ^2 = Variance of data population

$\mu_1 - \mu_0$ = The difference mean of dependence variable between 2 groups

In this study, The level of statistically significance was $\alpha = 0.05$. From the pilot study which was done in 10 patients in each group at the same place, it was found that the variance of level of pain from curettage was 1.29 and the difference of mean of pain scores between the experimental groups and the control groups were 1.2.

$$\sigma^2 = 1.29$$

$$\mu_1 - \mu_0 = 1.2$$

$$Z_{\alpha/2} = 1.96 \text{ (Set } \alpha = 0.05)$$

$$Z_{\beta} = 1.645 \text{ (Set } \beta = 0.05)$$

Substitution in the formula

$$n = \frac{(1.96 + 1.645)^2 (1.29)}{(1.2)^2}$$

$$n = \frac{12.99(2.58)}{1.44}$$

$$n = 23.27$$

Thus, the number of patients in this study was at least 24 patients for each group. Concerning incomplete data or data loss, the number of 30 patients in each group was applied.

Study location

The emergency gynecologic ward, Maharat Nakhonratchasima hospital.

Statistical Analysis

Data analysis was done by using SPSS for window version 7.5.0 The steps of data analysis were as follow;

1. General characteristics of patients between 2 groups were described using mean and standard deviation, frequency and percentage.
2. Comparison of pain score, pulse rate and blood pressure between groups by independent t-test, chi-square test.
3. Pair t-test was used for comparing the change of the before and after in pulse rate and blood pressure (systolic, diastolic and average blood pressure).

CHAPTER IV

RESULTS

There were 60 patients undergoing gynecological uterine curettage at emergency gynecological ward in Maharat Nakhonratchasima Hospital in each group(experimental group = 30 cases and control group = 30 cases). The results were divided into 2 parts according to the objectives.

I. Characteristics of patients.(general and condition before and during curettage)

1.1 General characteristics.

Most of patients in each group were in the age group of more than 45 years (50% in both group) and were married (96.7% in experimental group and 100.0 %in control group). They had 0-2 number of children (60.0% and 53.3 %) and had educational level of 6 years or less (experimental group = 80.0 % and control group = 66.7 %). In the experimental group, most of them were fix time (53.3 %) but in the control group, most of them were no fix time (63.3 %). Most of the patients had family income of 6,001 baht / month or more (experimental group = 30.0 % and control group = 43.3 %). There was no statistically significant difference in general characteristics between both groups. (Table 1.)

Table 1 General characteristics of patients

Characteristics	Experiment	Control	All
	n(%)	n(%)	N(%)
Age (years)			
< 35	6 (20.0)	5 (16.7)	11(18.3)
36-44	9 (30.0)	10(33.3)	19(31.7)
> 45	15(50.0)	15(50.0)	30(50.0)
X ± SD	42.2 ± 6.04	43.6 ± 6.93	42.90 ± 6.48
Min – Max	29-50	27-50	27–50
$\chi^2 = 0.144$ df = 2 P-value = 0.931			
Marital Status			
Single	1(3.3)	-	1(1.7)
Married	29(96.7)	30(100)	59(98.3)
$\chi^2 = 1.017$ df = 1 P-value = 0.313			
Number of children			
≤2	18(60.0)	16(53.3)	34(56.7)
>2	12(40.0)	14(46.7)	26(43.3)
$\chi^2 = 0.271$ df = 1 P-value = 0.795			

Table 1 General characteristics of patients. (cont.)

Characteristics	Experiment	Control	All
	n(%)	n(%)	N(%)
Education (years)			
≤6	24(80.0)	20(66.7)	44(73.3)
>6	6(20.0)	10(33.3)	16(26.7)
$\chi^2 = 1.364$ df = 1 P-value = 0.243			
Occupation			
Fix time	16(53.3)	11(36.7)	27(45.0)
No fix time	14(46.7)	19(63.3)	33 (55.0)
$\chi^2 = 1.653$ df = 1 P-value = 0.456			
Family Income (Bath / month)			
< 2000	7(23.3)	4(13.3)	11(18.3)
2001-4000	7(23.3)	7(23.3)	14(23.3)
4001-6000	7(23.3)	6(20.0)	13(21.7)
> 6001	9(30.0)	13(43.3)	22(36.7)
X ± SD	(8,050±9,924.77)	(8,300±6,270.62)	(8,175±8,267.16)
Min- Max	1,000- 40,000	3,000-30,000	1,000-40,000
$\chi^2 = 4.257$ df = 3 P-value = 0.075			

1.2 Conditions before uterine curettage

Among both groups, the most common diagnosis was abnormal uterine bleeding (experimental group = 83.3% and control group = 70.0 %) There was no statistically significant differences in diagnosis between both groups (Table 2).

Pulse rate before curettage among experimental group was 81 – 90 beats / minute in 50.0 % of patients while in the control group pulse rate was 71-80 beats / minute in 50.0 % of patients. The mean of pulse rate before curettage in experimental group was 79.40 beats / minute and control group was 80.20 beats / minute .There was no statistically significant differences in pulse rate before curettage between both groups.

