

Self-Comforting Techniques and Non-Pharmacologic Methods to Relieve Pain During Labor

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Abstract: *Non-pharmacological methods like adopting different position, massage therapy, touch therapy, and breathing relaxation therapy during first stage of labor. Pain is a condition which is associated with physical, psychological, and emotional states of individuals. The use of pharmacologic to control pain includes the use of analgesic and regional anesthesia, area-specific medication to block nerve cells, general anesthetists. Using analgesia during labor can make pregnant women relax when there is no contraction; it component of narcotic analgesia drugs, sedative drugs, hypnotic drug and tranquilizer, however, analgesia can cause side effects on both the mothers and babies. These pain impulses can be inhibited with stimulation on the skin including effleurages, massaging, or rubbing etc At the end of viewers and readers will be able to have improved knowledge and attitude regarding non-pharmacological pain management during first stage of labor, labor process and pain physiology, Massage therapy, Relaxation and breathing Techniques, Effleurage therapy, Position During labor.*

Keywords: labor process and pain physiology, Massage therapy, effleurages, massaging, or rubbing, Relaxation and breathing Techniques, Effleurage therapy, Position During labor

1. Introduction

Labor as you all know is a physiological process which involves the transition from pregnancy to motherhood. Pain in labor is nearly a universal experience for child bearing women.¹

It is important that, mother should have the thorough knowledge about pain relief techniques which reduces the discomfort in the first stage of labour, since attention has been towards making the labour process a psychologically regarding experience also. Non-pharmacological methods like adopting different position, massage therapy, touch therapy, and breathing relaxation therapy during first stage of labour.¹

Objectives

At the end of viewers and readers will be able to have improved knowledge and attitude regarding non-pharmacological pain management during first stage of labour.¹

Specific Objectives

At the end of study the each sample will be able to:-

- 1) Define the labour, stages and phases of labour
- 2) Define laboring period and pain physiology during first stage of labour.
- 3) Explain the massage therapy during first stage of labour.
- 4) Explain the relaxation and breathing techniques during labour
- 5) Explain the practice of effleurage therapy in labour pain.
- 6) Explain the benefits of frequent and different position change during the first stage of labour.²

2. Content

- 1) PART – I (labour, labour process and pain physiology)
- 2) PART – II (Massage therapy)
- 3) PART – III (Relaxation and breathing Techniques)
- 4) PART – IV (Effleurage therapy)
- 5) PART – V (Position During labour)



Part – I

3. What is labour?

Labour is a series of event taking place in the genital organs in an effort to expel viable fetus out of womb into the outer world through the vagina.

Labour is a unique experience for every woman. The psychological transition from means an enormous change for each woman both physically and psychologically. Labour purely in physical sense may be describing as the process by which the fetus placenta & membranes are expelled through the birth canal. **Normal labour occurs between 37 and 42 weeks gestation.**²

Stages and Duration of Labour

Labour can be divided into **four stages** as follows:

- 1) The **first stage of labour** is the longest period during labour. It starts when the actual labour pain starts to be more consistent and more frequent until **the dilation is equal to ten centimeters**.²
 - a) **Initial (Latent) Phase** Contractions become progressively stronger and more rhythmic. Discomfort is minimal. The cervix thins and opens to about 1½ inches (4 centimetres). This phase lasts an average of **8½ hours** (up to 20 hours) in a first pregnancy and 5 hours (up to 12 hours) in subsequent pregnancies. During this phase, the contraction of the uterus is **mild to moderate**; abdomen is not too tight to the touch. The interval between contractions is **10 to 20 minutes**, which later reduces to every five minutes, lasting **15 – 30 seconds** each time.²
 - b) **Active phase:** cervix opens from about 1½ inches (4 centimetres) to the full 3 inches (7 centimetres). This phase averages about **5 to 7 hours** in a first pregnancy and 2 to 4 hours in subsequent pregnancies. The contraction is moderate to moderate to severe, and the abdomen is clearly tight. The interval between contractions is three to five minutes, lasting 45 – 60 seconds each time.²
 - c) **Transition phase:** is when the dilation is eight to ten centimeters. During this phase, the contraction is very severe, the abdomen is very tight. The interval between the contractions is two to three minutes, each lasting for 60 – 90 seconds.²
- 2) **The second stage** of labour begins when the dilation is ten centimeters and ends with child delivery. This stage averages about 45 to 60 minutes in a first pregnancy and 15 to 30 minutes in subsequent pregnancies. The interval between contractions is one to two minutes, and the contraction lasts 60 to 90 seconds each. This is the most painful period, and the pregnant women will feel very listless and exhausted.²
- 3) **The third stage** of labour begins when the baby is delivered and ends when the placenta is pushed out of the body. It usually takes to 30 minutes in all pregnancies.²

