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The Effect of Warm Compresses on the Intensity of Labor Pain in Primigravida Mothers in the First Stage of Active Phase at the Blangkajeren City Health Center in 2022

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ABSTRACT

According to the Ministry of the Republic of Indonesia, from several studies that have been carried out, around 90% of deliveries are accompanied by pain during childbirth. Giving warm compresses is one method to meet the need for comfort and to reduce maternal pain during childbirth. Done by placing a hot jar with a temperature of 42°Con the sacrum area, lower abdomen, and on the perineal area, for 20 minutes. This study aims to analyze the effect of giving warm compresses to reducing pain in in-partu mothers during the active phase I at the Blangkajeren Health Center in 2022. The results of the respondents' pain level before compressing were moderate pain (3.3%), severe pain (43.3%) and very severe pain (53.3%). And the pain level of the respondents after warm compresses was mild pain (16.7%), moderate pain (33.3%), severe pain (26.7%), and very severe pain (23.3%). In conclusion, there is a significant effect of warm compresses on reducing the level of labor pain with the results of the hypothesis test H0 being rejected and Ha being accepted as a significant value of 0.00 <0.05.

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INTRODUCTION

Labor pain or labor pain is contraction of the uterine muscles during labor, which causes the cervix to efface and dilate. His is also one of the forces on the mother that causes the cervix to open and push the fetus down. Most mothers in labor experience pain during childbirth, but the intensity of this pain is different for each mother in labor. This is often influenced by the psychology of the mother during childbirth (fear and trying to fight labor) and the presence or absence of support from people around during the delivery process. . (Syaifuddin, 2016).

Maternal death according to the definition of the World Health Organization (WHO) is the death of a woman during pregnancy, childbirth, or 42 days after delivery with causes that are directly/indirectly related to childbirth. (Ministry of Health RI, 2018)

The 5th Global Sustainable Development Goals (SDGs) target is to reduce the MMR to 102/100,000 KH and the infant mortality rate (IMR) from 68 to 23/1,000 KH, by 2015. In line with the SDGs, the Ministry of Health (Depkes) is targeting a reduction in MMR in Indonesia in 2030 it is 70/100,000 KH and the decrease in IMR in 2030 is to 12/1000 KH (Ministry of Health 2017).

Based on reports from district/city profiles, the MMR reported in North Sumatra in 2011 was 313/100,000 KH, in 2012 it was 106/100,000 KH, the government succeeded in reducing MMR in North Sumatra. However, there was an increase in MMR in 2015 of 249/100,000 KH, it can be concluded that the MMR was very high. (North Sumatra Health Office, 2017).

The main causes of maternal death in Indonesia are caused by bleeding (28%), infection (11%), eclampsia (24%) (Karwati et al, 2017) unsafe abortion (13%), hypertension in pregnancy (12%), and the consequences of long labor (8%) (Sarwono Prawirodhardjo, 2011). According to RISKESDAS, the causes of neonatal death 0-6 days are respiratory problems (37%), prematurity (34%), sepsis (12%), hypothermia (7%). The causes of infant death 7-28 days are sepsis (20.5%), congenital abnormalities (19%). (Karwati et al, 2017).

Most women who give birth experience pain during childbirth, but the intensity of this pain is different for every woman who gives birth. This is often influenced by the psychology of the mother during childbirth, namely fear and trying to fight labor and whether there is support from people around during the birth process. (Yanti, 2016). Labor and birth are physiological processes that accompany the life of almost every woman. Even though the process is physiological, it is generally frightening because it is accompanied by severe pain, sometimes even causing life-threatening physical and mental conditions (Yanti, 2016).

