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Health Science

A LITERATUR STUDY: NON-PHARMACOLOGICAL THERAPIES IN LABOUR PAIN

KEY WORDS: Non-Pharmacological, Labour pain

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ABSTRACT

Labour is the active process of delivering a foetus and is characterised by regular, painful uterine contractions which increase in frequency and intensity. Various methods are used to reduce labor pain, widely divided into non-pharmacological interventions namely hypnosis, biofeedback, intracutaneous and subcutaneous sterile water injection, soaking in water, aromatherapy, relaxation techniques such as yoga, music, audio, acupressure acupuncture, manual methods such as reflexology , TENS (transcutaneous electrical nerve stimulation). The method used in this paper is Literature Review. We use keyword Risk Factor and Stunting in online resources such as Science Direct, Proquest, PubMed, Google Scholar and another related website.

INTRODUCTION

The experience of labour is complex and subjective. Several factors affect a woman's perception of labour making each experience unique. However as a consistent finding, labour pain is ranked high on the pain rating scale when compared to other painful life experiences¹. The memory of this pain however is short lived and of parturients who experienced severe pain in labour, 90% found the experience satisfactory three months later . This short term memory may be related to the positive outcome that often occurs at the end of labour.¹

The pattern of labour pain differs between nulliparous and multiparous women and it is well documented that pain scores are higher in the nulliparous compared to the multiparous woman especially if there has been no antenatal education. Consistent findings also indicate that nulliparous women on average experience greater sensory pain during early labour compared to multiparous women³ who seem to experience more intense pain during the pelvic phase of labour as a result of sudden stimulation of nociceptors surrounding the vaginal vault, vulva and perineum and rapid descent of the foetus.¹

Pain is an unpleasant feeling and emotional experience that is related to real or potential tissue damage or a damage that is defined similarly. Pain is mostly subjective. From many points of view, the pain is a common symptom intended for seeking aid). International Association for the Study of Pain (IASP) defines the pain as "an unpleasant emotional situation which is originating from a certain area, which is dependant or non-dependant on tissue damage and which is related to the past experience of the person in question" Although there is an increase of knowledge and developments in technological resources regarding the pain, many patients still experience pain This situation causes for reduction in living quality and functional situation of the patients, increase in the fatigue levels and impairments in daily life activities in working capacity and social interactions Also this situation will cause loss of workforce and will affect not only the patients but also his/her family members in economical terms thus causing undesired problems in psychological and social well being status All of these elements have directed both the patients and caregivers to seek for different searches in pain management.²

For this reason in addition to the pharmacological treatment options for pain management, today, non-pharmacological treatment options and complementary medical attempts have started to be used. It is stated that such kind of therapies can be useful in pain management. In a study conducted with the participation of 31,044 adults in United States, Barnes et al. (2004) determined that the usage rate of the complementary methods for the last year has been 36% and back pain and lumbago come first with 16.8% and neck pain comes third with 6.6% in terms of usage reasons of the complementary methods . Sherman et al. (2004) have stated that 24% of the patients with chronic lumbago used massage therapy.²

To address this gap, we conducted a literature review Non-Pharmacological Therapies In Labour Pain.

METHOD

The method used in this paper is Literature Review. We use keyword Risk Factor and Stunting in online resources such as Science Direct, Proquest, PubMed, Google Scholar and another related website.

DISCUSSION

Labour is the active process of delivering a foetus and is characterised by regular, painful uterine contractions which increase in frequency and intensity. With the use of Chapman's model, a discussion of the nature of labor pain begins with an understanding of the nociceptive stimuli that may be centrally perceived by the parturient and called pain. During the dilatation phase of labor (first stage), visceral pain predominates, with pain (nociceptive) stimuli arising from mechanical distention of the lower uterine segment and cervical dilatation. High-threshold mechanoreceptors in the myometrium may also generate nociceptive stimuli in response to uterine contractions, particularly in long, protracted labors.³⁸

The increasing intensity of pain commonly observed with the progression of dilatation may be partially attributable to a lowered activation threshold in the mechanoreceptors, and to chemoreceptor stimulation produced by the repeated stimulation of uterine contractions. These nociceptive stimuli of the dilatation phase are predominantly transmitted to the posterior nerve root ganglia at T10 through L1.^{1,9}