Systolic blood pressure before curettage was 111 – 120 mmHg in 40.0 % of experimental group and 46.7 % in control group. The mean systolic blood pressure before curettage in the experimental group was 114.67 mmHg and the control group was 117.47 mmHg. Diastolic blood pressure before curettage was 71-80 mmHg in 53.3 % in the experimental group and 70.0 % in the control group. The mean diastolic blood pressure before curettage in the experimental group was 75.00 mmHg and in the control group was 79.33 mmHg. The average blood pressure before curettage was 91-100 mmHg 46.7 % in both groups. The mean of average blood pressure before curettage in the experimental group was 89.33 mmHg. and in the control group was 92.04 mmHg. There was no statistically significant difference between blood pressure of both groups (Table 2).

Table 2 Conditions before uterine curettage

Variables	Experiment	Control
	n(%)	n(%)
	Total=30	Total=30
Diagnosis		
Abnormal Uterine Bleeding (Hypermenorrhea , Menometrorrhagia)	25(83.3)	21(70.0)
Other (Myoma Uteri , Peri- Post menopausal Bleeding)	5(16.7)	9(30.0)
$\chi^2 = 2.492$ df = 1 P-value = 0.257		

Table 2 Conditions before uterine curettage (cont.)

Variables	Experiment	Control
	n(%) Total=30	n(%) Total=30
Pulse rate before curettage (beats/minute)		
61-70	1(3.3)	2 (6.7)
71-80	14(46.7)	15(50.0)
81-90	15(50.0)	13(43.3)
MEAN ± SD	79.40 ± 6.44	80.20 ± 2.59
MIN – MAX	60-90	76-84
t-test = 0.632 df = 58 P-value = 0.530		
Systolic blood pressure before curettage (mmHg.)		
≤ 100	1(3.3)	2(6.7)
101-110	8(26.6)	8(26.7)
111-120	12(40.0)	14(46.7)
121-130	9(30.0)	6(20.0)
> 131	-	-
MEAN ± SD	114.67± 7.86	117.47± 7.49
MIN – MAX	100-128	100-128
t-test = 1.412 df = 58 P-value = 0.163		

Table 2 Conditions before uterine curettage (cont.)

Variables	Experiment	Control
	n(%) Total=30	n(%) Total=30
Diastolic blood pressure before curettage (mmHg.)		
<70	7(23.3)	9(30.0)
71-80	16(53.3)	21(70.0)
81-90	6(20.0)	-
91-100	1(3.3)	-
MEAN ± SD	75.00 ± 5.72	79.33 ± 5.47
MIN – MAX	60-80	70-100
t-test = 2.443 df = 58 P-value = 0.180		
Average blood pressure before curettage (mmHg.)		
71-80	1 (3.3)	2 (6.7)
81-90	11(36.7)	13(43.3)
91-100	14(46.7)	14(46.7)
101-110	4(13.3)	1(3.3)
MEAN ± SD	89.33 ± 5.27	92.04 ± 6.64
MIN – MAX	73.33-96.00	80.00-108.66
t-test = 1.753 df = 58 P-value = 0.852		

1.3 Conditions during uterine curettage .

Among both groups, the duration of curettage was 4 – 10 minutes. Mean time of curettage in the experimental group was 7.10 minutes compared to 7.67 minutes in the control group. There was no statistically significant difference in the duration of curettage between both groups (Table 3).

Table 3 Conditions during uterine curettage

Variables	Experiment	Control
	n(%)	n(%)
	Total=30	Total=30
Time(minute)		
4	2(6.7)	-
5	6(20.0)	-
6	3(10.0)	4(13.3)
7	4(13.3)	8(26.7)
8	8(26.7)	11(36.7)
9	5(16.7)	5(16.7)
10	2(6.7)	2(6.7)
MEAN ± SD	7.10 ± 1.77	7.67 ± 1.21
MIN – MAX	4-10	6-10
t-test = 1.447 df = 52 P-value = 0.154		

2. Effect of music on condition of patients undergoing curettage

(pain score, pulse rate and blood pressure)

2.1 Pain score

Pain scores were between 3 - 10 in both groups. The mean pain scores in the experimental group was 5.83 while in the control group was 6.67. There was statistically significant differences between pain scores of both groups. (P-value = 0.035) (Table4).

Table 4 Effect of music on pain among patients undergoing curettage.

Variables	Experiment	Control
	n(%)	n(%)
	Total=30	Total=30
Pained scores		
3	1(3.3)	-
4	4(13.3)	-
5	12(40.0)	2(6.7)
6	2(6.7)	9(30.0)
7	4(13.3)	12(40.0)
8	5(16.7)	6(20.0)
9	1(3.3)	1(3.3)
10	1(3.3)	0(0)
MEAN ± SD	5.83 ± 1.74	6.67 ± 1.18
MIN – MAX	3-10	5-9
t-test = 2.166 df = 58 P-value = 0.035*		

2.2 Pulse rate and blood pressure

Pulse rate after curettage in the experimental group was 81 – 90 beats / minute in 46.7 % of patients while in the control group pulse rate was 71-80 beats / minute in 60.0 % of patients. The mean pulse rate after curettage in the experimental group was 80.13. beats / minute compared to 80.56 beats / minute in the control group. There was no statistically significant difference in pulse rate after curettage between both groups (Table 5).