Mothers who will give birth give different responses to labor pain. Some mothers said they were scared, worried, cried, moaned, screamed, refused help, or moved aimlessly during labor contractions, while others were tolerant and optimistic. (Anik, 2018). The most effective and efficient way to relieve labor pain is medical action carried out by doctors such as administering drugs and non-medical or non-pharmacological actions. Non-medical or non-pharmacological actions that can be carried out by health workers or midwives include relaxation, mind-focusing and imagination techniques, breathing techniques, hydrotherapy, massage or therapeutic touch, hypnosis, acupuncture (an alternative treatment that is widely used to treat various diseases). and acupressure (Danuatmaja, 2018).

Most of the mothers giving birth (90%) chose non-pharmacological methods to deal with pain. Warm compress therapy is one of the non-pharmacological methods to treat pain. This method has a very low risk, is inexpensive, simple, effective, without adverse effects and can increase satisfaction during labor. The use of warm compresses for tense and painful areas is considered to be able to relieve pain. Warmth reduces muscle spasm caused by ischemia which stimulates neurons that block further transmission of pain stimuli causing vasodilation and increased blood flow to the area of compression (Walsh, 2016).

Research conducted by Wahyuni (2014) at RB. Ananda Mojokerto which aims to measure whether there is a decrease in pain with the warm compress method in labor mothers. From the results of the study, it was obtained that the intensity of pain before the warm compress technique was carried out, the average value was 73.4% and after the intervention the average value was 66.6%. So it can be concluded that there was a significant effect before and after the intervention $p = 0.002 < \alpha = 0.05$, so H1 was accepted, from the use of warm compresses on reducing the pain scale in labor mothers.

Many factors affect the perception and individual respondents to pain. The warm compress technique during labor can maintain the components of the vascular system in a state of vasodilation so that blood circulation to the pelvic muscles becomes homeostatic and can reduce anxiety and fear and adapt to pain during labor. Warm compress therapy has been shown to increase the mother's ability to tolerate pain during childbirth due to the effects of heat. (Mutia F, et

al 2014). The Blangkejeren City Health Center, Blangkejeren District, Gayo Lues Regency is one of the 24-hour inpatient health centers in the city of Blangkejeren.

From the results of a preliminary survey that I conducted at the Blangkajeren City Health Center. In July, out of 10 mothers in labor in the 1st stage, 6 mothers said the pain was very severe, so the mothers chose to give birth by cecaria surgery. And 4 other mothers said they were a little worried about the delivery process.

RESEARCH METHOD

Research design

This study uses a Quasy Experimental Design (Quasy Experimental Design), with designs in two different groups, namely treatment and control. With the aim of knowing the difference in the level of labor pain and the effect of giving warm compresses to Primigravida mothers during the Active Phase I at the Blangkajeren City Health Center in 2022. And the sample was taken by accidental sampling (choose a sample that fits the criteria). This design can be described as follows:

Table 1. Criteria Sample

Group	Pre Test	Intervention	Post Test
Experiment	T1	X	T2
Control	T1	-	T2

Information :

T1 : Measuring the level of pain in primigravida labor in the first stage, the active phase was not given warm compresses.

T2 : Measuring the level of pain in primigravida labor in the first stage, the active phase is given a warm compress.

X : Intervention to reduce labor pain for primigravida in-partu mothers, stage I, active phase using warm compresses and without using warm compresses

Research Location and Time

This research was carried out at the Puskesmas KotaBlangkajeren and the research will be carried out from August to November 2022.

Tab1e 1. Research PoA

No	Description	July	August	Sept	Oct	Nov
1	Title Submission					
2	Acc title					
3	Proposal preparation					
4	Proposal exam acc					
5	Research preparation					
6	Research implementation					
7	Result tab					
8	Thesis examination					

Population and Sample

a. Population

The population is the entire object under study (Notoatmodjo, 2012). The population in this study were all pregnant mothers of Primigravida in the active phase, which was estimated to be 30 people based on the TTP of mothers giving birth at the Blangkajeren City Health Center in 2022.

b. Sample

According to Sugiyono (2015) the sample is part of the number and characteristics possessed by the population. The sample in this study was 30 people based on data from

ANC patient visits with the interpretation of the date of delivery until November, where 15 people were given warm compresses and 15 people were not given warm compresses. With the technique of Accidental Sampling.