Similar to other types of visceral pain, labor pain may be progressively referred to the abdominal wall, lumbosacral region, iliac crests, gluteal areas, and thighs. Although virtually all laboring women experience lower abdominal pain during contractions, 15% to 74% may also experience contraction-related low back pain that for some is continuous, even between contractions.^{1,10} Some women experience very widespread and diffuse pain sensations, whereas others may feel very localized pain in specific, well-defined areas. As the pelvic or descent phase of labor advances (late first stage and second stage), somatic pain predominates from distention and traction on pelvic structures surrounding the vaginal vault and from distention of the pelvic floor and perineum. Sharp and generally well localized, these stimuli are transmitted via the pudendal nerve through the anterior rami of S2 through S4.^{1,9,10}

In the dorsal horn of the spinal cord, the nociceptive stimuli are processed and transmitted via the spinothalamic tract to the thalamus, brain stem, and cerebellum, where spatial and temporal analysis occurs, and to the hypothalamic and limbic systems, where emotional (affective) and autonomic responses originate.

Chapman's review of limbic processes and the affective dimension of pain provides a thorough discussion of current understanding of this complex subject. At the level of the dorsal horn, motor and sympathetic reflex activity is stimulated, and modulation of nociceptive impulse transmission may occur through several complex inhibitory systems activated at many supraspinal levels of the central nervous system. Nociceptive impulse modulation is a likely explanation for the pain-reducing effects of counterirritation therapies, such as transcutaneous electrical nerve stimulation, acupuncture, and moxibustion. 1,9,10

A. Hypnosis

Hypnosis is considered a state when focus is reduced to reduce awareness of external stimuli. Suggestions in the form of verbal or non-verbal communication that produce spontaneous changes that appear in changes in perception, mood, and attitude. This communication therapy is direct to one's subconscious and independent response from conscious effort and reason. Women can learn self hypnosis in this case can be used to overcome pain in labor.8

In recent developments neuro-imaging developed an understanding of the neuro-physiological changes that occur during hypnosis. Hypnosis for childbirth is self hypnosis, practitioners teach mothers how to induce a subconscious state such as meditation which produces self-awareness in an effort to reduce the perception of pain. This is used to focus on attention and relaxation, for its development used verbal and non verbal communication which is generally referred to as suggestion. Positive statements are used to achieve specific therapeutic goals. The goal is to reduce fear, anxiety and pain. Therefore psychological activity at the time of delivery can take place comfortably felt by the mother.8

B) Biofeedback

Biofeedback or biological feedback is a therapeutic technique where individuals receive training to improve health and fitness through signals coming from the body (temperature, heart rate, muscle tension). The underlying principle is a change of mind and emotion that allows to produce changes in bodily functions. Biofeedback aims to get a psychological control response with electronic instruments under expert supervision. These instruments include electromyograph to measure muscle pressure, measuring the temperature of the skin temperature that shows heat emission of the skin, changes in blood flow, response of skin sensors that measure sweat production volume during stress, an electroencephalograph that measures brain waves, an electrocardiograph that measures heart rate and rhythm and useful for detecting and reducing tachycardia and controlling high blood pressure.8

C) Sterile intracutaneous or intradermal injection

Sterile intracutaneous or intradermal injection of the sacrum indicates that it can reduce labor pain. This technique can be part of hospital practice that does not have epidural analgesics. This technique also helps women who want to avoid drugs during labor and birth. This technique is related to the release of endogenous opioids (endorphin and enkephalin) and is based on the control gate theory.8

D) Soaking warm water

Soaking warm water during labor is used for relaxation and reducing pain, soaking in water has long been used in clinical practice. Used both at the first, second and third stage with the woman's stomach completely submerged. Soaking places can be in pools, bath-tubs, or other places that can be used for bathing. Buoyancy in water allows women to move more easily than on land. This situation can facilitate the interaction of neuro hormonal labor, reduce pain and potentially increase the progress of labor. Soaking in water is associated with increased uterine function, reducing pain due to contractions and reducing the duration of labor with minimal intervention. In addition to soaking in warm water also reduces blood pressure which results in peripheral vasodilation. This can increase satisfaction and self-control in the mother.8,11