Systolic blood pressure after curettage was 121 – 130 mmHg in 46.7 % of the experimental group and 50.0% of the control group. The mean systolic blood pressure after curettage in experimental group was 116.93 mmHg compared to 121.07 mmHg in the control group. There was statistically significant difference between systolic blood pressure after curettage of both groups. (P-value = 0.024) (Table 5).

Diastolic blood pressure after curettage was 71-80 mmHg in 50.0 % of the experimental group and 53.3 % of the control group. The mean diastolic blood pressure after curettage in experimental group was 76.67 mmHg compared to 80.33mmHg in the control group. There was no statistically significant difference between diastolic blood pressure after curettage of both groups (Table 5).

The average blood pressure after curettage was 81-90 mmHg in 63.3 % of the experimental group and 91-100 mmHg in 43.3 % of the control group. The mean average blood pressure after curettage in experimental group was 88.89 mmHg compared to 92.91mmHg in the control group. There was statistically significant difference between average blood pressure after curettage of both groups. (P-value = 0.007) (Table 5).

Table 5 Effect of music on Pulse rate and blood pressure among patients undergoing curettage

Variables	Experiment	Control
	n(%)	n(%)
	Total=30	Total=30
Pulse rate after curettage (beats / minute)		
61-70	3(10.0)	-
71-80	13(43.3)	18(60.0)
81-90	14(46.7)	12(40.0)
MEAN ± SD	80.13 ± 6.15	80.56 ± 2.29
MIN – MAX	64 -90	76-84
t-test =1.638 df = 58 P-value = 0.750		
Systolic blood pressure after curettage (mmHg.)		
≤ 100	-	-
101-110	6(20.0)	4(13.3)
111-120	10(33.3)	10(33.3)
121-130	14(46.7)	15(50.0)
> 131	-	1(3.3)
MEAN ± SD	116.93 ± 6.88	121.07 ± 6.92
MIN – MAX	108-130	108-132
t-test = 2.319 df = 58 P-value = 0.024*		

Table 5 Effect of music on Pulse rate and blood pressure among patients undergoing curettage (cont.)

Variables	Experiment	Control
	n(%)	n(%)
	Total=30	Total=30
Diastolic blood pressure after curettage (mmHg.)		
< 70	8(26.6)	14(46.6)
71-80	15(50.0)	16(53.3)
81-90	7(23.3)	-
91-100	-	-
MEAN ± SD	76.67 ± 7.8	80.33 ± 7.65
MIN – MAX	60-90	60-80
t-test = 2.136 df = 58 P-value = 0.371		
Average blood pressure after curettage (mmHg)		
71-80	1(3.3)	-
81-90	19(63.3)	12(40.0)
91-100	10(33.3)	13(43.3)
101-110	-	5(16.7)
MEAN ± SD	88.89 ± 4.89	92.91 ± 6.20
MIN – MAX	76.00-97.33	81.33-103.33
t-test = 2.788 df = 58 P-value = 0.007*		

2.3 Change in pulse rate and blood pressure between before and after curettage

There was no change in pulse rate after curettage in 50.0% of the experimental group and 46.7% of the control group. Pulse rate change after curettage increased in 23.3% of the experimental group and 36.6% of the control group. The degree of increase of 1-5 beats / minute in pulse rate was found in 23.3% of the experimental group and 33.3% of the control group. The degree of decrease of 1-5 beats / minute in pulse rate was found in 26.7% of the experimental group and 16.7% of the control group. The mean change of pulse rate in the experimental group was 0.73 ± 2.0 compared to 0.67 ± 1.44 in the control group.

Systolic blood pressure change after curettage increased in 80.0% of the experimental group and 89.9% of the control group. The degree of increase of 1-10 mmHg in systolic blood pressure was found in 73.3% of the experimental group and 76.6% of the control group. The degree of decrease of 1-10 mmHg in systolic blood pressure was found in 6.7% of the experimental group and 3.3% of the control group. The mean change of systolic blood pressure in the experimental group was 2.27 ± 5.55 compared to 3.60 ± 3.46 in the control group.

There was no change in diastolic blood pressure after curettage in 63.3% of the experimental group and 53.3% of the control group. Diastolic blood pressure change after curettage increased in 26.7% of the experimental group and 43.3% of the control group. The degree of increase of 1-5 mmHg in diastolic blood pressure was found in 20.0% of the experimental group and 33.3% of the control group. The degree of decrease of 1-5 mmHg in diastolic blood pressure was found in 10.0% of the experimental group and 3.3% of the control group. The mean change of diastolic blood pressure in the experimental group was -1.0 ± 7.12 compared to -1.67 ± 5.31 in the control group.

The average blood pressure change after curettage increased in both group. The degree of increase of 1-10 mmHg in average blood pressure was found in 66.7% of the experimental group and 80.0% of the control group. The degree of decrease of

1-10 mmHg in average blood pressure was found in 10.0% of both group. The mean change of average blood pressure in the experimental group was -0.44 ± 4.39 compared to 0.87 ± 5.15 in the control group. There was no statistically significant difference between change in pulse rate and blood pressure after curettage of both groups (Table 6).

