An Application of Warm Compress in Reducing Pain Level at First Stage of Active Phase

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Abstract: During the first stage of normal labor, the intensity of pain level by patients is increasing with different quality of pain in each patient. Severe pain generally occurs in the active phase of the first stage of labor. Mothers generally feel increased discomfort, sweating, nausea and vomiting. Warm compresses are expected to reduce the scale of pain experienced by birth mothers. The population was 30 people and taken using *accidental sampling technique*. The results showed that there was an influence of the use of warm compresses on the change in pain scale when the active phase 1 where p value <0.04 ($\alpha \leq 0.05$) .The suggestion for mothers in order to use the method of warm compresses to reduce the scale of pain when the active phase of labor. Midwives are expected to be able to intervene in the form of warm compresses to reduce labor pain because it has been proven to have an effect on reducing the intensity of laborpain.

1   INTRODUCTION

One of the factors that influence the level of labor pain is the experience of childbirth (Jordan, 2015). Primigravida mothers do not have birth experience compared to multigravida mothers. Primigravida mothers generally feel anxious and afraid to face childbirth (Afifah, 2015). This condition stimulates the body to release stress hormones, namely the catecholamine and adrenaline hormones .This catecholamine will be released in high concentrations during labor if the mother cannot eliminate her fear before giving birth.

Labor pain is characterized by uterine contractions, actual contractions have occurred in the 30th week of pregnancy called *Braxton hicks* contractions due to changes in the hormones *estrogen* and *progesterone* but *are irregular, painless and contraction strength of 5 mmHg, and the strength* of *Braxton* contractions. These *hicks* will be *his* strength in labor and are regular in nature. Sometimes the discharge of amniotic fluid that usually breaks before the opening is complete, but can also come out before labor. With the expected labor rupture can take place within 24 hours (Gadysa, 20 14).

During the delivery process there is a decrease in the head into the pelvic cavity which presses the pudendal nerve so that is triggers the pain sensation felt by the mother. In addition labor pain is also caused by contractions that take place regularly with intensity that is getting stronger and more frequent. This condition affects the physical and psychological nature of the mother (Manurung, 2015).

During the first stage of normal labor, the intensity of pain felt by the patient increasingly increases with the quality of pain that is different in each patient. Severe pain generally occurs in the active phase of the first stage of labor. Mothers generally feel increased discomfort, sweating, nausea and vomiting. The mother will also feel shaking in the thighs and legs, pressure on the bladder and rectum, back pain and pale around the mouth (Yanti, 2017).

As a result the uterus becomes increasingly tense so that blood flow and oxygen into the uterine muscle decreases because the arteries shrink and narrow which can cause pain that is inevitable (Bobak, 2016).

One of the most tiring and severe, and most pregnant women feel pain or pain during labor is the active phase 1. The use of warm compresses for areas of tension and pain are considered able to relieve pain. Warm reduces muscle spasms caused by ischemia which stimulates neurons that block the

transmission of further painful stimuli causing vasodilation and increased blood flow to the compressed area (Walsh, 2015).

Pain is an unpleasant sensory and emotional experience due to actual or potential tissue damage. Pain is the main reason for someone to seek health care assistance. Pain occurs with many disease processes or simultaneously with several diagnostic or treatment examinations. Pain is disturbing and makes it difficult for more people than any disease (Brunner and Suddarth, 2010).

Various attempts have been made to decrease the labor pain, both pharmacological and non-pharmacological. Pharmacological pain management is more effective than non-farmacological. However, it is more expensive and potentially has adverse effects. Pharmacological therapy is the use of an epidural which have the side effect namely reducing the pressure of blood that can interfere with blood circulation to the fetus. While non-pharmacological methods are cheap, simple, effective, and without adverse effects. Non-pharmacological methods can increase satisfaction during labor if the mother can control her feelings and fears (Judha, 2017).

