

Warm Pad Reduces Anxiety, Somatic Pain, Strain Pain, Perineal Rupture and Post Partum Blood Volume in Normal Delivery (with Normal Baby Weight Range)

Dr. Jenny J. S. Sondakh
Health Polytechnic of Health
Ministry, Malang, East Java
Indonesia

Dr. Budi Santoso
Airlangga University,
Surabaya, East Java,
Indonesia

Dr. Hari Basuki Notobroto
Airlangga University,
Surabaya, East Java,
Indonesia

Abstract:- Labor is the end of pregnancy, this process is very complicated involving organ activity, as well as the skills and experience of the helper. This study aims to analyze the effect of Warm pad to reduce anxiety, somatic pain, strain pain, perineal rupture and to reduce postpartum blood in normal delivery care. This research was done using randomized post control group design with the number of subjects 60 according to the inclusion criteria. The Mann Whitney test showed that between treatment and control group: (1) there was significant difference of anxiety level, (2) there was significant difference of somatic pain level (3) there was difference and (4) there was significant difference of postpartum blood volume. Overall it can be understood that warm pad administration has a significant effect on strain and anxiety pain. Decreased strain pain will decrease the degree of perineal rupture which may eventually decrease postpartum blood volume. So it can be indirectly said that the administration of warm pad can lower blood volume of postpartum. Provision of warm pad during inpartu, can decrease anxiety, somatic pain, strain pain, and also minimize perineal rupture and postpartum blood volume.

Keywords:- Normal Birth, Warm pad, Anxiety, Somatic Pain, Strain Pain, Ruptura Perineum, Postpartum Blood Volume.

I. INTRODUCTION

Labor is the end of pregnancy where there is a process of expelling the baby, the placenta and the complete membranes of the membranes. This labor process is very complicated involving the activities of the organ system, as well as the skills and experience of birth attendant, especially midwife. Labor is also a critical period for both mother and baby, and in labor many things can happen and there may be complications during labor. These complications can affect both mother and baby, complications can also have an impact on increasing morbidity or maternal and infant mortality rates. (JNPKKR) 2009. According to Maternal and Neonatal Health (2009), labor in Indonesia 85-90% is a normal delivery, only 10-15% with complications or complications. Normal birth is the authority of the midwife, and the midwife is required to keep the labor going on normally, and not take over the pathological labor. The condition of normal or physiological labor, very unpredictable, can also previously predicted to be normal, then

complications occur, otherwise labor predicted accompanied by complications, it can take place normally.

Some of the factors that affect labor are: Power, Passage, Passenger, Psychological, and Helper. Furthermore, it is said that epidemiologically, psychologically manifested with anxiety can occur in all deliveries in both primigravida and multigravida, and anxiety is the dominant factor in whether labor is normal or pathological. Anxiety will increase the hormone adrenaline and can suppress the hormone oxytocin (a hormone produced naturally by the body to stimulate uterine contractions). In addition to the adrenal hormones, there are catecholamine hormones (norepinephrine including epinephrine and dopamine). Catecholamines circulate when the patient is anxious and fearful, resulting in narrowing of blood vessels and reducing the flow of blood that carries oxygen to the uterus resulting in a decrease in uterine contractions, if this happens it will cause prolonged or prolonged labor.

Prolonged labor causes anxiety, excessive anxiety can inhibit normal cervical dilatation, lead to prolonged partus and improve pain perception. Anxiety also causes hormone levels associated with increased stress (β -endorphins, adrenocorticotrophic hormone (ACTH), cortisol and epinephrine). The high effect of hormone levels associated with stress will affect the hypothalamus to release the hormone. Increased ACTH will reduce uterine contractions that inhibit labor, as well as obstacles in the pattern of labor and blood postpartum. According to Bobak (1995), the most important thing to prevent it is to relieve pain, but it is not a pain force to consider, because labor pain is physiological. To consider is anxiety and tension, because both of these will greatly affect the perception of pain and experience of childbirth

Improving maternal health in Indonesia is one of the fifth Millennium Development Goals (MDG's) goals. The MDG's national target is to reduce AKI by $\frac{3}{4}$ from AKI in 1990 (450 per 100,000) to 102 per 100,000 to be achieved by 2015. A reduction in MMR is one of the targets. Results of Indonesia Demographic and Health Survey 2007 stated that AKI for the period of 5 years before the survey (2003-2007) amounted to 228 per 100,000 KH. to 359 per 100,000 KH (Statistics Indonesia, 2012). By 2012, AKI in East Java Province is 97.43 per 100,000 live births. Viewed from the causes of death,

25.09% of maternal deaths were caused by bleeding, preeclampsia / eclampsia of 34.71% infections 4.98%, heart disease 8.25%, and others 26.98% (Provincial Health Office, 2013)

There are 3 main factors causing maternal mortality namely, bleeding, hypertension during pregnancy or preeclampsia and infection (MOH, 2009). Bleeding occupies the highest percentage of maternal deaths (28%). Anemia and chronic energy deficiency (KEK) in pregnant women become the main contributor to bleeding and infection which is the main maternal mortality factor. In many countries at least a quarter of all deaths are caused by bleeding, the proportion ranges from less than 10% - 60%.

Indonesia Demographic and Health Survey 2012 shows infant mortality (IMR) reached 32 per 1000 KH, while Indonesia's target of 23 per 1000 KH. The infant mortality rate under 28 days is still quite high, accounting for 50% of the total infant mortality rate. Generally caused by breathing difficulties at birth (asphyxia), infections and complications in labor and low birth weight. The difficulties in reducing the IMR are caused by the uneven distribution of health workers, the increasing number of graduates of midwives, but their competence is still questionable in helping with delivery, handling complications and decision making.