- 4) **The fourth stage** of labour lasts about two hours the placenta is pushed out of the body. This is deemed a very crucial period when the pregnant women needs constant attention as such complication as hemorrhage may occur.²

Labor pain physiology

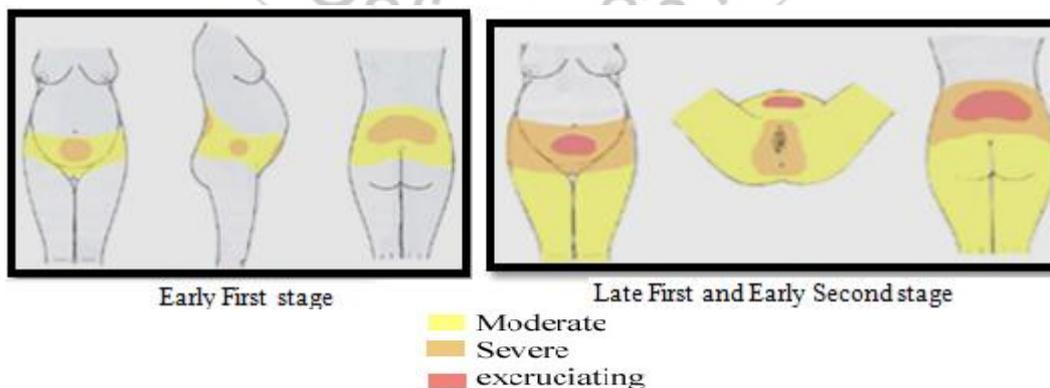
Pain is a complex phenomenon which is difficult to understand. It is an abstract feeling which is individual specific. **Pain is a condition which is associated with physical, psychological, and emotional states of individuals.** Specific concept of pain in 1965, Melzack & Wall proposed the gate control theory which explains the gate opening – closing mechanism related to the **transfer of pain impulse from different parts of the body.** These impulses consist of larger and small sensory neurons, both of which receive the signals in the substantia gelatinosa (SG) area.^{3,4}

- The small sensory neurons, called **facilitatory small fibers**, open the gate, thus enabling the **transmission of pain impulse.**³
- The larger sensory neurons, called **inhibitory larger fibers**, close the gate to inhibit the pain impulse.³

Thus, if the inhibitory larger fibers are more powerful, they will activate SG, thus preventing the transmission cells (T cells) from transmitting the pain impulse to the brain. These **pain impulses can be inhibited with stimulation on the skin including effleurages, massaging, or rubbing** etc. This is because it is believed that under the skin there are inhibitory large fibers which can close the gate when stimulated. **The uterus sends pain sensation to other areas where there are nerves from the uterus and cervix such as waist, lower abdomen and frontal thighs.**⁴

The first stage of labour pain

This is caused by the contraction of the uterus due to a number of reasons, usually women experience discomfort only during contraction and is free from pain between contractions. The pain in labour originates from the tubal Ostia. (Bonica, 1994).⁴



Distribution of pain and its intensity during labour

The nurse’s knowledge and providing knowledge regarding pain management during each stage of labour should enables pregnant women to perceive accurate knowledge, which favorably affects their labour pain and leads to appropriate responses, enabling pregnant women to successfully control

their pain and promoting more favorable and less complicated labour.²

Pain Control Techniques

Pain control methods are divided into medication and non medication pain control.

Pharmacological Pain Control: - The use of pharmacologic to control pain includes the use of analgesic and regional anesthesia, area-specific medication to block nerve cells, general anesthetics. Using analgesia during labour can make pregnant women relax when there is no contraction; it component of narcotic analgesia drugs, sedative drugs, hypnotic drug and tranquilizer, however, analgesia can cause side effects on both the mothers and babies.. Use of medication can result in prolonged first and second stages of labour. Medical intervention, or even a cesarean section, may be needed, which puts the pregnant women at a risk of further complications. Thus, the use of pharmacologic pain control should be taken into consideration.^{2,3,4}

Non-pharmacologic pain control: - Non-pharmacologic pain control is based on a principle of natural childbirth in which the use of medication or analgesia is avoided. The aim is to enable pregnant women to have full conscious and to fully participate in delivery process, while reducing the side effects of medication on both the mother and the baby.

