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## SELF HYPNOSIS REDUCE PAIN LABOR AND LIFTING LABOR

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### Abstract

Psychological problem during pregnancy, childbirth and post partum are one indirect cause of obstetric complications. Uncontrolled fear and anxiety can increase pain during labor and postpartum depression. Pregnant women with high anxiety tend to take anticipatory action that it consider to delivery with cesarean section. With the development of science, then developed several methods to minimize and or eliminate pain during labor. One of the method is hypnobirthing. Hypnobirthing is a blend of self hypnosis with natural birth process. Hypnobirthing create peace of mind that eliminate mild complaints during pregnancy, reduce pain during childbirth, until the mental formation of the baby since in the womb. This article aims to provide an overview of self hypnosis can provide solutions in reducing labor pain and shorten the time of birth. The method is used literature search about self hypnosis relation with childbirth. It is expected that every pregnant women are able to carry out of self hypnosis so that the process of labor is safe and smooth.

**Keywords:** pain, labor, self hypnosis

### INTRODUCTION

Pregnancy and childbirth are wonderful gift for a married woman, but often there are fear and anxiety of how painful and difficult the process of giving birth will be. This phenomenon is even getting worse as mothers tend to share their stories that a normal birthing is very difficult and painful. This creates a sense of panic and stress for the mothers which will make many pregnant women feel more painful during the process of giving birth. This condition is known as fear-tension-pain concept, which means a painfulness felt by pregnant women caused by the tension or panic that make the muscles become stiff and sore.

Pain is a natural process that occurs during childbirth. The Pain is caused by various factors that are very complex, both physical and psychological factors. Physically, a strong contraction for the opening of the birth canal, stretch of the cervix, vagina, perineum and suppression by the baby's head are some factors that make the pregnant women feel painful. Every woman has different pain thresholds. Pain can be felt more severe if pregnant women are experiencing psychological problems such as anxiety and fear because stress conditions is very potential to reduce the body's ability to deal with the pain (1,2).



Psychological problems during pregnancy, labor and childbirth are among the indirect causes of obstetric complications. Uncontrollable fear and anxiety of mothers, plays an important role in increasing the pain during labor and are improving postpartum depression. Anxiety of labor is the most frequent psychological problems experienced by women, especially nulligravida. This condition is because by the nulligravida had not any experience of labor. Nulligravida will feel anxious about labor, labor pain and the baby's condition. Research in Canada found that there is a difference in the intensity of pain felt by nulligravida and multigravida. Bonica also reported painfulness in labor. The research showed that 15% feel a little, 35% feel a moderate pain, 30% feel painful, and 20% feel extremely painful during labor. Anxiety will be increasing if the woman interprets unclear information, by trusting any information notifying that giving birth process is a threat to the safety of both the mother and the baby (2-5).

Anxiety that is experienced by adults is a result of the vibrational recording of life since in the womb. The vibrations that will be recorded until adulthood, therefore since the baby in the womb needs to get patient and peace from his mother. According to dr. Sarah Brewer in her book entitled *Super Baby* revealed that anxiety and stress during pregnancy as the same dangerous of pregnant women who smoke and drink of alcohol. The condition can results premature birth, learning difficulties, children become hyperactive or even autism (3-6).

Pregnant women with high levels of anxiety often take anticipatory measures against situations that are considered threatening. The understanding of pain are greatly influenced by the level of knowledge, perception, past experience and also socio-cultural factors. Nowadays many delivery is done through caesarean section on as requested by the patient that it is a safer way for both mother and baby. Keogh (2005) found psychosocial factors in women who tend to chose caesarean birthing that increase up to 30% caesarean section (4). The trend reflects that she thinks the normal birthing is a process that threatens the safety of mother and baby (7). Kjaergaard (2008) found that anxiety that occurs in maternal improve the delivery of early medical intervention, such as epidural anesthesia, augmentation, and delivery by cesarean section (8). In addition of that, Alehagen et al (2008) found a tendency for an increase in the use of epidural anesthesia during labor in women who are experiencing stress (8).

The incidence of prolonged labor in women with either non-risk or low-risk pregnancies is often associated with psychological problems. Elizabeth et al (2004) found that 20% of nulligravida with low risk had prolonged labor (7). Kjaergaard (2008) found that dystosia is caused by dilatation of the cervix which is not optimal often associated with psychological problems by the mother (8). Prolonged of labor has a bad result to mother and fetus. The mother will feel fatigue, postpartum hemorrhage, and infection. The consequences for the infants are fetal death in uterus (IUFD), perinatal death and increased incidence of morbidity of infants (1).