Non-pharmacological methods include distraction techniques, biofeedback, self-hypnosis, reducing pain perception, and cutaneous stimulation (massage, warm baths, hot or cold compresses, transcutaneous electrical nerve stimulation) (Potter, 2015). Giving hot compress/ warm on the body area will give a signal to the hypothalamus through the spinal cord. When heat-sensitive receptors in the hypothalamus are stimulated, the effector system emits a signal that initiates sweating and peripheral vasodilation. Changes in the size of blood vessels are regulated by the vasomotor center of the medulla oblongata from the brain stem, under the influence of the hypotalamic anterior portion so that vasodilation occurs. The occurrence of vasodilation causes discharges / loss of energy / heat through the skin to increase (Wolf, 2013).

The heat channeled through hot compresses can relieve pain by removing inflammatory products, such as bradykinin, histamine, and prostaglandins which will cause local pain. Heat also stimulates nerve fibers that close the gate so that the transmission of pain to the spinal cord and brain can be inhibited (Price, 2015). The compress with Hot Tubes can seen in the below Figure 1:

Figure 1: Compress with Hot Tubes.

Warm compresses are to provide warmth to certain areas by using fluids or devices that cause warmth to the parts of the body that need them. This action besides to expedite blood circulation is also to relieve pain, stimulate intestinal peristaltic, discharged inflammatory sap to be smooth, and provide calmness and pleasure to the client. Giving a compress was done on inflammation of the joints, muscle spasms, flatulence, and cold (Istichomah, 2014).

The warm compress method can use a variety of methods such as towels or washcloths dipped in warm water and placed on the body parts (towels covered with plastic around the compress area so that heat does not spread out), using hot bags or bladders, hot showers, sunbathing in the sun, use a warm blanket, a hot pillow.

The use of warm compresses for areas of tension and pain are considered capable of relieving pain. It greatly reduces muscle spasm caused by ischemia which stimulates neurons that block the transmission of further painful stimuli causing vasodilation and increased blood flow to the compressed area (Walsh, 2015). Mechanisms of pain control in childbirth can seen in the below of Figure 2:
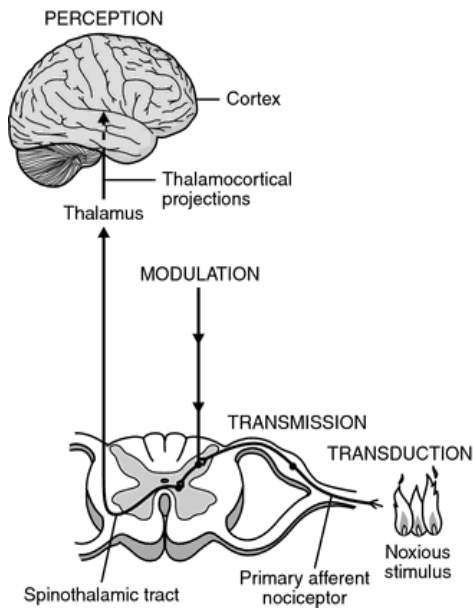
Figure 2: Mechanisms of pain control in childbirth.

Survey conducted by researchers on November 2018 at the Galang Health Center in Deli Serdang Regency, 153 maternal mothers were obtained during the month of August-October 2018. The average number of maternity patients was 51 people and the average number of women giving birth was primiparous mothers with a total of 35 people. Based on observations 5 mothers who will give birth can be seen that the Galang health center does not do a warm compress on mothers who are going to give birth to reduce labor pain but only to relax deep breathing. Therefore, researchers are interested in conducting a study entitled the use of warm compresses to change the pain scale when the Active Phase I phase. The flow of paint management can seen in the Figure 3.

2 RESEARCH METHOD

This research was conducted by using a pre-experimental (*One group pre and post test design*) that is a study that used a group of subjects, measurements were carried out before and after treatment that analyzed the effect of using a warm compress on changes in pain scale at the active phase. The location of the study was conducted at the Galang Health Center, Deli Serdang Regency. Sa MPEL on research amounted to 3 0 people. The time of the study will be in October 2018 - April 2019.
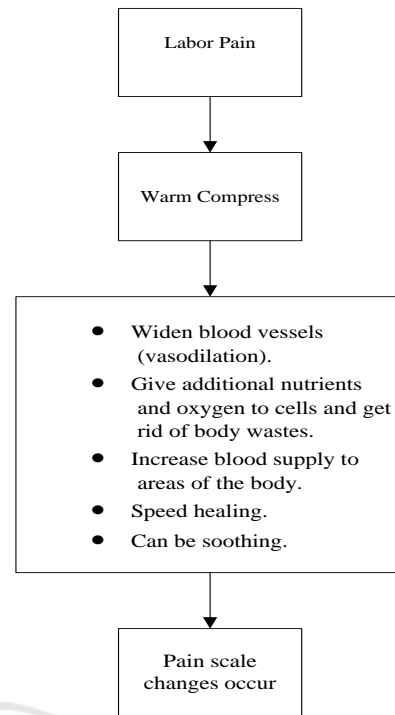
Figure 3: Flow of paint management.