The Government of Indonesia in particular the Ministry of Health has worked closely with the World Health Organization to reduce maternal and infant deaths, among others by establishing a standard of delivery for midwives in Indonesia, using Normal Delivery Standardization Methods. This method emphasizes the "Maternal and Infant Concept" by minimizing unnecessary interventions as well as reducing postpartum bleeding and preventing hypothermia in newborns. One way to reduce postpartum blood is to reduce anxiety in the maternal mother, because with the anxiety it will increase pain and prolong labor which is likely to cause fetal distress. The concept of mother affection has been applied in the APN method by providing care with the approach of Interpersonal Communication and Counseling (KIP / Counseling). The presence of KIP / Therapeutic counseling and communication aims to help the helper work with patients so that the helper can provide appropriate midwifery care. The ultimate goal of midwifery care for the birthing patient is to minimize the intervention so that labor is normal for the vagina. Therefore, the approach of care that is used more emphasized how a patient does not feel anxious during the birth process.

Labor is a natural or physiological process, it will be experienced by every mother who wants a child. To achieve safe, comfortable childbirth and with the concept of "baby and baby affection" it is important to consider minimizing pharmacological use in overcoming anxiety and pain during labor. Non-pharmacological management at the time of inpartu is a natural effort in maternity preparation with communication, distraction and relaxation approach, which is more in the care of overcoming anxiety and pain at the time of delivery.

Heat therapy is often used to treat pain associated with muscle pain, but there is little research on thermal treatments

that have psychological effects. There is no doubt that heat therapy will have anxiolytic effects, some ads suggest that anxiety treatment can be overcome with heat therapy. In a study directly related to anxiety symptoms, found that people who experienced anxiety or mild depression were given thermal treatment such as saunas, warm blankets in the warm room turned out to experience a greater decrease in anxiety to psychological and physical symptoms and increased appetite compared with the control group not given thermal treatment or warmth. In one study, Simkin (1995) found that based on the hypothesis, the cerebral cortex was involved in both physical processing and psychic warmth. Exposure to warm objects, according to him can increase personal warmth so that feel comfortable, caring, and kind.

This research is the development of the concept of non-pharmacological management of discomfort (pain and anxiety). This Warm pad done on the basis of research theory by Lovell and Elliot (1961). The study proved that the newly cut cow brain tissue was then investigated by insertion of a portion of the brain into the refrigerator and partly at room temperature, found that the cow brain tissue chunks placed in the refrigerator had very little amount of Amino Gama Butirat (GABA). In contrast, a cut of cow brain tissue placed at room temperature $\pm 27^{\circ}\text{C}$ found an increase in GABA to 100% more. Lovell et al. concluded that if the cow's brain is placed at higher temperatures, then according to him the higher the increase in the amount of GABA.

The study was supported by a study conducted by Lickey and Gordon (1991) proving that the GABA system triggered an inhibitory effect on some neurotransmitter systems. It is said that the brain or cerebri plays an important role in GABA in controlling the trigger or inhibitor of opioid / endorphin release which has physiological effects on the body, especially the peripheral nervous system as a receiver or sensor such as skin, muscle or joint.

GABA is a natural chemical found in the brain that plays a role to create a cheerful mood, positive self-image, goodwill and deep sleep. As a neurotransmitter or chemical that allows brain cells or neurons to interact, GABA acts as an anti-anxiety regulator of the brain. People who suffer from anxiety attacks may have chemical imbalances. Research conducted by Levin and Lovell (1962) is also supported by Sebastien Racinais (2003) in the journal J Sport said that the performance of human muscle mechanics is strongly influenced by the temperature as biological processes in general. The results of the muscle's mechanical performance will change when there is variation in body temperature. It is further said that temperature also affects the strength and capacity of muscle work. The study concluded that human muscle will increase its performance capacity as the temperature increases in the muscle. They further concluded that warming has a positive impact on the speed of muscle work. According to PJM Stevens (2005) in his book "Nursing Science", until now the use of hot compresses is limited to certain body parts only. Stevens argues that giving warm compresses causes dilation of the blood vessels thus improving blood flow to the tissue. This results in an increase in the distribution of acidic substances and food ingredients to cells and the greater improvement in cells because unnecessary

substances will be discarded. Increased cell activity will reduce pain and support the healing process, because heat has the effect of reducing muscle tension, causing muscle relaxation.

Cristine (2002) argues that large amounts of blood loss will cause the number of red blood cells in the blood to decrease resulting in anemia. Anemia is the lack of red blood cells, resulting in a lack of oxygen in red blood cells. Red blood cells function to transport oxygen that is distributed to tissue cells including muscle tissue. Lack of oxygen in the tissues will affect the lack of muscle strength to contract, especially contractions of the uterus. Lack of uterine contractions may result in uterine inertia (the uterus does not contract well) progressing to increased pain during labor, prolonged or prolonged labor, postpartum blood and postpartum infections.

Cutaneous stimulation is a skin stimulation done to relieve pain. This can be done with a massage, a hot bath, a compress using ice water, and Transcutaneous Electrical Nerve Stimulation (TENS). Some of these efforts are a simple step toward the perception of pain, but Cutaneous Stimulation aims to lower the level of pain. According to Altman (2000), the degree of water temperature to compress is divided into: very cold <15 °C, cold 15 °C - 18 °C, cool 18 °C - 27 °C, normal 27 °C - 37 °C, warm 37 °C - 40 °C, heat 40 °C - 46 °C, and very hot > 46 °C.