Table 6 Effect of music on change of pulse rate and blood pressure among patients undergoing curettage

Variables	Experiment	Control
	n(%) Total=30	n(%) Total=30
Change of pulse rate after curettage (beats / minute)		
+6-10	-	1(3.3)
+1-5	7(23.3)	10(33.3)
0	15(50.0)	14(46.7)
-1-5	8(26.7)	5(16.7)
-6-10	-	-
MEAN ± SD	0.73 ± 2.0	0.67 ± 1.44
MIN – MAX	-2-2	-2-8
t-test = 1.780 df = 58 P-value = 0.080		
Change of systolic blood pressure after curettage (mmHg.)		
+11-20	2 (6.7)	4(13.3)
+1-10	22(73.3)	23(76.6)
0	4 (13.3)	2 (6.7)
-1-10	2 (6.7)	1(3.3)

Table 6 Effect of music on change of pulse rate and blood pressure among patients undergoing curettage (cont.)

Variables	Experiment	Control
	n(%) Total=30	n(%) Total=30
-11-20	-	-
MEAN ± SD	2.27 ± 5.55	3.60 ± 3.46
MIN – MAX	-1-11	-1-14
t-test = 1.117 df = 58 P-value = 0.268		
Change of diastolic blood pressure after curettage (mmHg.)		
+6-10	2(6.7)	3(10.0)
+1-5	6(20.0)	10(33.3)
0	19(63.3)	16(53.3)
-1-5	3(10.0)	1(3.3)
-6-10	-	-
MEAN ± SD	-1 ± 7.12	-1.67 ± 5.31
MIN – MAX	-3-7	-1-9
t-test = 0.411 df = 58 P-value = 0.682		
Change of average blood pressure after curettage (mmHg).		
+6-10	2(6.7)	3(10.0)
+1-5	18(60.0)	21(70.0)
0	7(23.3)	3(10.0)

Table 6 Effect of music on change of pulse rate and blood pressure among patients undergoing curettage (cont.)

Variables	Experiment	Control
	n(%) Total=30	n(%) Total=30
-1-5	3(10.0)	2(6.7)
-6-10	-	1(3.3)
MEAN ± SD	-0.44 ± 4.39	0.87 ± 5.15
MIN – MAX	-5-8.66	-8-9.33
t-test = 1.061 df = 58 P-value = 0.293		

* $\alpha = 0.05$

2.4 Preferred music and patients, feeling when listening to music among experimental group.

Among experimental group, most of the patients preferred to listen to vocal (96.6 %) , most of which were Thai country music (76.7 %) . Most of them agreed that the music had the effect of pain relief (86.7 %) and 93.3% felt satisfactory with the music. Although no one felt no annoyed when wearing earphone but 23.3% preferred listening from loundspeaker and 73.3%wanted to listen to music again if they had next curettage . Most of them believed that the action of music is changing attention from the procedure (46.7 %) and 33.3% felt that music make them forgot the pain while 10% felt entertained and relief of fear (Table 7).

Table 7 Music types and characteristics, the feeling when listening preferred music among experimental group

Lists	No.	Percent.
Characteristics of prefer music ensembles which were chosen.		
1.Vocal	29	96.6
1.1 Single		
Thai Pop music	1	3.3
Thai Country music	23	76.7
International music	-	-
Folk music(Korat music)	2	6.7
1.2 Group		
Thai Chorus music	3	10.0
2. Instrumental	1	3.3
2.1 Thai Classic music (Instrumental)	-	-
2.2 International music (Instrumental)	1	3.3
Effect of prefer music on pain relief when undergoing uterine curettage		
Agree	26	86.7
Disagree	4	13.3
Feeling when listening music during curretted.		
Annoyed	2	6.7
Satisfactory	28	93.3

Table 7 Music types and characteristics, the feeling when listening preferred music among experimental group (cont.)

Lists	No.	Percent.
Feeling when wearing an earphone		
Annoyed	-	-
Satisfactory	30	100.0
Prefer to listen from loudspeaker		
Yes	7	23.3
No	23	76.7
Want to listen music in the next curettage.		
Yes	22	73.3
No	1	3.3
Uncertain	7	23.3
Action of music on pain relief		
Change attention from procedure	14	46.7
Forget the pain	10	33.3
Feel Entertained	3	10.0
Relief of fear	3	10.0

CHAPTER V

DISCUSSION

The discussion will be presented in 2 parts.

1. Methodology of the study

2. Results of the study

1. Methodology of the study

Research design

This research is designed as a quasi – experimental study. It is different from a true experimental study that the intervention can not be given without the knowledge of the patients and the evaluator. This research is a post test – only design. It was designed this way because the researcher can not be able to measure pain before the experiment and the patients of the experimental group will be listened the music before feeling pain. Both control and experimental group were similar in population characteristics as a result of randomization so that these factors were controlled.