Sample criteria in this study were divided into two namely inclusion criteria and exclusion criteria. The inclusion criteria in this study are willing to be a research respondent and sign the information *concent* given, the mother is active during the first phase, opening 4 to 9, she does not get drugs that have anti-pain effects, mothers in normal or physiological labor without laborinduction. The exclusion criteria in this study are mothers who have or have wounds in the back area, mothers in pathological deliveries, mothers receive pharmacological therapy to reduce pain.

Data collection methods use primary data and secondary data, where primary data is obtained from the first source, both from individuals or individuals such as interviews or the results of questionnaires that are commonly used by researchers and researcher's observations. Secondary data is often referred to as the method of using document material, because in this case the researcher does not directly retrieve the data himself but examines and utilizes the data or documents produced by other parties. Secondary data were obtained from the Galang Health Center

Data analysis for *bivariate* calculations in this study used *paired sampling test* with a degree of confidence of 95%. A variable is said to be related or influential when the value of $p \leq \alpha$ (= 0.05). This proof is carried out to prove the hypothesis of the effect of the use of warm compresses on the change

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in pain scale in the active phase. The hypothesis in this study is, there are differences in the scale of pain before and after a warm compress is performed on the active phase of maternity mothers in the first stage.

The flow of the research starts from gathering the population, then looking for samples that fit the research criteria. Next do a pain scale measurement before a warm compress, using a vase and then do a warm compress on the patient. After that, measure the patient's pain scale again after the intervention. Then, the data analysis in accordance with the data that has been obtained.

Determination of the bourbanis pain scale score is done by measuring the distance between the end of the line on the painless line to the point indicated by the patient, (Gillian A., Hawker, Mian, et al, 2011). The research flow can seen in the Figure 4:
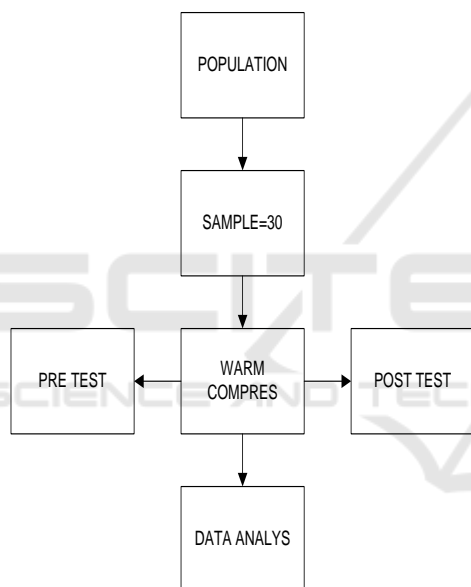

Figure 4: Research flow.

Examination of a procedure n pain with pain scale bourbanis are as follows:
1. Explain to the patient the purpose of the measurement
2. Explain to the patient that the patient is showing pain based on the number listed according to the level of pain felt by the patient.
3. Encourage patients to choose or move the numbers on the bourbanis pain scale according to the intention of the pain bags felt.
4. Giving hot compresses on the area of the patient's body.
5. Advise the patient to choosing/ moving the direction of the arrow on the pain scale bourbanis according to the intensity of pain that feels right.

6. Record and then interpret the meaning of pain stated by sufferers by comparing the pain scale before and after treatment

There are several pain scales that can be used. In general, this scale was divided into categorical scales (no pain, mild illness, moderate pain, and severe pain). Or use of a scale that is described as a horizontal or vertical line whose edges are given a value of "0" indicating no pain and "10" indicating severe pain.