Efforts to overcome the pain in maternal mothers have been widely studied, among others, by giving hot compresses on the perineum. Provision of hot compresses is done in the second stage, which is the opening of the cervix 10 cm until the baby is born. In accordance with the above background, this study is different from the previous research, ie the warm compress has been measured water with a certain temperature, the treatment is given at the stage I at the maximal active deceleration phase (cervical opening 8 cm) and ends in the second stage when the baby's head has been born . This study aims to analyze anxiety, according to previous studies that anxiety has an impact on increasing pain, prolongation of labor and impact on increasing the amount of postpartum blood and the possibility of fetal distress and asphyxia in infants.

Based on the those phenomenon, this study analyzed the effect of warm pad on reduction of anxiety, somatic pain, strain pain, perineal rupture and post partum blood volume on normal delivery. It is expected that this research can produce a new theory that is the influence of warming over anxiety, somatic pain, strain pain, minimize perineal rupture and minimize postpartum blood volume with the use of warm pad.

General purpose of this study focused on midwifery clinical studies in which Warm pad affects treatment group anxiety lower than control, as well as lower treatment group pain rates than controls. The Warm pad also reduces strain pain and decreases the degree of perineal rupture. The use of Warm pad affects the decrease in postpartum blood volume in the treatment group compared with the control group in normal labor.

II. METHODS

This research design uses the randomized post test only control group design. to give treatment to the treatment group: 1) by administration of warm pad at the perineum starting at the time of i active phase of maximal deceleration until the second stage and the baby's head is born in normal delivery to assess: anxiety and pain. 2) conduct a survey of patients in kala i active phase of maximum deceleration, to measure anxiety levels and pain levels in the treatment and control group.

The basis of the study that the GABA system triggers the inhibitory effect on some neurotransmitter systems, that the brain or cerebri greatly contribute to GABA in controlling the trigger or inhibitor of opioid endorphin release that has physiological effects on the body, especially the peripheral nervous system as a receiver or sensor such as skin, muscle or joints. GABA acts as an "anti-anxiety" regulator of parts of the brain. People suffering from anxiety attacks may have chemical imbalances.

The basis of this study is also that in other studies to prove that the newly cut cow brain tissue is then investigated by inserting some pieces of brain into the refrigerator and partly at room temperature. Then found a piece of cow brain tissue placed in the refrigerator has very little amount of Gamma Amino Butyric Acid (GABA). Conversely cuts of cow brain tissue placed at room temperature ± 27 ° C found an increase in GABA up to 100% more. So Lovell et al concluded that the higher the cow brain temperature is placed in the room temperature the higher the increase in the amount of GABA. In addition, this research is based on Harper's statement, (2009) the application of heat therapy theory, that with certain temperature heating the collagen (connective tissue) previously in the form of triple helix will be united, no longer in the form of triple helix but become gelatin. While elastin when heated then pulled or stretched will extend to three times, as the manifestation then the network will become soft and supple, but elastin does not become damaged and will return as before. This heating is also in accordance with the gate-control theory to reduce pain and stress theory to overcome anxiety that impact on uterine contractions to speed up the second stage.

III. RESULTS

This study examines the age variables; education; work; worry; somatic pain; pain strain when the head is born; rupture of the perineum; postpartum blood volume and infant weight, which are related from the effect of using warm pad.

Anxiety	Group		Total
	Treatment	Control	
No Anxiety	13 (43,3%)	5 (16,7%)	18 (30,0%)
Light	11 (36,7%)	4 (13,3%)	15 (25,0%)
Medium	6 (20,0%)	9 (30,0%)	15 (25,0%)
Heavy	0 (0,0%)	6 (20,0%)	6 (10,0%)
Very Heavy	0 (0,0%)	6 (20,0%)	6 (10,0%)
Total	30 (100,0%)	30 (100,0%)	60 (100,0%)

Table 1:- Distribution of Anxiety Frequency Subject to Effect of Warm pad (Wilcoxon-Mann Whitney test p = 0,000)

Pain	Group		Total
	Treatment	Control	
Light	4 (13,3%)	0 (0,0%)	4 (6,6%)
Medium	21 (70,0%)	1 (3,3%)	22 (36,7%)
Heavy	3 (10,0%)	10 (33,3%)	13 (21,7%)
Very Heavy	2 (6,7%)	14 (46,7%)	16 (26,7%)
Heaviest	0 (0,0%)	5 (16,7%)	5 (8,3%)
Total	30 (100,0%)	30 (100,0%)	60 (100,0%)

Table 2:- Distribution of Frequency of Somatic Pain Subject to Effect of Warm pad (Wilcoxon-Mann Whitney test p = 0,000)

Pain	Group		Total
	Treatment	Control	
Light	14 (46,7%)	0 (0,0%)	14 (23,3%)
Medium	13 (43,3%)	1 (3,3%)	14 (23,3%)
Heavy	2 (6,7%)	5 (16,7%)	7 (11,7%)
Very Heavy	1 (3,3%)	13 (43,3%)	14 (23,3%)
Heaviest	0 (0,0%)	11 (36,7%)	11 (18,4%)
Total	30 (100,0%)	30 (100,0%)	60 (100,0%)

Table 3:- Distribution of Pain Frequency Strain Subject to Effect of Warm pad (Wilcoxon-Mann Whitney test p = 0,000)

Perineum Rupture	Group		Total
	Treatment	Control	
No Rupture	20 (66,7%)	6 (20,0%)	26 (43,3%)
Degree I	3 (10,0%)	4 (13,3%)	7 (11,7%)
Degree II	7 (23,3%)	20 (66,7%)	27 (45,0%)
Total	30 (100,0%)	30 (100,0%)	60 (100,0%)

Table 4:- Frequency Distribution of Subject Perineal Rips on Effect of Warm pad (Wilcoxon-Mann Whitney test p = 0,000)