Population and sample

The population were gynecologic patients who came to receive uterine curettage at the emergency gynecology ward, Maharat Nakhonratchasima Hospital. The samples were those population who came during 1st August – 31st December 2002. A pilot study was done and found that the mean of pain score differences was 1.2 and variance of pain score difference were 1.29. By using these figures in the formula the sample size was calculated. The sample size was 30 women in each group and enough for the interpretation of the results of study regarding pain score during curettage.

The research instrument

The instrument was a questionnaires which contained population characteristics, feeling during listening to music and pain assessment. The measurement of pain in this study may not be a perfect one. Pain is a condition which has some difficulty to assess. In this study we used the pain assessment score which was modified from pain colour meter of Udomthavornsuk P.(19), Vutthanon N. (67), Thato S. (66), whose reliability coefficients were 0.79, 0.86 and 0.89 respectively. Seven tape recorders and players with loudness adjustment earphones were used alternatively to play the music for the patients. All instruments were tested for validity by the musical experts.

Data collection

Data was collected by the researcher and there was only one doctor who do curettage for every patients. Therefore, the results of the study were reliable.

2. Results of the study

The results will be presented in 2 parts according to the objectives

Objective 1: Effects of music on pain among patients who had been receiving gynecologic uterine curettage.

1.1 Pain score

The mean pain score was statistically significant different between the both groups (p-value 0.035). The mean pain score was 5.83+-1.74 in the experimental group and 6.67+-1.18 in the control group. The procedure of uterine curettage was the same in both groups because it was done by only one doctor using the same instruments and the mean duration of curettage was not statistically significant difference between both groups (p>0.05).The results were in accordance with the research hypothesis. The patients who listened to music had lower pain score when compared with the patients who did not . It was revealed that the preferred music could relief pain by the theory of gate pathway thus the pain score of the experimental group was lower than the control group. It may

be due to the fact that the curettage stimulates damaged tissues to excrete substances which cause pain. After that, the exchange of cells would create pain sensations which will be sent from free nerve ending to the spinal cord, dorsal horn, thalamus and cerebral cortex. These sensations will be interpreted as pain. Meanwhile, the music is sent through the ears to the auditory cortex for interpretation. During this period, the pain sensation will be sent to the thalamus, hypothalamus, and limbic system. The thalamus will select what is more interested between the music and the concentration on pain. The limbic system and particular the hypothalamus would help adjust the emotions and feelings. Thus, the persons shift their attention from pain to the music. These sensations will be interpreted as pain and helped for pain reduction, change attention from procedure, feel entertained and relaxation.

The results were accordance with Locsin (16) and Mulloody et al.,(55) who studied the effect of preferred music on pain in the patients who were operated surgically due to gynecological diseases. They found that pain level in experimental group was lower than the control group with statistically significance. Zimmermon et al.(56) and Beck(17) who studied the effect of music on pain in the chronic cancer patients, found that pain level in experimental group was lower than the control group with statistically significance. Effects of preferred music on significant pain reduction were demonstrated in other literatures such as Radziewicz & Schnerider(59) in bone marrow aspiration procedure and Schorr(60) in rheumatoid patients. In Thailand, effects of preferred music in pain reduction were demonstrated in the study of Sangchat B. (11) who studied patients undergoing urologic operative, Kittisub C.(13) who studied patients of heart disease, Limprasert D. (62) and Kulaya M. (63) who studied patients in labor pain, Duangkosum D. (64) who studied patients during extracorporeal shock wave lithotripsy, Payaksriri P. (65) studied the effect of music on pain in the patients who had open wound dressing. Both found that music could reduce pain among their patients when compared to control.

1.2 Pulse rate and blood pressure

Before the procedure of uterine curettage, pulse rate and blood pressure of the experiment group were lower than the control group but it was not statistically significant difference ($p > 0.05$).

After the procedure of uterine curettage, pulse rate and diastolic blood pressure were not statistically different between both groups while systolic blood pressure and average blood pressure were lower in experimental group than the control group which was statistically significant difference (p-value 0.024, 0.007). In the experimental group, the mean of systolic blood pressure was 116.93 ± 6.88 mmHg. compared to 121.07 ± 6.92 mmHg. in the control group. The mean average blood pressure was 88.89 ± 4.89 mmHg. in the experimental group compared to 92.91 ± 6.20 mmHg. in the control group.

Mechanism of pain from curettage may be due to the fact that the curettage stimulate damaged tissues to excrete substances which cause pain. The physiological response was that of sympathetic arousal, that was, vasoconstriction, the body adjusted by increased blood pressure and increased heart rate.

The results were accordance with Uplike(57) who studied the effect of preferred music on physiology in the patients who were admitted in Critical Care Unit. They found that systolic blood pressure and mean arterial blood pressure in experimental group were lower than the control group with statistical significance. Suhatadumrong P. (61). who studied the effect of music on reduction of stress in the post operative patients who were on endotracheal tube and mechanical ventilation. They found that systolic blood pressure in experimental group was lower than the control group with statistical significance.

The significant lower systolic blood pressure and average blood pressure among the patients in the experimental group was interpreted as the relief effect of music that the patient listening during the procedure. Systolic blood pressure and average blood pressure were two sensitive parameter that reflected pain or anxiety. In contrast pulse rate and diastolic blood pressure were not sensitive enough to demonstrate the changes and the effects of music in this experiment.