In this research, the most subjective characteristic of pain is the severity or intensity of the pain. Clients are often asked to describe pain as mild, moderate or severe. However, the meaning of these terms is different for nurses and clients. From time to time this type of information is also difficult to ascertain.

Figure 5 explain about pain scale according to bourbanis. The pain scale calculation according to bourbanis was used. Where the pain scale is is divided into five categories: no pain (value 0), mild pain (value 1-3), moderate pain (value 4-6), controlled severe pain (value 7-9) and severe pain uncontrolled (value 10).
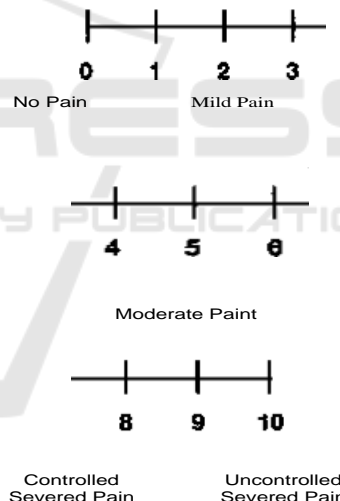

Figure 5: Pain Scale According to Bourbanis.

3 RESULT AND DISCUSSION

Before, warm compresses were performed for women who experienced mild pain of 3 people (10%), moderate pain in 15 people (50%), severe pain in 12 people (40%). From the observations made, the respondent's pain response before giving a warm compress ranged from 4-6. Most respondents complained of severe pain with an average scale of 7 as shown in Table 1. Pain is influenced by various

factors. These factors include age, sex, culture, meaning of pain, location and severity of pain, attention, anxiety, fatigue, previous experience and family and social support. Some of these factors have been found on the observation sheet such as age, sex, ethnicity and administration of pain-reducing drugs.

Table 1: Distribution of Frekuensi Pain Scale before Warm Compress.

Variable	n = 3 0	%
Mild Pain		
Moderate pain	3	10
Severe pain	15	50
controlled	12	40
Uncontrolled Severe	0	0
Pain		

After warm compresses were performed for women who experienced mild pain as many as 15 people (50%), moderate pain 13 people (50%), severe pain controlled 2 people (6.7%). The results showed the majority of the pain scale on respondents after the intervention was mild pain by 15 people (50%), moderate pain by 13 people (43.3%) and the minority of pain intensity was controlled by 2 people (6.7%) Of the 30 respondents the mean pain scale measurement for respondents after the intervention was 3.633, with a standard deviation (SD) of 1.79046 . Measurement of pain is lowest 1 and highest 7. From the estimated interval results it can be concluded that 95% CI is believed to be the average measurement after the intervention is 2.97 to 4.3.Frequency distribution of pain scale after warm compress can seen in the Table 2.

Table 2: Frequency Distribution of Pain Scale after Warm Compress.

Variable	n = 3 0	%
Mild Pain	15	50
Moderate pain	13	43.3
Severe pain controlled	2	6.7
Uncontrolled Severe	0	0
Pain		

The following is a difference in pain scale data before and after a hot compress, which can be seen that there are significant changes before and after the intervention can seen in the Figure 6:
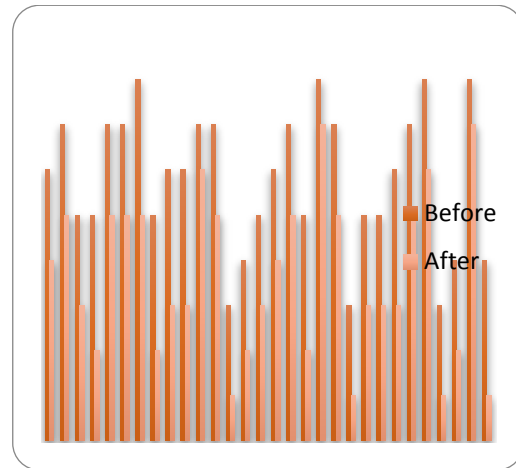

Figure 6: Pain Scale Before and after Intervention.