Group	Blood Volume (ml)				Wilcoxon-Mann Whitney
	x	SD	Min	Max	
Treatment	211,67	97,10	50	400	p=0,000
Control	391,67	98,33	150	650	

Table 5:- Frequency Distribution Standard Deviation of Subject Blood Volume on Effect of Warm pad (Wilcoxon-Mann Whitney test p = 0,000)

Blood Volume (ml)	Group		Total
	Treatment	Control	
<250	17 (56,7%)	1 (3,3%)	18 (30,0%)
250-<350	7 (23,3%)	1 (3,3%)	8 (13,4%)
350-<400	5 (16,7%)	12 (40,0%)	17 (28,3%)
400-<500	1 (3,3%)	13 (43,3%)	14 (23,3%)
≥500	0 (0,0%)	3 (10,0%)	3 (5,0%)
Total	30 (100,0%)	30 (100,0%)	60 (100,0%)

Table 6:- Frequency Distribution of Subject Blood Volume on Effect of Warm pad

Group	Baby's Weight (g)				Wilcoxon-Mann Whitney
	x	SD	Min	Max	
Treatment	3105,00	319,85	2400	3650	p=0,221
Control	3031,67	345,53	2200	3800	

Table 7:- Frequency Distribution Standard Deviation Baby's Weight in Effect of Warm pad Subjects

Baby's Weight (kg)	Group		Total
	Treatment	Control	
<2500	1 (3,3%)	1 (3,3%)	2 (3,3%)
2500-<2800	3 (10,0%)	3 (10,0%)	6 (10,0%)
2800-<3000	12 (40,0%)	15 (50,0%)	27 (45,0%)
3000-<3500	9 (30,0%)	7 (23,3%)	16 (26,7%)
≥3500	5 (16,7%)	4 (13,3%)	9 (15,0%)
Total	30 (100,0%)	30 (100,0%)	60 (100,0%)

Table 8:- Weight Frequency Distribution of Baby Subject to Effect of Warm pad

IV. DISCUSSION

Grantly Dick-Read's (1959) opinion that the management of Non Faramakologi Inpartu's sense of discomfort can be overcome by providing understanding and confidence in the delivery process, providing complete information about the labor process, supported by good nutrition and hygiene and need physical exercise during pregnancy or mobilization while inpartu while waiting for the complete opening. In this study, however, Warm pad is administered to patients with inpatients in the hope of being able to influence or be able to provide comfort to the maternity patient, regardless of pharmacological therapy.

The results of this study are mainly aimed at midwives who help the delivery, because the majority of maternal deaths during melahirkn, where maternity mothers will become anxious and feel the great pain due to the birth process. Complications can arise when the mother is unable to deal with feelings of anxiety and pain during childbirth. With the Warm pad is expected to help the maternity mothers to the birth process takes place normally, thus reducing the incidence of complications during childbirth and childbirth.

Warm pad method is given at the time of labor I active phase maximum deceleration until the end of the second stage after the baby's head is born. This method is a technique whereby induction and maintenance is achieved by heat transfer by hot humid administration provided by the perineal route alone. In this technique the patient is left to remain in bed, by moist heat delivery with a certain temperature through a Warm pad designed according to the anatomy of the perineum. Use of Warm pad to reduce somatic pain can be categorized by non-pharmacologic regional anesthesia.

Analytic therapy is basically divided into two, namely that work in the periphery and the work in the central. Warm pad works in peripheral by inhibiting mediator release so that cyclooxygenase enzyme activity is inhibited and prostaglandin synthesis does not occur. This Warm pad works and reacts to the brain like opioid groups which work in the central way by occupying the receptors in the dorsal horn of the spinal cord so that inhibition of transmitter release and excitation to the spinal nerve does not occur. The heat exchange mechanism between the body and the environment takes place in four ways: radiation, conduction, convection and evaporation. Warm pad use is done only locally on the perineum. With the provision of heat, blood vessels dilate so that it will improve blood circulation in the network. In this way the distribution of acidic substances and foodstuffs to the cells is enlarged and the damaged cells will be removed and then repaired. So there will be a better process of exchange of substances. Increased cell activity will reduce pain and will support the healing process because heat has the effect of eliminating tension.

Non-pharmacological management of discomfort in this study emphasizes that how to overcome feelings of worry and anxiety as a source of the emergence of pain perception. The method of labor with Warm pad applies a combination technique of Detraction and Relaxation, or by psychological and physiological approaches. Somatic pain in maternal women is categorized as somatic pain, relatively different in each individual, because every mother who has inpartu would arise contraction so that the pain arises. But the pain in labor is very different from the pain caused by other cases of illness, this is because the pain at the time of delivery will occur according to the pain threshold of each individual depending on their respective perceptions. There have been many studies attempting to prevent and eliminate pain, either with drugs or without drugs.

The role of birth attendant how to minimize medication use. Previous studies of non-drug use with an active role approach from maternity mothers, where maternity mothers need to pay attention and follow every advice and advice provided by the helper, meaning that maternity mothers need to cooperate in the success of non-drug pain relief. In contrast to this study, this study only emphasizes the ability of the helper to use Warm pad because this method does not involve or expect cooperative from the maternity mother, but the helper has more role and patience to use warm pad.