Data collection technique

Researchers and owners collected data by collecting all third-trimester pregnant women in the Kotapinang Health Center area and providing counseling about the importance of the benefits of warm compress therapy and how to use it. This counseling aims so that when the mother experiences signs of childbirth, the mother does not experience excessive fear and anxiety about her labor pain and understands how to use warm compresses as a pain reliever. After obtaining an overview of the problems that exist in the field, the researchers began to collect data by giving questionnaires at the beginning of counseling to respondents. As well as asking the respondent to sign an informed consent form, which means that the respondent is willing to be examined if the respondent has entered the first active phase of labor in the future. After completing counseling for pregnant women, the researchers asked for help from owners or employees working at the Puskesmas to get information about mothers who were about to give birth. Researchers conducted research by observing the condition of the mother giving birth whether the mother had entered the opening of the first stage. Observations and measurements were made during the first stage of the active phase, namely at 4cm-10 cm opening (complete opening).

For the experimental group: When the respondent said that there was pain, the researcher started warm compress therapy in accordance with existing standard procedures or how to carry out warm compress therapy (attached to this study is how to apply warm compresses to mothers in the first stage of labor) every 2 hours during the first stage of labor. 30 minutes. For the control group, the researcher observed the pain felt by the respondents without giving any treatment. While continuing to observe and ask the mother about the pain she felt before and after the warm compress therapy was carried out using the pain scale according to Bourbanis. Warm water used when compressing provides a local vasodilation effect which can increase muscle relaxation and reduce the sensation of pain due to stressed muscles. Relaxation and comfort can reduce stress hormones. Increased comfort and decreased stress hormone production can increase uterine contractility so that labor can be faster. (Simkin, 2008).

RESULTS AND DISCUSSIONS

Characteristics of Respondents

Based on the data obtained from the results of research at the Blangkajeren Health Center, the characteristics of the research respondents are as follows:

Tab1e 2. Characteristics of Respondents

No	Characteristics	Frequency	Percentage (%)
1	Age		
	20-25 Years	13	43,3
	26-30 Years	4	46.7
	>30 Years	3	10.0
	Total	30	100
2	Education		
	Junior High School	5	16.7
	Senior High School	21	70.0
	PT	4	13,3
	Total	30	100
3	Work		
	IRT	23	23.3
	Self-employed	7	76,6
	Total	30	100

Based on Table 4.1, it can be seen that the characteristics of respondents who were given warm compresses and not given warm compresses based on the age of the majority aged 26-30 years were 14 people (46.7%). Characteristics of respondents based on the education of the majority of SMA as many as 21 people (70.0%). Characteristics of respondents based on the occupation of the majority of IRT as many as 23 people (76.7%).

Intensity of labor pain before warm compresses are applied to primigravida mothers in the first stage of active phase

Based on the data obtained from the results of the study. Data were obtained from 30 respondents and the results are presented in a frequency distribution table according to the X variable under study as follows:

Table1 3. Distribution of Frequency of Pain Intensity of Labor Before Delivery Warm Compresses for Primigravida Mothers in the Active Phase I

		Frequency			
		Control		Treatment	
		F	%	F	%
Pre-Test	Mild Pain	0	0	0	0
	Moderate Pain	1	6.7	0	0
	Severe Pain	11	73.3	11	73.3
	Very Severe Pain	3	20.0	4	26,7
	Total	**15**	**100**	**15**	**100**

Based on Table 4.2, it can be seen that the frequency distribution of the intensity of labor pain before giving warm compresses to 15 mothers in labor, namely the control group with 11 severe pain (73.3%), very severe pain with 3 people (20.0%) and moderate pain with 1 person (6.7%). Meanwhile, there were 11 people (73.3%) in the severe pain treatment group, and 4 people (26.7%) in very severe pain.