Based on the empirical experience, the attention of health workers at various levels of health services to the psychological aspects of pregnant women and childbirth in the region is not adequate. The documentation of the psychological aspects in maternity medical records is very few even sometimes absent, so information about maternal and maternity psychological problems is hard to find.

Science developed several methods to minimize and or eliminate pain during childbirth. Such methods include: epidural anesthesia, waterbirth, hypnosis, acupuncture, aromatherapy, and

yoga for pregnant women (9). Epidural anesthesia is seen as a very effective way to reduce pain during labor, but the pharmacological effects to the mother and baby are still there (2). Kjaergaard (2008) reported a 71.2% mothers who use epidural anesthesia experience dystocia deliveries by low plasma levels of oxytocin, so the effect on uterine contractions (8). Zealand College of Anaesthetists (ANZCA) suggest non pharmacological therapy should be given as first choice to reduce pain in childbirth (2).

One of non-pharmacological pain therapy offered by an expert hypnotherapist and hipnoanestologi of New Hampshire, American, Marie F. Mongan since 1990 is a relaxation exercise through a technique called hypnobirthing. Hypnobirthing is a mix of self hypnosis with natural childbirth process. In this case there is a process of planting positive suggestions to the subconscious, including so that pain does not arise (10). Therefore, when a view point has been positive that childbirth is a natural process that does not cause pain so great, then the body will express only a little pain during childbirth. Dr. Nandita Palshetkar states that no one can help oneself, other than oneself, including overcoming the pain in labor (9). A clinical review by Astin JA et al (2003) reported that the mind-body approach is more effective than conventional medical treatments such as hypnosis (11).

Many benefits can be obtained by the mother and fetus if there is peace of mind, such as eliminating minor complaints during pregnancy, reducing the pain during childbirth, forming positive mental of the baby since the womb. Some research shows the advantages of hypnosis. Jensen et al (2009) found that 47% of women with apply self hypnosis can reduce pain due to multiple sclerosis (12). Tournaire (2007) found that mothers who apply self-hypnosis are more satisfied and proud in maternity. Harmon et al (2007) reported that self hypnosis can shorten the duration of labor and the reduce the pain and the need to take medicine. Mairs (2007) reported a decrease in pain and anxiety for mothers who applied self hypnosis as compared with the control group. The mothers are more able to control the pain felt by the contractions of the uterus during labor (5,13).

This article aims to provide an overview of self-hypnosis can provide a solution in reducing labor pain and shorten the delivery time. The method used is literature search about self hypnosis relation with childbirth.

## DISCUSSION

### Pain, anxiety, stress during labor and body response

Stress and unhealthy emotions are associated with the perception of pain, longer pain, and low tolerance for pain (14). The pain of labor lead to a stressful situation and causes increased secretion of catecholamines. The increasing these hormones cause the following symptoms: increased cardiac output, increased heart rate, hyperventilation, alkalosis in women, decreased blood flow to the uterus because blood vessels contraction, decrease uterine contractions, slows emptying of the gastrointestinal tract, nausea, and vomiting (15). Statement of Dot Stables (2006) and Cooper (2003) is further clarified by Mander (2004) as in the following description:

### ***Ventilation***

The pain and stress that accompany uterine contractions cause hyperventilation, with respiratory frequency recorded 60-70 times per minute. Hyperventilation causes a decrease in pressure of  $\text{CO}_2$  and the consequence is an increase number in the pH levels that are consistent. One of the dangers of lower maternal pressure  $\text{CO}_2$  is causing slow fetal heart rate decelerations (16).

Ventilation can be marked increased when women use maternity breathing exercises (16). This could affect the acid-base balance of the circulatory system, resulting in alkalosis. The real danger of alkalosis during labor is a the oxygen transfer for the fetus. Alkalosis can also induce uterine vasoconstriction, prolong labor, and an worsening alkalosis of a vicious cycle (16). The increase of ventilation in conjunction with the use of energy for pushing during the second stage of labor can increase oxygen consumption exacerbating maternal fetal oxygen consumption (15).

### ***Cardiovascular function***

Cardiac output increases progressively in line with the progress of labor mainly because of labor pain (17,18). The increasing number can be as much as 15-20% above cardiac output before labor during an early first stage and by 45-50% during second stage. It has been estimated that every uterine contraction increases cardiac output by 20-30% higher than during uterine relaxation. The increased cardiac output is partly due to the fact that each contraction, approximately 250-300 ml of blood is passed from the uterus into the maternal circulation. It is also possible that increased sympathetic activity due to labor pain, anxiety and fear may be responsible for increased cardiac output along with progressive delivery (19,20).