E) Aromatherapy

Aromatherapy used is essential oil. The mechanism of aroma therapy is still unclear. Many studies try to investigate physical and psychological parameters, in physical factors such as blood pressure and heart rate there is no change but there is a change in mood and overcoming anxiety. Essential oils also increase sedatives in self and relaxation transmission. Essential oils can also be massaged into the skin or inhalation. Aromatherapy has been widely used by nurses and midwives.8,11,12

F) Relaxation

Relaxation techniques are body and mind interventions based on the development of self-awareness, the practice of relaxation focuses on breathing, meditation, and visualization. These various techniques are now being developed for childbirth. But there are still many things that are uncertain as to which technique is the most effective, when is the right approach during pregnancy. Yoga, meditation, music and hypnosis techniques are also thought to have a calming effect and increase distraction from pain and pressure. In its development the future will be distinguished more effectively between yoga, music and audio.13

G) Acupuncture, Reflexology and other manual methods

Acupuncture includes needle insertion in specific parts of the body. Other acupuncture techniques include acupuncture and laser acupressure at certain points. The technique aims to reduce pain and pain caused by acupuncture. Acupuncture used to reduce labor pain is located in the hands, feet and ears. Some theories say how acupuncture works for sure. One theory says that stimulation of pressure will block pain impulses such as gate control theory. Acupuncture is indicated to stimulate the nervous system, another theory says that acupuncture stimulates the release of endorphins which can reduce pain.

The manual method includes massage and reflection. Massage includes body soft tissue manipulation. In general, massage can help tense muscles and calm the individual. Some women find an abdominal massage known as "effleurage". Unlike massage in general, massage during labor is intended to reduce pain with relaxation, inhibit pain transmission and increase blood flow and oxygenation. Reflection is intended to reflect points on the feet that are related to other body parts of the body.8

H) TENS (Transcutaneous Electrical Nerve Stimulation)

TENS is used with a small electrical impulse voltage that varies in frequency and intensity. At birth electrodes from TENS are usually used in the lower area and can be controlled by the woman herself. TENS can also be combined with acupuncture under the supervision of experts. The surplus electricity is thought to stimulate nerve flow which blocks pain transmission. Based on the gate control theory, pain transmission is inhibited by the flow of TENS impulse from the control of the central nervous tissue. Other studies have also revealed that TENS reduces anxiety, pain and improves control and distraction effects. Lately TENS is also thought to reduce the length of labor, suppressing the release of catecholamines which have the effect of slowing uterine contractions.8

I) Guided Imagery

Guided imagery involves women using imagination to control the pain. This can be achieved by creating shadows that reduce the severity of pain or which consist of what substitutes are received from pain. Active involvement of mothers who will give birth is very necessary because it is he who can control the pain further so that it can cause relaxation.

Guided imagination therapy in its application to patients has different procedures. But in essence, this therapy is given to patients to improve relaxation. This relaxed state will reduce the physical and mental pathological conditions in the patient. The guided imagination given to patients must be supported by internal and external conditions. The internal condition that supports the smooth process of this therapy is that one of the patients must be cooperative with the nurse, not having hearing loss, and easy to concentrate. External conditions that support guided imagination are a calm, comfortable environment that will

increase concentration during therapy. Guided imagination will provide a relaxing effect by reducing muscle tension so that pain will decrease. Patients in a relaxed state naturally trigger the release of endorphins. This hormone is a natural analgesic of the body found in the brain, spinal, and gastrointestinal tract. Guided imagery is usually 20-25 minutes a day and begins with relaxation and focusing. Imagination that is often used is a comfortable and peaceful place such as the sea with waves, the pounding of sea water, warm sand, sunset, blue sky, mountains, lakes and flowers, singing birds and pine trees. 5

CONCLUSIONS

Various methods are used to reduce labor pain, widely divided into non-pharmacological interventions namely hypnosis, biofeedback, intracutaneous and subcutaneous sterile water injection, soaking in water, aromatherapy, relaxation techniques such as yoga, music, audio, acupressure acupuncture, manual methods such as reflexology, TENS (transcutaneous electrical nerve stimulation), and guided imagery.

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