Intensity of labor pain after warm compresses are applied to primigravida mothers in the first stage of the active phase

Based on the data obtained from the results of the study. Data were obtained from 30 respondents and the results are presented in the frequency distribution table according to the Y variable studied as follows:

Table1 4. Distribution of the frequency of labor pain intensity after delivery Warm Compresses for Primigravida Mothers in the Active Phase I

		Frequency			
		Control		Treatment	
		F	%	F	%
Post-Test	Mild Pain	0	0	2	13,3
	Moderate Pain	4	26,7	12	80.0
	Severe Pain	11	73.3	1	6.7
	Very Severe Pain	0	0	0	0
	Total	**15**	**100**	**15**	**100**

Based on Table 4.3, it can be seen that the frequency of the intensity of labor pain after giving warm compresses to 15 mothers in labor, namely the control group with severe pain was 11 people (73.3%), moderate pain was 4 people (26.7%). While the moderate pain treatment group consisted of 12 people (80.0%), 2 people with mild pain (13.3%), and 1 person with severe pain (6.7%).

Bivariate Analysis

Bivariate analysis was used to see the effect of giving warm compresses on the intensity of labor pain in primigravida mothers in the active phase I at the Blangkajeren Health Center in 2022 using

an independent T test. First, you have to test the normality of the pretest and posttest. To test this Normality can be used with the Shapiro-Wilk test

a. Control Group

This test looks at whether the data is normally distributed or not with a significant value > 0.05.

Table1 4. Tests of Normality

	Group	Statistics	Shapiro-Wilk	
			df	Sig.
Score	Pre-Test	0.917	15	0.175
	Post-Test	0.891	15	0.070

From table 4.4 above, the results of the normality test with the Shapiro-Wilk test show that the data is normally distributed with sig > 0.05. Meet the test requirements for the average difference of the Paired Sample Test. So this research can be done by using the Paired Sample Test.

b. Test Paired Sample Test

This test looks at the comparison of the average intensity of labor pain before and after giving warm compresses.

Table1 5. Paired Samples Test

Variable	Means	SD	SE	t	pValues	n
Pain Intensity Pre-Test – Post-Test Control	1.333	0.724	0.187	7,135	0.000	15

Table 4.5 shows that the t value is 7.135 with sig. 0.000 and 0.000 <0.05 (p <α) thus H0 is rejected, meaning that there is a significant difference in labor pain between before being given the inhale treatment and after being given the inhale treatment. Thus, it can be concluded that based on the level of labor pain, using inhalation has a significant effect on reducing labor pain in the active phase of the first stage.

c. Experimental Group

This test looks at whether the data is normally distributed or not with a significant value > 0.05.

Table1 6. Tests of Normality

	Group	Statistics	Shapiro-Wilk	
			df	Sig.
Score	Pre-Test	0.917	15	0.175
	Post-Test	0.891	15	0.070

From table 4.4 above, the results of the normality test with the Shapiro-Wilk test show that the data is normally distributed with sig > 0.05. Meet the test requirements for the average difference of the Paired Sample Test. So this research can be done by using the Paired Sample Test.

d. Test Paired Sample Test

This test looks at the comparison of the average intensity of labor pain before and after giving warm compresses.

Table1 7. Paired Samples Test

Variable	Means	SD	SE	t	pValues	n
Pain Intensity						

Pre-Test – Post-Test Experiment	4,000	0.845	0.218	18,330	0.000	15

The table shows that the t value is 7.135 with sig. 0.000 and 0.000 <0.05 (p <α) thus H0 is rejected, meaning that there is a significant difference in labor pain between before being given warm compress treatment and after being given warm compress treatment. Thus, it can be concluded that based on the level of labor pain, using warm compresses has a significant effect on reducing labor pain in the active phase of the 1st stage.