Pain due to uterine contractions can also cause increased systolic and diastolic blood pressure. Increased cardiac output and systolic blood pressure that accompany childbirth generally do not cause great harm to healthy maternity women. However this may increase the risk of women suffering from heart disease, preeclampsia, or hypertension (19,20).

### ***Metabolic effects***

Increased sympathetic activity is caused by labor pain can lead to increased metabolism and oxygen consumption, decreased gastrointestinal and bladder motility. The pain and anxiety that accompany labor may cause delays in gastric emptying. Increase oxygen consumption, loss of sodium bicarbonate through the kidneys to compensate for respiratory alkalosis due to pain, it's all play a role in the metabolic acidosis which is then also experienced by the fetus.

The stress by labor pain an increase in maternal catecholamine release which causes decreased blood flow (19,20).



### **Activity of the uterus**

Pain and labor stress can affect uterine contractions through increased secretion of catecholamine and cortisol levels, decrease blood flow to the uterus, decreased uterine activity and consequently be affecting labor duration. Pain also results in uncoordinated uterine activity that will lead to prolonge labor (19,20).

Abnormalities of these factors either singly or in combination can cause dystocia. The first factor can not be corrected by manipulation during labor. The second and third factors can be corrected by treatment or manual action or forceps. Psychic factors can affect the power and state of the fetus.

### **Self Hypnosis**

Self hypnosis is a process that we are in a state of relaxed, calm, and focused in order to achieve an outcome or a particular purpose. In self hypnosis, we are required to help ourselves. Our mind is a profound unity, which is seen as an everyday act we are only 10% (this is a conscious / conscious mind), while 90% is the basic concept underlying the act. With self hypnosis, we can reach the subconscious which is the concept (3,10,21).

According to Blair (2007) Self-hypnosis is a technique utilized to quiet or bypass the mind's natural filter so Relatively direct communication can take place between the conscious mind and the subconscious <sup>(2)</sup>. Traditional self-hypnosis is, indeed, a wonderful tool for self improvement. Actually, all hypnosis is self-hypnosis because we use self-dependency, including concentration and imagination, to produce a hypnotic effect. One formula proposed by Knight (2000) regarding self hypnosis is Relaxation + imagination + self talk (22,23).

Based on the above formula, that self hypnosis is a combination of relaxation with imagination, written with positive suggestions to motivate yourself. So here is essentially self hypnosis is one of relaxation, written with imagination and suggestion aimed at himself. Hypnobirthing process works based on the power of suggestion. This process uses positive affirmations, suggestions and visualizations to calm the body, guide the mind, and control its breathing. Pregnant women can do this yourself (self-hypnosis) or through the intermediary of a hypnotherapist (3,10,21).

### **Benefits of Self Hypnosis in labor**

Some of the benefits to be gained in implementing good self hypnosis felt by the mother, fetus, husband / family as well as doctors and paramedics. The benefits are as follows (3,10,21,24):

**For mothers:** pregnant women can control or reduce the level of pain of childbirth, minimize stress, depression during childbirth period, because the mother is much easier to control his emotions, the mother get a sense of comfort, serenity and happiness for delivery more smoothly. Prevent excessive fatigue during labor, and reduce medical complications during labor. Physiologically a pregnant mother who entered the relaxation hypnosis, mind waves into the alpha waves with a



frequency of 7-14 hertz or deeper into theta waves with a frequency of 4-7 hertz. When the mind gets into these waves it encourages the release of endorphin hormones that help eliminate fear, tension and panic. Martin, AA, et al., (2001) states that by Hypnobirthing method, it can speed up Kala I Labor ( $\pm$  3 hours in primipara and 2 hours in multiparas), reduce the risk of complications, and accelerate the healing process in post partum.

**For fetus:** fetus feels emotional closeness with their mom's and bonding attachment is stronger, because the hypnobirthing provide subliminal communication. The Fetus also relatively are not a lack of oxygen, feels peaceful and gets a calm vibration because of the endorphins.