As for the before and after change in pulse rate, diastolic blood pressure, systolic blood pressure and average blood pressure in both groups, it was found that the changes were not statistically significant differences between both groups. These parameters may not be sensitive enough to show the difference.

Objective 2: Opinions of patients toward the music.

Most of the patients would like to listen to Thai Country Music and 86.7% agreed that the music had the effect of pain relief. Most of the patients (93.3%) felt satisfied with the music during the curettage. As the study was conducted in Maharaj Nakhonratchasima hospital in the Northeastern part of Thailand. Most patients lived around that area of Nakhonratchasima province where Thai Country Music was prevalent and popular. So it is not astonishing that most patients would like to listen to Thai Country Music.

Their opinions about the effects of music were that, 46.7% believed that it diverted attention, 33% said that music made them forget about the procedure, 10% said that they felt entertained and relief of fear and 73.3% wanted to listen to music again if they had next curettage.

The component of pain may be integrated with other factors, such as fear, anxiety, attention etc. Pain relief may be operated by several ways such as by medication, meditation, change attention etc.

Results of this study showed that if the patients listen to the preferred music, it would divert attention and pain relief according to Herth (54), that is, the music made relaxation related to who preferred music.

CHAPTER VI

CONCLUSION

This study was a quasi-experimental study. The purpose of this study was to determine the effects of music on pain relief in gynecologic patients undergoing uterine curettage from 1st August, 2002 to 31st December, 2002 at the emergency gynecology ward, Maharaj Nakhonratchasima hospital. The samples were the women 20-50 years old, who were cured in condition with gynecological disease, attended by curettage was the first. The patients were randomly allocated into 2 groups, experimental group (n=30) and control group (n=30). The experimental group would receive advice and choose the preferred music to listen to during curettage while the control group did not receive any advice and music. Pulse rate and blood pressure before and after uterine curettage were recorded. Pain score was used to determine level of pain from curettage. General characteristics of patients were analyzed by using percentage, mean and standard deviation. Chi-square test, t-test and pair t-test were used for hypothesis test of association.

The instruments used in the study were experimental instruments and questionnaires. The experimental instruments were seven recorders and player with loudness adjustment earphones. The questionnaires were the population characteristics, the feeling during listening music and the pain assessment.

The results of the study showed that the pain scores, systolic blood pressure and average blood pressure in the experimental group decreased significantly greater than in the control group (p-value 0.035, 0.024, 0.007) by t-test analysis. Change in pulse rate and blood pressure between before and after curettage in the control group increase greater than in the experimental group but with no statistically significant difference ($p > 0.05$) by Pair t-test analysis. Most of patients preferred Thai Country Music and felt satisfactory with the music during uterine curettage and music helped pain relief by change attention from procedure, feel entertained and relaxation.

Recommendation for Application

Every gynecologic patients who will receive uterine curettage should receive advice and choice of music to listen to during the procedure.

The benefits of music therapy should be addressed and developed as a standard of care in every possible areas of treatment and intervention.

Recommendation for Further Research

1. The effects of music on pain and anxiety in other gynecologic patient groups.
2. The effects of music video on pain for change attention from procedure.
3. Comparison between the use of ear phones and loud speakers to fit the patients requirement.

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APPENDIX

APPENDIX A

แบบฟอร์มยินยอมให้ทำการศึกษา

ข้าพเจ้า(นาง/นางสาว).....นามสกุล.....
อายุ.....ปี เป็นกลุ่มตัวอย่างในการทำวิจัยเรื่อง ผลของดนตรีที่ชอบต่อการลดความปวดในผู้ป่วย
ที่ได้รับการชูดมคลุกทางนรีเวชกรรม ของ นางมณฑารพ สระแกทอง นักศึกษาปริญญาโทสาขา
การเจริญพันธุ์และวางแผนประชากร คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล
ข้าพเจ้าได้รับคำอธิบายถึงวัตถุประสงค์ วิธีการ ระยะเวลาของการศึกษาวิจัยและ
ประโยชน์ของการศึกษานี้เป็นอย่างดีและทราบว่า การวิจัยครั้งนี้จะไม่กระทบกระเทือนต่อการ
รักษาพยาบาลที่ได้รับ โดยที่ข้าพเจ้าสามารถบอกเลิกการเป็นกลุ่มตัวอย่างของการวิจัยได้ตามความ
ต้องการของข้าพเจ้า

ลงชื่อ.....

(.....)

วันที่.....

ลงชื่อ.....

(.....)

วันที่.....

APPENDIX B

แบบบันทึกข้อมูลทั่วไป

ผู้ป่วยรายที่.....บันทึกวันที่.....