The use of warm pad provides a sense of comfort because of the way this method works in peripheral by inhibiting the release of mediators so that cyclooxygenase enzyme activity is inhibited and prostaglandin synthesis does not occur. This tool works and reacts to the brain such as opioid groups which work in the central way by occupying the receptors in the dorsal horn of the spinal cord, resulting in the inhibition of transmitter release and excitation to the spinal nerve does not occur that ultimately the pain is not channeled to extremities or other organs. Warm pads have an effect on reducing strain pain, especially when crowning heads can occur due to connective tissue in and around the muscles considered 'passive' or 'non-contractile', but the main structure in the tissue is collagen to consider. How to describe collagen work as in physics and biomechanics is a 'viscoelasticity'

behavior. The viscoelastic tissue consists of thick and elastic properties. A thick tissue will change shape but remain permanently damaged.

Warm pad also decreases the perineal rupture because with this tool the perineal tissue can become elastic and will return to its original length after the baby is born. Viscoelasticity is where the tissue (collagen is one of the tissues) in which the deformation / extension of collagen tissue will stretch, then left for a while before slowly returning the original length. Viscoelasticity tells us some practical things about stretching connective tissue in muscles and skin. Viscoelasticity process will increase pain due to the occurrence of stretching on the perineum and vaginal wall. Postpartum hemorrhage may occur due to bleeding in the uterine cavity due to the release of the placenta resulting in the breaking of the blood vessels in the uterine cavity. The occurrence of perineal rupture will also result in an increase in the number of postpartum hemorrhages.

Warm pad is a device that works by providing stimulus reactions in peripheral tissues, and block pain signals present in the brain, so the pain signal is not transmitted to the brain. Similarly to pain due to uterine contractions, it is very difficult to distinguish between the pain of uterine contractions and strain pain. But, warm pad works effectively to block the painful intersections that bring pain signals to the brain, the intersections become narrowed and consequently the pain reactions sent to the brain are reduced.

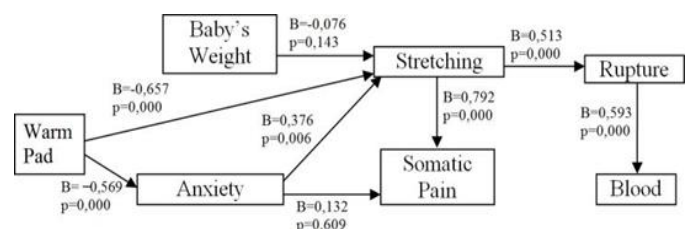


Fig 1:- Warm pad Path Analysis Interval Variable

The scientific basis of the present invention is with the use of a Warm pad of a device designed in such a way as to be used during inpartu or labor when a maximal active phase decelerates up to the second stage of the birth of the baby's head. This tool is designed through a preliminary study and this tool provides a warming effect on the exposed tissue of the Warm pad that causes vasodilation of the blood vessels, in the event of vasodilation where the acid ducts are increased, the cells enlarged and the damaged cells can be repaired. Vasodilation in the blood vessels will also affect the blood circulation will be better. Because the circulation of blood back then there was exchange of substances in the cell level better that will further activate the cell or increased cell activity.

Increased cell activity, including increased collagen activity, which at the collagen level occurs denaturation ie: breaking hydrogen bond, triple helix separated into single (one). Similarly, the fibrils will be separated, the shape of the helix changed or lost its protein structure, but the protein remains in the form of a spiral. Regular protein structure gets warmed up longer will lose its structure, become random and eventually turn into gelatin (gel). The protein structure is

random and becomes gelatin, if this occurs in the perineum, especially the perineum during labor then the perineum becomes flexible (not stiff). Effect of Warm pad on Elastin, then with elastin heating elongated to 3 times the original length, due elastin elongated the perineal tissue becomes thicker so that the perineum more elastic. The effect of Warm pad on the perineum of the maternity patient will minimize rupture on the perineum, so that no third and fourth grade IV ruptures are present, this degree may result in severe bleeding due to its deep and moderate location and this can also affect longer wound healing, prolonged pain and longer treatment costs and interfere with patient activity and interfere with maternity and breastfeeding maternity comforts that will certainly affect the lactation process.

Theoretical studies as well as the results of the analysis obtained it is assumed that the administration of warm pad will also affect some hormones, among others, the hormone ACTH, β -endorphin, adrenaline and catecholamine hormones become stable. Because the hormone becomes stable then the hormone oxytocin effect, which is the hormone oxytocin is very needed once for uterine contractions, uterine contractions will be adequate (good). Adequate contraction of this will accelerate the process of labor, especially in the second stage will be faster / shorter. The hormone can also affect blood vessels where vasodilation of the blood vessels occurs, the oxygen flow to the uterus will increase, so that fetal oxygenation becomes better, will prevent fetal distress, thus preventing asphyxia in the newborn. Good oxygen flow and smooth on the uterus, causing myometrial muscles to contract properly, so the contraction of the uterus becomes better and the duration of the second stage is shorter.

Anxiety is strongly influenced by the presence of Gama Amino Butirat (GABA). Neurochemical theory: Gamma-amino butyric acid (GABA) is an amino acid neurotransmitter believed to function in anxiety disorder. GABA, a neurotransmitter inhibitor, acts as the body's natural anti-anxiety agent by reducing the excitability of the cells thereby reducing the increased frequency of neurons. A study conducted by Levin at all (1962) on heating of cow brain, they concluded that warmer cow brain would increase significant amount of GABA. Increasing the amount of GABA will greatly affect anxiety. In a study it was found that based on the hypothesis, the cerebral cortex is involved in both physical processing and psychic warmth, exposure to warm objects increases personal warmth so as to feel comfortable, caring and kind. Similarly, as Varney's (2007) says, anxiety needs to be anticipated because anxiety will increase the perception of pain and pain and can also cause anxiety. Similarly, research conducted by Likey at all (1991). which states that anxiety is a factor that affects reaction to stimulation and pain perception. Anxiety reactions will occur in two places, namely the central mechanism and the peripheral system. At times a person feels anxious. This signal will be delivered to the brain or cortex, then continued on the limbic system and forwarded to the hypothalamus. After the signal arrives at the hypothalamus, the control system of the cortex will decrease so that there is an anxious reaction or signal delivered by the hypothalamus. This decreased anxiety control will trigger or inhibit the release of opioids / endorphins, hormones that create

tranquility and relaxation. Since the release of opioids / endorphins is inhibited, it affects the physical / physical effects of the human body resulting in decreased response to the immune system, such as decreased response to pain, so that the receptors / sensors in the peripheral nervous system are present in locations such as skin, muscle or joints feel pain. In the physiological state, the response of this pain will be transmitted to the spinal cord and channeled to the medulla then to the midbrain and proceed to the hypothalamus, then again the pain signal returns to the hypothalamus and transmitted to the brain. So on the effects of anxiety affect the response of pain.