**For husbands:** feel calmer in assisting the birth process, the emotional life of husband and wife is more balanced.

### Relationship between Anxiety and Uterine Contractions

The uterine muscles consist of a collection of smooth muscles that are joined together by connective tissue. Some smooth muscle contraction initiation are not by action potential, but by stimulus factors that directly affect the muscle contraction system. The factors that directly affect muscle contraction system (25)

#### a. Local networking factors

1. Lack of oxygen in the tissues resulting in relaxation of smooth muscle
2. The presence of lactic acid, adenosine and increased of sodium ions will decreases the concentration of calcium ions

#### b. Hormonal factors

Most of the hormones in the circulation will affect smooth muscle, among others: norepinephrine, epinephrine, acetylcholine, angiotensin, vasopressin, oxytocin, serotonin and histamine. Some hormone receptors in smooth muscle will open sodium and calcium ions and will depolarize the membrane. The same thing happens after nerve stimulation.

In some situations depolarization arises in the absence of action potential, this depolarization arises from the presence of calcium ions entering the cell and inducing contractions. Sometimes the contraction or inhibition by the hormone does not cause a change in the membrane potential. In this situation these hormones may activate receptors on the membrane, which is not open ion channels, but still cause changes in muscle fibers, such as the release of calcium ions from the sarcoplasmic reticulum, which then induces or inhibits contractions (25).

Other known receptor mechanism to activates of adenylate cyclase enzyme and guanelat cyclase on cell membrane, which stimulates production of cyclic adenosine monophosphate (cAMP) and cyclic guanosine monophosphate (cGMP) has various effects. One of them is to alter the phosphorilase levels of some enzymes that indirectly inhibit contractions. This is includes pumps of calcium ions from sarcoplasm to the sarcoplasmic reticulum, lowering intracellular calcium ion levels and inhibiting contractions (25).

Norepinephrine and epinephrine both secreted by the adrenal medulla have different effects on alpha and beta receptors. Norepinephrine stimulates more alpha receptors than beta receptors, but epinephrine stimulates both types of receptors equally. The relative effects of norepinephrine and epinephrine on organ depend on the receptor type of the organ. If the organ is all receptor beta then epinephrine stimulation will be more effective (25).

The uterus has a Beta 2 (B2) receptor in which, when stimulated, inhibits uterine contractions. Anxiety will be increasing in adrenergic hormone, including epinephrine that will inhibit uterine contractions. If this condition occurs then the delivery time will be longer due to poor uterine contractions (25).

### **Self Hypnosis and Labor Pain**

In the hypnotic state, physiologically of mind in pregnant woman goes into alpha waves with a frequency of 7-14 hertz or deeper into theta waves with a frequency of 4-7 hertz. When the mind goes into this wave encourage spending endorphin hormone (26):

Endorphins are one class of endogenous opioid neuropeptides that inhibit the transmission of pain impulses in the brain and spinal cord. There are four classes of endorphins: enkephalin, endorphin, dinorphine and endomorphin. These substances include neurohormone that works to bind to opioid receptors. The human body, B endorphins are a class of the most common and studied in relation to pain (27-29).

$\beta$  endorphins is found in significant amounts in the hypothalamus and periaqueductus gray matter (PAG) and slightly in the medulla and spinal cord.  $\beta$  endorphins are said to be much more potent analgesics than enkephalin. Endorphins may cause presynaptic barriers and postsynaptic resistance to pain fibers of type A $\delta$  and type C, which are synthesized in the dorsal horn. These fibers undergo presynaptic inhibition with inhibition of calcium in the nerve end membrane. With the inhibition of calcium, it will happen inhibition transmitter release at the synapse (27-29).

The system of endorphin work is to bind opiate receptors with analgesic effects similar to those of exogenous opiates.  $\beta$  endorphins form an intrinsic pain suppression system that works on the central nervous system. The working principle of endorphins is lowered hinders the speed of neurotransmission with neurotransmitter in presynap through pressing the release of acetylcholine and P substance. Further improve the conduction of potassium thereby enhancing the hyperpolarization of the cell membrane, it can inhibit the cell contraction (27-29).