กลุ่ม ทดลอง ()

ควบคุม ()

1. เลขที่โรงพยาบาล.....
2. อายุ.....ปี
3. ศาสนา..... เชื้อชาติ.....
4. สถานภาพสมรส.....
5. จำนวนบุตร.....คน
6. ระดับการศึกษา.....
7. อาชีพ.....
8. รายได้ของครอบครัว.....บาท / เดือน
9. การวินิจฉัยโรค.....
10. ระยะเวลาที่ได้รับการชูดมดลูก.....นาที

APPENDIX C

แบบประเมินการรับรู้การปวดโดยใช้มาตรสรีวัดระดับความเจ็บปวด

ชื่อนามสกุล.....

วันที่กลุ่ม

คำอธิบาย ภาพที่เห็นข้างล่างคือมาตรสรีวัดระดับความเจ็บปวด โดยใช้วัดความรู้สึกปวดของท่าน เมื่อได้รับการขูดมดลูก ตัวเลขมีค่าตั้งแต่ 0- 10 ที่ใช้แทนความรู้สึกปวด โดยความรุนแรงของความปวดจะเพิ่มขึ้นเรื่อยๆเมื่อตัวเลขเพิ่มขึ้นและพื้นที่สีแดงที่เพิ่มมากขึ้น

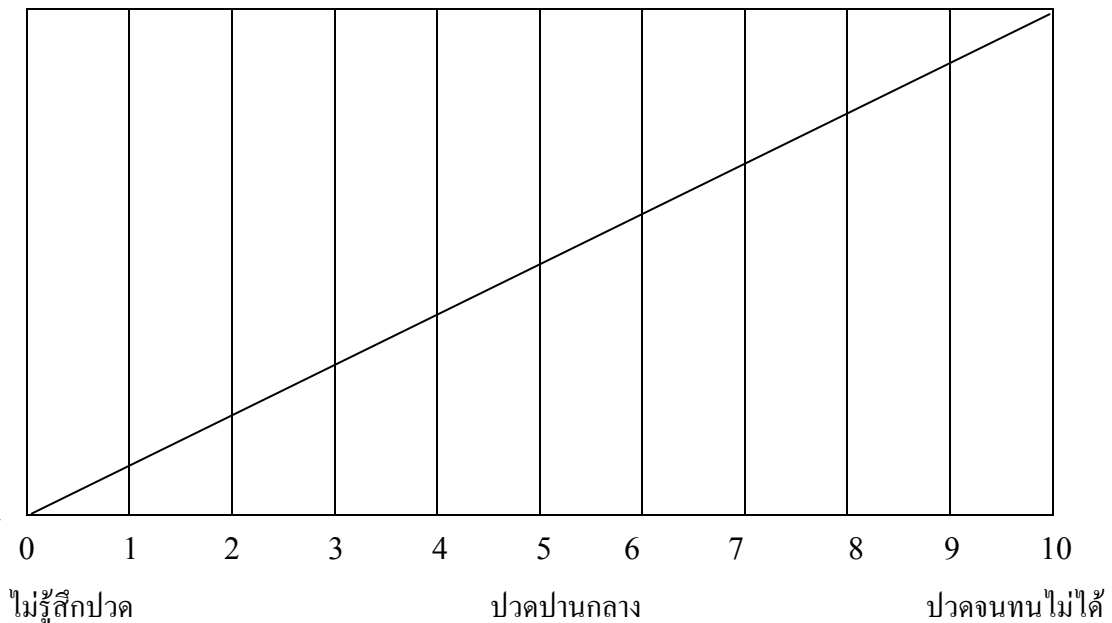
คะแนน 0 หมายถึง ไม่มีความรู้สึกปวด

คะแนน 5 หมายถึง รู้สึกปวดปานกลาง

คะแนน 10 หมายถึง รู้สึกปวดมากจนทนไม่ได้

ขอให้ท่านประเมินการรับรู้ความปวด โดยเลือกตัวเลขใดก็ได้ที่ตรงกับความรู้สึกของท่าน

ขณะได้รับการขูดมดลูกมากที่สุด



แบบสัมภาษณ์ความรู้สึกเกี่ยวกับการฟังดนตรี

1. ตามปกติท่านชอบดนตรีประเภท

ดนตรีไทยสากล ()

ดนตรีสากล ()

ดนตรีไทยเดิม ()

ดนตรีไทยลูกทุ่ง ()

ดนตรีพื้นบ้านเพลงโคราช ()

2. ลักษณะดนตรีที่ท่านชอบเป็นแบบใด

มีเนื้อร้อง ()

บรรเลง ()

ประสานเสียง ()

3. ท่านคิดว่าดนตรีมีผลต่อความปวดในการขูดมดลูกหรือไม่.....

4. ขณะฟังดนตรีในการขูดมดลูกท่านรู้สึกรำคาญหรือไม่.....

5. ถ้าเลือกได้ท่านต้องการฟังดนตรีขณะขูดมดลูกในครั้งนี้นี้หรือไม่.....

เพราะเหตุใด.....

6. ท่านรู้สึกรำคาญจากการใส่หูฟังหรือไม่.....

7. ถ้าเปิดเป็นวิทยุฟังจะดีกว่าหรือไม่.....

8. ท่านต้องการฟังดนตรีเมื่อมารับการขูดมดลูกครั้งต่อไปหรือไม่

ต้องการฟัง ()

ไม่ต้องการฟัง ()

ฟังหรือไม่ฟังก็ได้ ()

9. ท่านมีข้อคิดเห็นหรือข้อเสนอแนะอื่นๆหรือไม่.....