Examples of non-pharmacologic pain control are provision of encouragement and emotions support, dissemination of knowledge about child delivery, breathing techniques to reduce pain, massage, effleurage, breathing, constriction and relaxation of muscles, touch and acupuncture.³

PART – II

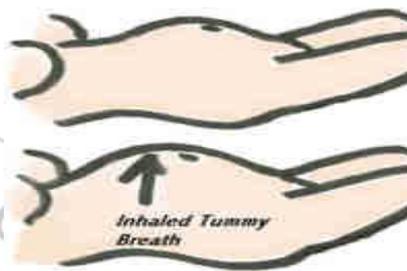
4. Relaxation Techniques

Relaxation means **to keep body and mind relax**, along with a variety of rhythmic breathing patterns intended to complement and promote relaxation or to provide distraction from labour pain. They are also used to enhance a woman's sense of control.² Relaxation and breathing may contribute more to a woman's ability to cope with labour pain than to actually reduce that pain. Here focus on some relaxation methods:³

- 1) *Progressive relaxation* is a process where one has to alternately tense and relax the muscle groups, starting from the forehead right down to the feet, first by curling them and then relaxing them one at a time.^{1, 2,4}
- 2) *Passive relaxation* is a similar method which focuses more on breathing slowly and rhythmically, thereby making the muscles relax and ease out the tension.^{1, 2,4}
- 3) *Visualization* is another relaxation technique where, as the name suggests, mothers have to visualize an image or a place or anything that brings to them happiness, relief and forgetting momentarily the physical reality of pain. Visualizing a beach, a flower, some mountainous area during sunset or simply a cute baby's face helps greatly.^{1, 2,4}
- 4) *Touch relaxation* is a method where one's partner, nurse or midwife **lends a supporting hand** in the delivery process. Handling labour pain can become easier if given the right mental support. **Positive words of encouragement along with the way they touch and hold is vital to coping with labour pain.** Stroking the tense spots like the forehead, the shoulders, the arms, the abdomen, the legs or the back works wonders in labour pain.^{1, 2,4}

Breathing Techniques to Reduce Labour Pain

Breathing techniques are to help cope with labour pain. When one is experiencing contractions and the pain is severe, a pattern of breathing helps in pain reduction. It can control one's anxiety, help one concentrate, and can also prevent hyperventilation (over breathing). Breathing techniques used in combination with massaging therapy brings labour pain down considerably. **Taking in air during a rest period and breathing out during a contraction helps many mothers in pain management.** Focusing on an image, visualizing some scene dear to one's heart or imagination, listening to a set of favourite songs or simply making noise helps. It is best to start in latent phase to learn authentic breathing techniques to have more control on breathing.^{3,2, 5}



PART – III

Massage Techniques for Childbirth

The use of complementary therapies is given in the Midwife's Code of Practice, and their use is to be based upon a sound knowledge and appropriate training.

Massage is one such complementary therapy. It is a form of touch, and as such is an important form of communication.^{5,6,1}

The study shows the effects of connective tissue massage and suggests that it results in a rise in beta endorphins. Endorphins are powerful hormones that provide increased energy, relaxation and pain relief all at the same time. The massage had positive effects, helping women to cope with pain and promoting a positive feeling of labour.¹



The massage techniques used during the first stage of labour are specifically designed to support the woman with her breathing during contractions. **The massage is therefore directional, reasonably firm and rhythmic.** Back, and arm massage is taught together with the optimum positions to facilitate each of these. It is important that the massage is started early in labour so that the mother can get used to working together with the massage and breathing. In the earlier part of the labour the nurse takes the lead from the woman. Likewise when the contractions get stronger and the woman is breathing more quickly, the nurse needs to follow.