## Self Hypnosis and Duration of labor

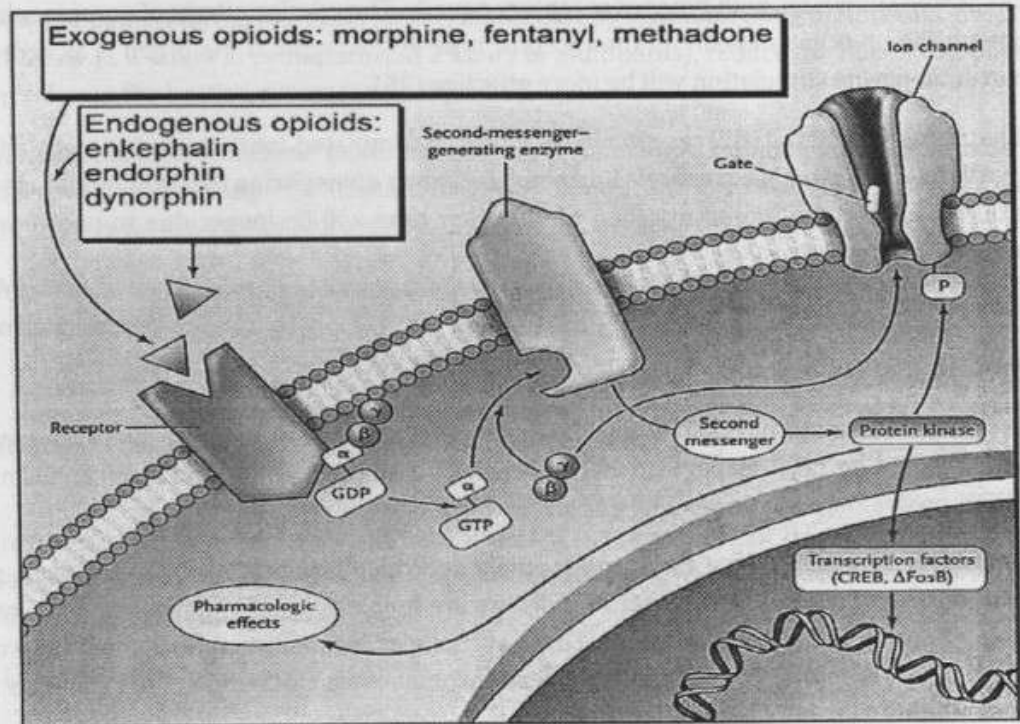


Figure 1: Endorphin work scheme

Source: Stoelting RK (28)

Endorphins are suppressing the release of acetylcholine and P substance. The decline in the production of acetylcholine and P substance, resulting in calcium ions can not enter cells, and potassium remain in the cell, so the cell depolarization does not occur (27-29).

Endorphins also work for the balance of sympathetic and parasympathetic nerves, suppress the production of epinephrine and norepinephrine previously initiated by anxiety, resulting in vasodilation of blood vessels, and redistribution of uteroplacental sirkulasi. A good circulation will produce an adequate contraction. Adequate contractions can accelerate cervical dilatation, so that the first stage of labor go faster (27-31).

## CONCLUSION

Childbirth causes great pain in almost all women. Pain may adversely affect the physiology of labor. As a result of pain there may be an increase in excessive adrenaline secretion that causes vasoconstriction, leading to impaired uterine circulation and eventually fetal hypoxia. Excessive pain will cause anxiety. Excessive anxiety also adds to the pain. Pain and anxiety cause the muscles to become spastic and stiff. This causes the birth canal to become stiff and narrow and lacking relaxation. The above circumstances can not be ignored, so there must be an alternative to reduce the pain, one of them by doing self-hypnosis. When hypnosis will happen by-pass or minimize the



role of Critical Factor subject (person being hypnotized) so that the suggestion can more easily enter the subconscious mind of the subject. Formula self hypnosis is Relaxation + imagination + self-talk.

In the hypnotic state, physiologically mind pregnant woman goes into alpha waves with a frequency of 7-14 hertz or deeper into theta waves with a frequency of 4-7 hertz. When the mind goes into these waves it pushes the endorphin hormone release.  $\beta$  endorphins present in significant amounts in the hypothalamus and periaqueductus gray matter (PAG) and slightly in the medulla and spinal cord.  $\beta$  endorphin is said to be much more potent analgesic than enkephalin. The endorphin work system is binding to opiate receptors with analgesic effects similar to those of exogenous opiates.  $\beta$  endorphins form an intrinsic pain suppression system that works on the central nervous system. The working principle of endorphins is lowered hindering the speed of neurotransmission with neurotransmitter in presynapse through preventing the release of acetylcholine and substance P. Further increasing the conduction of potassium (potassium) thereby increasing hyperpolarization of the cell membrane, it can inhibit the contraction of the cell. Endorphin hormones also play a role to balance the work of the sympathetic and parasympathetic nerves, resulting in vasodilation of blood vessels, and redistribution of uteroplacental circulation, so that the resulting contraction becomes adequate. Adequate contractions can accelerate the occurrence of cervical dilatation, so the first stage of labor is faster.

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