This research found that warm pad is a simple tool, cheap, easy to manufacture, easy to use, easy to obtain, can be used by anyone helping the birth. How Warm pad tool works can decrease anxiety, reduce pain Somatic may decrease strain pain, can also minimize perineal rupture, and also important Warm pad device can minimize postpartum blood volume. The use of warm pad can also reduce maternal anxiety levels. Decreased anxiety levels will further reduce somatic pain in maternal mothers. Scientifically somatic pain is caused by strain. The use of Warm pad has been studied to reduce somatic pain due to the strain, which further affects the decrease of maternal anxiety level. The result of this research is a strong influence between somatic pain and strain pain, that with Warm pad can affect: if somatic pain decreases then strain pain tends to decrease also and vice versa. Similarly, it was found that when the strain pain decreased there was no perineal rupture or the degree of tearing tended to be smaller. Using the warm pad method, the impact on the decrease of the perineal rupture will result in less postpartum blood volume than without the warm pad.

V. CONCLUSION

Influence of Warm pad during labor process, among others, reduce pain and anxiety, blood flow metabolism and the exchange of good substances resulting in vasodilation of blood vessels, and support the work of GABA as an agent of natural anti-anxiety of the body. Maternal pain is categorized as somatic pain. The use of Warm pad provides comfort, works on the periphery by inhibiting the release of the mediator so that cyclooxygenase enzyme activity is inhibited and prostaglandin synthesis does not occur, ultimately the pain is not channeled to extremities or other organs. Strain pain in the pelvic soft, can occur due to connective tissue in and around the muscles are considered 'passive' or 'non-contractile'.

The Viscoelasticity process will increase pain due to regina- tion on the perineum and vaginal walls, with Warm pad may decrease the pain of regulars in the pelvic muscles including minimizing tears in the perineum thereby reducing postpartum blood volume. Overall, it can be concluded that Warm pad administration has significant effect on strain and anxiety pain. The decreased strain pain will decrease the degree of perineal rupture which may eventually decrease postpartum blood volume