.....

APPENDIX D

ชุดดนตรีที่ใช้ในการวิจัย

ชุดที่ 1 ดนตรีไทยสากล

A	B
1. รักเธอที่สุด (มินท์ อรรถวดี)	1. รักยืนยง (ปิ่น ไพบุลย์เกียรติ)
2. ยินดีที่ได้รู้จัก (บูโดกัน)	2. ขอเป็นตัวเลือก (กะลา)
3. จดหมายจากพระจันทร์ (แอน ธิติมา)	3. เล่าสู่กันฟัง (เบร็ด ชงไชย)
4. ใจลอย (พลอย)	4. รักเธอนิรันดร์ (ศิรศักดิ์)
5. จะรักให้ดีที่สุด (ทอง ภัครมัย)	5. แล่ได้คิดถึง (ญารินดา)
6. ลมหนาวและดาวเดือน (ปนัดดา)	6. ความรัก (ออโตบาร์ท)
7. รักยิ่งใหญ่จากชายคนหนึ่ง (โบว์ สุนิตา)	7. รางวัลแค่คนช่างฝัน (โคโค แจ๊ส)
8. ทราบดีทะเล (นันทิดา)	8. สุดแต่ใจจะไขว่คว้า (แซม ชูรนนท์)

ชุดที่ 2 ดนตรีสากล

A	B
1. When You Say Nothing At All	1. My Love
2. Fool Again	2. Wind Of Change
3. Pretty Boy	3. How Do I Live
4. Shape Of My Heart	4. I Don't Missing
5. This I Promise You	5. My Heart Will Go On
6. I Need You	6. Nothing's Gonna Change My Love
7. You Took My Heart Away	7. Right Here Waiting

ชุดที่ 3 ดนตรีไทยลูกทุ่ง

A	B
1. หัวใจคิดซอด (แดง)	1. เจ็บเกือบตาย (สันติ)
2. ปริญาใจ (ศิริพร)	2. จุฑารูป 3 ดอก (อาภาพร)
3. หน้อยใหม่คนดี (ไมค์ ภิรมย์พร)	3. หงษ์ฟ้า (แอน มิตรชัย)
4. ใจอ่อน (ฝน ธนสุนทร)	4. ตามหาสายพิณ (ศดใส)
5. มนต์ขลังลังกาวิ (เอกชัย)	5. แฟนเคยมีแต่เลิกแล้ว (ดาว มยุรี)
6. มนต์ขลังมัสสุหรี (ดาว มยุรี)	6. รอน้องกลับลับแล (สันติ)
7. แม่หงษ์ทอง (สันติ)	7. พระรามยังรอ (ศดใส)
8. ใจดำทำดี (แอน มิตรชัย)	8. คู่เข้า คู่หยอก (เอกชัย & ดาว มยุรี)

ชุดที่ 4 คนตรีไทยสากล (ประสานเสียง)

A	B
1. ผลอใจรัก	1. บัวตูมบัวบาน
2. อเวจีใจ	2. รักเธอเท่าฟ้า
3. วานนี้รัก..วันนี้ลืม	3. เอาคำว่ารักของเธอคืนไป
4. คนงามลืมง่าย	4. รักเพื่อเลือก
5. ใครลืมใครก่อน	5. ใจนางเหมือนทางรถ
6. ไม่ลืมทำนอง	6. มนต์รักลูกทุ่ง

ชุดที่ 5 คนตรีไทยเดิม (บรรเลง)

A	B
1. แหกสาหร่าย	1. เขมรไพรโยค
2. แหกบรรเทศ	2. ลาวเจริญศรี
3. ลาวสมเด็จ	3. ลาวคำหอม
4. ต้อยตลิ่ง	4. ลาวดวงเดือน
5. สร้อยแสงแดง	5. จีนขวัญอ่อน
6. เขมรเอวบาง	6. มอญอ้อยอิง

ชุดที่ 6 ดนตรีสากล (บรรเลง)

A	B
1. Colors Of The Wind 2. Wonderful Tonight 3. (Everything I Do) I Do It For You 4. Hello Darling 5. Always On My Mind 6. Because I Love You 7. How Can I Tell Her	1. Just When I Needed You Most 2. It Might Be You 3. Saled With A Kiss 4. I Will Always Love You 5. Unchained Melody 6. Smoke Gets In Your Eyes 7. I Love You To Want Me

ชุดที่ 7 ดนตรีไทยพื้นบ้าน (เพลงโคราชประยุกต์)

A	B
1. หอ..หอ..หอ 2. ละลนละลาน 3. แคนซ์สามซ่า 4. กระวนกระวาย 5. ลำซิ่งโคราช 6. หลอกให้หลงไหล	1. โคราชซิ่ง 2. คนกระโทก 3. ดอกเต๋ 4. นางแมวขอฝน 5. ลาเมียไปสิงคโปร์ 6. สาวไทยเบิ่ง

BIOGRAPHY

NAME	Mrs. Montarop Srakaethong
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