Cross Tabulation of Labor Pain Intensity in Control Group and Experiment Group in Primigravida Mothers in Active Phase I

Table1 8. Tests of Normality

	Group	Shapiro-Wilk		
		Statistics	**df**	**Sig.**
Pain Value	Control	0.891	15	0.070
	Experiment	0.895	15	0.080

From the table above, the results of the normality test with the Shapiro-Wilk test show that the data is normally distributed with sig > 0.05. Meet the requirements of the average difference test independent T test Test.

Table1 9. Comparison of Pain Intensity Scores After Warm Compresses In Primigravida Maternity Stage I Active Phase

Warm Compress	Means	SD	Mean Difference	p.s	95% CI		n
					Lower	Upper	
Control	7,13	1,187			0.440	3,301	15
Experiment	4.73	1,223	2,400	0.000			15

Based on table 4.9, it is known that the average score of labor pain in the group without warm compresses = 7.13 with a standard deviation (SD) = 1.187, while the average pain score in the group receiving warm compresses = 4.73 with a standard deviation (SD).) = 1,223. The test was carried out at an error rate of (α) 5% or 0.05 and obtained 0.000 so that Ho was rejected and H1 was accepted. Based on these data, it can be seen that < means that there is a significant difference in the level of labor pain between the group without warm compresses and the group receiving warm compresses. This means that there is an effect of warm compresses on labor pain in primigravida maternity mothers in the active phase of the first stage.

Discussion

a. First Stage of Labor Pain Before Warm Compresses 2022

Table 4.2 shows the frequency distribution of the intensity of labor pain before giving warm compresses to 15 mothers in labor, namely the control group, 11 people (73.3%), severe pain, 3 people (20.0%) very severe pain and 1 moderate pain. (6.7%). Meanwhile, there were 11 people (73.3%) in the severe pain treatment group, and 4 people (26.7%) in very severe pain.

The delivery process often causes discomfort or pain. According to Hughs (1992) in Bobak (2005) labor pain in the first stage or stage 1 is caused by uterine contractions which cause cervical dilatation and thinning as well as uterine ischemia due to myometrial contractions. This pain is getting stronger and stronger. Because of this increasingly intense pain, mothers often ask to be given analgesic drugs or to have a Caesarean section.

The results of this study are in line with the research of Dewi Ratnasari, et al, 2015 Midwifery Study Program Diploma IV STIKES Aisyiyah Yogyakarta, The Effect of Warm Compresses on Labor Pain in the First Stage at BPM Wikaden Imogiri Bantul Yogyakarta 2015. There is a significant effect on reducing labor pain with the results of hypothesis testing H0 is accepted with a

significance value of 0.003 <0.05. So warm compresses have an effect on labor pain in the first stage at BPM Wikaden Imogiri Bantu Yogyakarta. In line with Dian Puspita Yani's research, 2012. The Effect of Giving Warm Water Compresses on Feeling Comfortable in the Active Phase I Labor Process. The results of the Mann Whitney-U statistical test produced a value of Z-2.049 <Z table with Asymp sig: 0.04, which means that there is a significant effect of giving warm compresses in providing comfort during labor.

b. The Level of First Stage of Labor Pain After Warm Compresses

In table 4.3, it can be seen the frequency distribution of labor pain intensity after giving warm compresses to 15 maternity mothers, namely the severe pain control group as many as 11 people (73.3%), moderate pain as many as 4 people (26.7%). While the moderate pain treatment group consisted of 12 people (80.0%), 2 people with mild pain (13.3%), and 1 person with severe pain (6.7%).

Judging from the data above, it can be stated that after warm compresses were applied to the mother's back, lower abdomen, and perineum, the first stage of labor women who experienced labor pain experienced a significant decrease in pain levels. This is in accordance with the theory that warm compresses are a factor that affects the reduction of labor pain. Warm compresses can make the body feel relaxed because the warmth of the water helps dilate blood vessels so that blood flow is smooth. (Sarwono, 2012).