It is only at the decreasing stage of the contraction that the nurse takes over, slowing down the hand movements so as to help slow the breathing by the end of the contraction and create relaxation.^{3,5}

Circular hip massage

This massage is taught primarily for women experiencing back pain during their labour. The firmness and repetition of this movement in the area of discomfort aims primarily to help relieve pain.^{3,5}

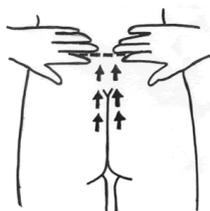
Positions

The woman has to be in a comfortable, relaxed position; what this is will change throughout the labour. The nurse also has to be in a comfortable position to utilise energy, convey calm and prevent injury. **Either the woman kneels on the floor (or bed) leaning over a chair or against the head of the bed (or wall) and is supported by cushions or pillows. She can also be on all fours.**⁵

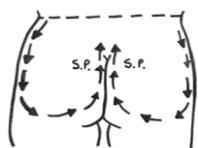
Massage: Two hands are placed on either side of the spine in the sacral region with the hands pointing in an upward direction and not placed too far under the buttocks. This massage should never be done directly over the spine (Fig 1 & 2).⁵



When the contraction starts the woman is asked to breathe audibly so that the nurse can hear. **The massage is essentially extremely simple but needs coordination between the woman and nurse.** During inspiration the nurse's hands go upwards as she leans forward. All pressure and energy comes from the body and is transmitted through the hands. The hands massage up to waist level during the inspiration. Then during the start of expiration the fingers on both hands turn inwards and elbows turn outwards to massage outwards across the back to the hips (Fig. 3).⁵

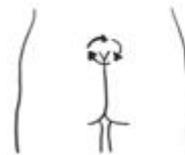


The hands then move smoothly down the sides of the hips until they arrive at the starting position with the breathing and without losing contact with the woman (Fig. 4). These movements continue throughout the contraction.⁴



Sacral pressure massage for labour

This massage can be used in combination with the circular hip massage at the end of the contraction when the hands return to the starting position, or on its own, depending on what the woman finds most useful at the time. **The nurse uses the palm of the hand over the sacral area and massages firmly, in a clockwise direction if using the right hand and anticlockwise if using the left hand (Fig. 7).** The hand not being used to massage is supporting the woman either on the hip or shoulder (whichever feels more comfortable).⁵



The massage hand should remain flexible and fluid with all the pressure coming through the body. Some women find this massage very helpful if there is intense backache.⁵

Whole back massage

At the end of the contraction the nurse leans further forward if kneeling or stands up if sitting and continues up the back (on either side of the spine) to the upper back, around the shoulders and down each side of the body to the starting point (Fig. 5).⁴



This final stroke can be repeated as many times as is wanted and women report that it is extremely relaxing following the contraction. This stroke is performed more slowly and gently, as it is not following any breathing pattern but rather aiding deeper relaxation.⁵

Arm Massage

This massage is used if it is impossible to massage the back or legs for example during a vaginal examination. It helps to keep the woman focused on her breathing, aiding relaxation and pain relief. It maintains reassuring contact during a possibly frightening experience (e.g. prior to forceps/ventouse delivery). The nurse stands to the side and holds the woman's hand, supporting the wrist. **The massaging hand goes up the inner arm to the shoulder, around and down the outer side of the arm back to the hand.** As with all the other massages outlined, it works in combination with breathing; up on inspiration, down on expiration.⁷

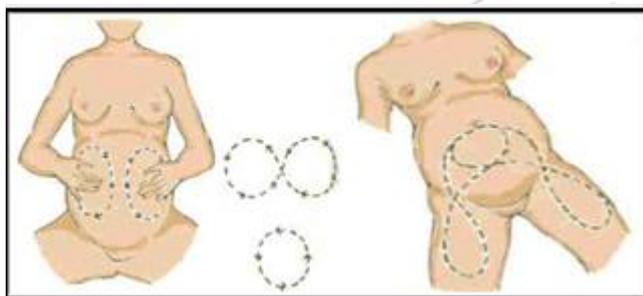
PART – IV

5. Effleurage to Reduce Labour Pain

Effleurage comes from the French verb *effleurer*, meaning "to touch lightly." This modality has been utilized for many years by nurse midwives to reduce pain during labour, and has been applied to other clinical situations as well. **Light or fingertip massage on the mother's back or abdomen, also**

called *effleurage*, may be preferable over deep massage for some women. Effleurage stimulates nerve endings called "meissner's corpuscles" which travel faster across the body than the signal of pain, thereby "blocking" the pain signal from reaching the brain so quickly.⁸