REFERENCES

- [1]. Albers L. A. Sedler K. D. Bedrick E. J. Teaf D. & Peralta P. 2006. „Factors Related to Genital Tract Trauma in Normal Spontaneous Vaginal Births." *Birth*. 33(2):94–100.
- [2]. Albers LL & Borders N. 2007. „Minimizing Genital Tract Trauma and Related Pain Following Spontaneous Vaginal Birth". *Journal of Midwifery & Women's Health*. 52(3):246–53.
- [3]. Albers LL. Anderson D. Cragin L. Daniels SM. Hunter C & Sedler KD. 1996. „Factors related to perineal trauma in childbirth". *J Nurse Midwifery*. 41(4):269–76.
- [4]. Altman. 2000. *Fundamental and Advance Nursing Skills 3rd Edition*. Dalmar Thomson Learning. Canada.
- [5]. Benfield RD. Hortobágyi T & Tanner CJ. 2010. „The Effects of Hydrotherapy on Anxiety, Pain, Neuroendocrine Responses, and Contraction Dynamics During Labor". *Biol Res Nurs*. 12:28.
- [6]. Bennett. 2003. *Myles Textbook for Midwives 2nd Edition*. Churchill Livingstone. New York.
- [7]. Bobak. Irene M. Lowdermilk. Deitra. Jensen & Margaret 1995. *Maternity Nursing 5th Edition*. Maryland Heights. Mosby Incorporated. Missouri.
- [8]. Brown Patricid. Condsen & Glynn. 1958. *Observations on The Shrink Temperature of Collagen and Its Variations With Age and Disease*. US National Library of Medicine National Institutes of Health. Vol. 17. 196-208.
- [9]. Brown S. T. Campbell D & Kurtz A. 1989. *Characteristics of Labor Pain at Two Stages of Cervical Dilation*. *Pain*. 38:289–295.
- [10]. Carpenito. 2001. *Human Anatomy & Physiology Eighth Edition*. Pearson. USA.
- [11]. Chang MY. Wang SY & Chen CH. 2002. *Effects of Massage on Pain and Anxiety During Labour: A Randomized Controlled Trial in Taiwan*. *J Adv Nurs*. 38:68.
- [12]. Chang SR. Chen KH. Lin HH. Chao YM & Lai YH. 2011. *Comparison of The Effects of Episiotomy and No Episiotomy on Pain, Urinary Incontinence, and Sexual Function 3 Months Postpartum: A Prospective Follow-Up Study".* *Int J Nurs Stud*. 48(4):409–18.
- [13]. CNM Data Group. 1988. *Midwifery Management of Pain in Labor".* *Journal of Nurse-Midwifery*. 43(2):77–82.
- [14]. Cook A & Wilcox G. 1997. *Pressuring pain: Alternative Therapies for Labor Pain Management*. Association of Women's Health. *Obstetric and Neonatal Nurses's Lifelines*. 1:36–41.
- [15]. Cristine. 2002. *Pencegahan Dan Pengawasan Anemia Defisiensi Besi*. Terjemahan Arisman M.B. Widya Medika. Jakarta.
- [16]. Cunningham & F.Gary. 2010. *William Obstetrics*. 23 RD edition . : Mc Graw Hill Medical. United States of America.
- [17]. Dahlen HG. Homer CS. Cooke M. et al. 2007. „Perineal Outcomes and Maternal Comfort Related to The Application of Perineal Warm Packs in The Second Stage of Labor: A Randomized Controlled Trial". *Birth*. 34:282.
- [18]. de Souza Caroci da Costa A & Gonzalez Riesco ML. A. 2006. *Comparison of "Hands Off" Versus "Hands On" Techniques for Decreasing Perineal Lacerations During Birth".* *J Midwifery Womens Health*. 51(2):106–11.
- [19]. Del Pino M. Emilia. MD & Ramón H. Rosado MD. 2006. „Effect of controlled volumetric Tissue Heating with Radiofrequency on Cellulite and the Subcutaneous Tissue of the buttocks and Thighs". *Journal of Drugs in Dermatology*. 5:8 : 714-722.
- [20]. Delaune . S. C. & Ladner. P. K. 2002. *Fundamentals of Nursing Standar and Practice*. 2nd Edition. Thomson – Delmar Learning. USA.
- [21]. Doenges & Marilyn.E. 2001. *Maternal/Newborn Plans of Care: Guidelines for Individualizing Care*. F.A Davis Company. Philadelphia.
- [22]. Downe. S. 2004. *Care In The Second Stage Of Labour*. In C. Henderson & S.Macdonald (Eds.). *Mayes" midwifery (13th ed.)*. Bailliere Tindall. Edinburgh.
- [23]. Dunkley J. 2000: *Mental health promotion In: Dunkley J. Health Promotion in Midwifery Practice*. London. Bailliere Tindall. pp. 173-200.
- [24]. Eckert. K.. Turnbull. D.. & Mac Lennan. A. 2001. *Immersion in Water in The First Stage Of Labor: A Randomized Controlled Trial".* *Birth: Issues in Perinatal Care*. 28(2). 84–93.
- [25]. Eyre R David & Jiu Wu Jiann. 2005 *Collagen Cross – Links*. Departement of Orthopaedics and Sport Medicine. University of Washington. Seattle. *Top Curr Chem*. USA. 247: 207 -229.
- [26]. Fink Regina M. 2009. „Terapi Panas Kering Versus Terapi Panas Lembab". *BMJ* 233-235.
- [27]. Friedman. E. A. 1954. „The Graphic Analysis of Labor". *The American Journal of Obstetrics and Gynaecology of the British Commonwealth*. 77. 1003-1006.
- [28]. Harper. 2009. *Biochemistry Third Edition*. Livingstone. Sidney.
- [29]. Huang. T. L. 2010. *Effects of Hot Compress on Discomfort During First Stage of Labor: A Randomized Controlled Trial (Masters Thesis [In Chinese])*. Graduate Institute of Nursing-Midwifery. National Taipei College of Nursing. Taipei. Taiwan.
- [30]. JNPKKR. 2009. *Asuhan Persalinan Normal*. Mitra Bestari. Jakarta.
- [31]. Keiko Y. Motoko U & Hiroshi Y. 2000. *The Relationships Between Women"s Maternal Anxiety and Psychiatric Symptoms*. *Mental Health Okamoto memorialize foundation*. 11:147-151. Kuntoro. 2008. *Metode Sampling dan Penentuan Besar Subyek*. Pustaka Melati. Surabaya.
- [32]. Labrecque M. Nouwen A. Bergeron M & Rancourt JF. 1999. „A Randomized Controlled Trial of