Childbirth is a normal process experienced by fertile women. This important event is eagerly awaited by husband and wife as a fruit of love in marriage. With full anticipation the husband and wife must have prepared for the birth of the expected baby. But in the midst of the joy of welcoming the birth of her baby, a mother will feel afraid to face labor because of the pain she will experience. The pain that is caused when facing labor is caused by gradual uterine contractions little by little. Due to the thrust of this contraction, the cervix will gradually begin to open, stretching little by little, to provide a birth canal for the baby. Warm compress therapy that can be given to mothers in the face of labor is expected to reduce anxiety and pain due to childbirth. Pain from muscle spasm responds well to heat, because heat dilates blood vessels and increases local blood flow. Heat relieves pain by removing inflammatory products, such as bradykinin, histamine and prostaglandins that cause local pain. Heat also stimulates the nerve fibers that cover the pain gate, then the transmission of pain impulses to the spinal cord and brain can be inhibited so that it will provide a sense of comfort when the mother will give birth to her child. (Potter, 2005).

c. The Effect of Warm Compresses on the Intensity of Labor Pain in Primigravida Mothers in the First Stage of Active Phase at the Blangkajeren Health Center in 2022

Bivariate analysis was used to see the effect of giving warm compresses to the intensity of labor pain in active phase I primigravida maternity mothers at the Blangkajeren Health Center in 2022 using an independent T test. First, you have to test the normality of the pretest and posttest. To test the normality can be used with the Shapiro-Wilk test.

Based on table 4.9, it is known that the average score of labor pain in the group that did not apply warm compresses = 7.13 with a standard deviation (SD) = 1.187, while the average pain score in the group that did not apply warm compresses = 4.73 with a standard deviation (SD) = 1.223. The test was carried out at an error rate of (α) 5% or 0.05 and obtained ρ 0.000 so that Ho was rejected and H1 was accepted. Based on these data it can be seen that ρ <α means that there is a significant difference in the level of labor pain between the group that did not apply warm compresses and the group that did warm compresses. This means that there is an effect of warm compresses on labor pain in primigravida mothers in the active phase I. In line with the research of Dwi Ratnasari, et al, 2015, STIKES Ayisyiya Yogyakarta The Effect of Warm Compresses on Pain in the First Stage of Labor at BPM Wikaden, Imogiri Bantul Yogyakarta 2015. Proving a significant effect on reducing pain levels in labor mothers with the results of hypothesis testing H0 being rejected and Ha accepted, with a significant value of 0.003 <0.005.

Currently, there are many ways that are used to relieve labor pain. This method uses pharmacological and non-pharmacological actions. Medical measures used include the use of analgesics, epidural injections, Intracthecal Labor Analgesic (ILA), Transcutaneous Electrical Nerve Stimulation. Almost all of these medical procedures have side effects on the mother and the fetus. For example, in the use of analgesics. Analgesic can cross the placenta so that it has an effect on the baby's breathing, and when the baby grows up he will tend to be addicted to certain drugs. Side effects on the mother are feelings of nausea and dizziness, and the mother cannot rely on her stomach muscles and push when uterine contractions occur. So the delivery will be longer. While non-pharmacological therapy includes relaxation,

d. Research Limitations

The researcher realizes that conducting this research is not without drawbacks. This is not caused by intentional factors, but there are limitations experienced in this study. The limitations in this study are due to the current outbreak, namely Covid-19 so that all activities carried out related to research must be based on health protocols.

CONCLUSION

Based on the results of the research and discussion that have been described in the previous chapter, it can be concluded that several important things in this study are as follows: The majority of labor pain levels without warm compresses (Pre test), at the Blangkajeren Health Center in 2022 are, The majority of labor pain levels without compresses were warm, severe pain (60%) and very severe pain (53.4%). The majority of labor pain levels with warm compresses at the Blngkajeren Health Center in 2022 were, the majority of labor pain levels with warm compresses (posttest) were moderate (53.4%), based on the level of reduction in labor pain ($p<0.05$). From the results of research that has been conducted on 30 respondents, it turns out that there is a significant effect between using a compress and without using a compress.

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