Table 3 explain than the results of the analysis of the average scale of pain when the active phase 1 before being given a warm compress of 5.8000 with a standard deviation of 1.54026 and an error standard of 0.28121 where the pain scale is known at least 3 with a maximum pain scale of 8 . The Average pain scale when one of the active phase after given a warm compress of 3.6333 with a standard deviation of 1.79046 and 0.32689 in which an unknown error standard pain scale at least 1 the pain scale maximum of 7 . Based on a mathematical calculation of the difference in decrease in the average scale of pain when the active phase 1 before and after the intervention is 2.1667. By using the statistical test *Paired Samples T Test* obtained p value = 0.04 (α <0.05). This study found that there was an influence of the use of warm compresses on the scale change of pain when the active phase 1 was in primipara in Galang Health Center, Deli Serdang Regency.

This is consistent with the theory that warm compresses are factors that influence the reduction in labor pain. Warm compresses can make the body feel relaxed because of the warmth of the water which helps blood vessels to widen so that blood flow is smooth. The results of this study are supported by the interview method when observing maternity pain in maternal, this observation method uses a tool in the form of a VAS (Visual Analouge Scale) pain level questionnaire, a rubber bottle for compressing warm water with a temperature of 37º-41ºC and a towel towelpengalas to be placed on the lower back of the mother.

Table 4: Differences in pain scale stage 1 before and after warm compresses are given.

Pain Scale	The mean	Elementary school	P value
Before the intervention	5,8000	1.54026	
			0.04
After the intervention	3,6333	1.79046	

A similar opinion regarding the results of this study was demonstrated by Arsitya (2015) in her study entitled the effect of giving warm compresses to the reduction of labor pain in BPS KusniSrimarwartiDlingoBantul Yogyakarta in 2015. In the study showed a significant effect of warm compresses on labor pain the first method used method in this research is to use the method of observation and interviews.

Most of the mothers in the party experienced a sense of comfort after being given a warm compress. Warm compresses applied to the mother's lower back in the area where the fetal head presses on the spine of the head will reduce pain, warmth will increase circulation to the area so as to improve tissue pressure caused by pressure. This warm compress has proven to be effective in reducing labor pain and helping to reduce pain during labor. Overall based on what we have observed, all respondents on average said that the labor pain they felt was reduced even though the responses they gave differed.

The above findings are in line with the results of Yani's (2015) Effect of Giving Warm Water Compresses on the Feeling of Comfort in Childbirth Process Active Phase, which shows that giving warm water compresses that are given on the lower back of the woman for 20 minutes in the area where the fetal head presses the spine will reduce labor pain, the active phase Increases circulation to the area so that tissue tissue repair is caused by pressure. Heat can be channeled through conduction (hot water bottles, electric heating pads, lamps, warm dry and moist compresses) or conversion (Ultrasonography, diathermy).

Based on the result of researchers was concluded that using warm compresses can decrease the pain when one of the active phase. Warm compresses are useful for increasing local skin temperature, blood circulation and stimulating blood vessels, reducing muscle spasms and increasing pain threshold, relieving pain sensation, stimulating intestinal peristalsis, removing inflammation of the sap and providing calm and comfort to the mother inpartu.

Based on the researchers' assumptions, warm compresses are very useful in reducing labor pain because warm compresses can increase local skin temperature, improve blood circulation, reduce muscle spasms, eliminate pain sensations, provide calm and comfort to the mother inpartu so that pain can reduce labor pain.

4 CONCLUSIONS

There is an influence of the use of warm compresses to changes the pain scale of the active phase 1 style in Galang Health Center, Deli Serdang Regency where the p value <0.04 ($\alpha \leq 0.05$) .

5 SUGGESTIONS

Women can use this method of warm compresses to reduce the scale of pain when the active phase of labor. The results of this study are expected to be input for public health center and can improve services in managing labor pain, by providing knowledge about the management of labor pain with warm compresses. Midwives are expected to be able to intervene in the form of warm compresses to reduce labor pain because it has been proven to have an effect on reducing the intensity of labor pain. Next researcher with a wider area and the respondents are more so the results are more effective, but it is also necessary to develop research with other factors that influence the reduction of pain in the birth mothers of the first stage phase active.

ACKNOWLEDGEMENTS

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