- Nonpharmacologic Approaches For Relief of Low Back Pain During Labor." *J Fam Pract.* 48:259.
- [33]. Lam Michael. 2001. Heat Therapy and Adrenal Fatigue Syndrome. University School of Medicine in California.
- [34]. Lane. E.. & Latham. T. (2009). Managing Pain Using Heat and Cold Therapy. *Paediatric Nursing.* 21(6). 14–18.
- [35]. Leah L. Borders Albers. Borders Noelle. 2007. „Minimizing Genital Tract Trauma and Related Pain Following Spontaneous Vaginal Birth". *J of Midwifery Women Health.* 52:246–253.
- [36]. Leeman. L.. Fontaine. P.. King. V.. Klein. M. C.. & Ratcliffe. S. 2003. The Nature and Management of Labor Pain: Part I. Nonpharmacologic Pain Relief. *American Family Physician.* 68(6). 1009–1112.
- [37]. Levin. Lovell & Elliott. 1962. The Aminobutyric Acid and Factor Content of Brain Departement of Biochemistry. Mc.Chill University Montreal Canada.
- [38]. Lickey. Marvin E. Gordon & Barbara. 1991. *Medicine and Mental Illness.* Freeman & Company. W. H. New York.
- [39]. May. K. A.. & Mahlmeister. 1994. *Maternal and Neonatal Nursing.* Lippincott. Philadelphia.
- [40]. McCandlish R. Bowler U. van Asten H. Berridge G. Winter C. Sames L. et al. A Randomised Controlled Trial of Care of The Perineum During Second Stage of Normal Labour. *Br J Obstet Gynaecol.* 1998;105(12):1262–72.
- [41]. Morison. 2004. Psikologi Pasien edisi 2. Karisma Putra Utama Offset. Jakarta.
- [42]. Mu Changdao. Li Defu. Lin Wei & Yanwei Dig Gongzila. Temperature Induced Denaturation of Collagen in Acidic Solution. *Biopolymers.* Wiley Periodicals Inc.. 86 : 282 -287.
- [43]. Murray. Michelle L.. Gayle M Huelsmann. 2009. *Labor and Delivery Nursing: Guide to Evidence-Based Practic* Springer Publishing Company. New York.
- [44]. Murray. Robert K. 2006. Harper"s Illustrated Biochemistry fourth edition. Lange Medical Publications. Singapore.
- [45]. Notoatmojo. Soekidjo. 2005. Metodologi Penelitian Kesehatan edisi 3. Rineka Cipta. Jakarta.
- [46]. P.J.M Stevens. Bordui. F.Almekinders. G.I.. Meer.
- [47]. [V.W.E. 2005. Ilmu Keperawatan Jilid I Edisi 2. EGC. Jakarta.
- [48]. Pairman. 2007. *Midwifery Preparation for Practice 3rd Edition.* Churchill Livingstone. Sydney.
- [49]. Parbury – Jane Stein. 2009. *Patient & Person 4th edition.* Churchill Livingstone. Australia.
- [50]. Pearce. Evelyn C. 1999. *Anatomi dan Fisiologi untuk Paramedis.* Terjemahan Sri Yuliani Handoyo. Gramedia. Jakarta.
- [51]. Pearson. K. (1896). "Mathematical Contributions to the Theory of Evolution. III. Regression. Heredity and Panmixia." *Philosophical Transactions of the Royal Society of London.* 187. 253–318.
- [52]. Perry. Peterson & Potter. 2005. *Pocket Guide to Basic Skills and Procedures 5th edition.* Maryland Heights. Mosby Incorporated. Missouri.
- [53]. Prawirohardjo. Sarwono. 2006. Ilmu Kebidanan edisi 7. Yayasan Bina Pustaka Sarwono Prawirohardjo. Jakarta.
- [54]. Sanders J. Peters T.J. Campbell R. 2005. Techniques To Reduce Perineal Pain During Spontaneous Vaginal Delivery and Perineal Suturing: A UK Survey of Midwifery Practice". *Midwifery.* 21(2):154–60.
- [55]. Sebastien Racinais. 2003. „The Temperature Effect on Muscle Contraction" *J Sports Med.* 25.4: 200-203.
- [56]. Sediaoetama. Achmad Djaeni. 2010. Ilmu Gizi untuk Mahasiswa dan Profesi Jilid I. Dian Rakyat. Jakarta.
- [57]. Sherwood. L. 1996. *Human Physiology from Cells to System with Infotrac.* Thomson Learning. Connecticut.
- [58]. Simkin PP. O'hara M. 2002. Nonpharmacologic Relief of Pain During Labor: Systematic Reviews of Five Methods". *Am J Obstet Gynecol.* 186:S131.
- [59]. Simkin. P. Psychologic And Other Nonpharmacologic Techniques. 1995. Principles and Practice of Obstetric Analgesia and Anesthesia. 2nd Ed. Bonica. J. McDonald. J (Eds). Williams & Wilkins. Baltimore.
- [60]. Simkin P. 1995. „Reducing Pain and Enhancing Progress in Labor: A Guide to Nonpharmacologic Methods for Maternity Caregivers". *Birth.* 22(3):161–170.
- [61]. Smeltzer. Suzanne; Bare. Brenda; Hinkle. Janice. 2009. Brunner & Suddarth"s Textbook of Medical Surgical Nursing 12th Edition. Lippincott William & Wikins. North America.
- [62]. Sondakh. Jenny. 2013. *Asuhan Kebidanan Persalinan dan Bayi Baru Lahir edisi 1.* Erlangga. Jakarta.
- [63]. Studd. J. 1973. „Partographs and Nomograms of Cervical Dilation in Management of Primigravida Labour". *British Medical Journal.* 4. 4510455.
- [64]. Sugiyono. 2006. *Statistika untuk Penelitian edisi 2.* Alfabeta. Bandung.
- [65]. Sugondo Dendy. 2008. *Kamus Bahasa Indonesia.* Jakrta edisi revisi : Erlangga.
- [66]. Tamiya. N.. Araki. S.. Ohi. G.. Inagaki. K.. Urano. N.. Hirano. W. & Daltroy. L. H. 2002. „Assessment of Pain. Depression. and Anxiety by Visual Analogue Scale In Japanese Women with Rheumatoid Arthritis". *Scandinavian Journal of Caring Sciences.* 16(2). 137–141.
- [67]. Varney. H.. Kriebs. J.M.. & Gregor. C.L. 2004. *Varney"s Midwifery (4th ed.)* Jones and Bartlett. Boston.
- [68]. Varneys. 2007. *Maternity Nursing Care edisi 1.* Canada : Livingstone.
- [69]. Videbeck. Sheila. 2010. *Psychiatric-Mental-Health Nursing 5th edition.* North America. Lippincott William & Wikins.
- [70]. Wandu dan Gatot Mohamad. 2009 *Ilmu Sosial Budaya Dasar edisi 2.* Salemba. Jakarta.
- [71]. Warren. E. (2010). *Pain: Types. Theories and Therapies.* Practice Nurse. 39(8). 19–22.
- [72]. Williams. C. E.. Povey. R. C.. & White. D. G. 2008. Predicting Women's Intentions to Use Pain Relief Medication During Childbirth Using the Theory of

Planned Behaviour and Self-Efficacy Theory". Journal of Reproductive & Infant Psychology. 26. 168–179.

[73]. World Health Organization. 1994. World Health Organization Partograph in Management Of Labour". The Lancet. 345(8910). 1399-1404.