Effleurage, a form of therapeutic massage, some find effleurage effective because it serves as a pleasant, relaxing distraction, there may be a physiological basis for its mode of action. Pregnant women in labour can perform effleurage when the contraction is still far apart in latent phase. **This can be done by using the index fingers through the little fingers or both hook-shape hands to stroke lightly on the abdomen.** The stroking begins from upper symphysis pubis area up to through the high of fundus during **inspiration**, and then continues from the high down to be the beginning point during **expiration**. If back labour becomes a problem (often seen with a posterior (baby's face to mother's pubic bone) positioned baby, counter-pressure may be used on the mother's lower back to reduce the discomfort.⁵



PART – V

6. Positions to Help Lessen Labour Pain

One's response to pain is instinctive. One always seeks the most comfortable position when in discomfort. The same logic applies to labour pain. Being active is the key to successfully cope with labour pain.⁶

One should keep trying various positions to see which suits her best. Also, it is noteworthy that no one position takes one through the entire process. In each phase of



Nurse's responsibility: provide a back support to the mother to prevent fetal compression

- 1) **Left or lateral or lying on one's left side** with a pillow between the legs position (if fatigued): This is very good resting position which increases women comfort. This lower elevated maternal BP. It facilitates relaxation between pushing position. This position helps to relieve

contractions, mothers have to position themselves differently to minimize pain. Some positions that do help are:⁶

- 1) **Standing or leaning forward** towards the labour partner or the back of a chair, a wall or some other support. This position takes advantage of gravity and between contractions. Contractions are less painful and more productive. Fetus well aligned with angle of pelvic favouring effacement dilation and descent.⁷



Nurse's responsibility: apply sanitary pads in perineum to prevent sudden delivery of fetus. While giving standing position support should be given.⁵

- 1) **Walking position:** this position used advantage of gravity during and between contractions. Contractions are often less painful and more productive. It encourages descent through the pelvic mobility. Fetus is well aligned with angel of pelvis⁶

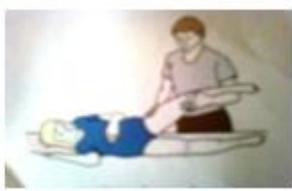
Nurse's responsibility: apply sanitary pad in the perineum to prevent sudden delivery of fetus, allow care taker to keep a continuous watch on the mother, and walking position should be given before rupture of membrane.²⁴



- 2) **Sitting position or kneeling** before a front facing chair, a bean bag, a pile of pillows or the labour partner: this position offers a good rest. There is some gravity advantage and can be used with electronic fetal monitoring. This is a best position to reduce pain.⁶

uterine pressure and compression of major maternal blood vessels.⁹

Side-lying makes contractions less frequent than when standing, but they are also more efficient. Best of all, side-lying is good for blood pressure. In fact, because it enhances circulation to your uterus, this position is often employed when a baby appears to be in distress.¹⁰



Nurse's responsibility: Support to the abdomen is given with pillows. Pillow is given between the two legs also.¹⁰

- 1) **Semi fowlers position** or placing a pillow at back to make 35° to 45° elevated head and back: it gives good resting position it is a good pushing position and reduce fetal head compression and maternal blood vessel and relief in uterine pressure. There are some gravity advantages. This can be used for electronic fetal monitoring. It is easy for vaginal examination and easily maintained.⁸



Nurse's responsibility: provide a back support to the lady to avoid the discomfort.

- 1) **During active labour, a Lithotomy and squatting position** is very handy as it helps in opening up the pelvis. In this position, moving the hips from side to side or in circles also helps this can accompany with semi fowlers position to have effect and less manipulative delivery.⁸



Nurses can be a great resource of encouragement, emotional support and physical comfort for the entire family while the mother is in labour. In addition to knowledge about pain relief techniques, doulas provide continuous emotional support, answer questions about labour and provide support to the partner or father.⁸

7. Conclusion

Most moms-to-be are very apprehensive about pain management during labour. As discussed, there are quite a few natural techniques of coping with labour pain if one isn't keen on taking medications. Of course, in case of a last minute mind change, the help of pain medications can be sought. The best approach is to have an open mind in the delivery room and to go there prepared by keeping in mind all of these options.¹⁰

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