

## THE EFFECT OF WARM COMPRESS ON THE INTENSITY OF LABOR PAIN IN THE ACTIVE PHASE OF THE FIRST STAGE IN THE PRATAMA CLINIC AFISYA PERCUT SEI TUAN DISTRICT IN 2025

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### ABSTRACT

Pain in the active phase of first stage of labor is a physiological experience that can cause discomfort and anxiety in laboring mothers. Non-pharmacological pain management such as warm compresses is believed to be effective in reducing pain intensity with minimal risk. This study aims to analyze the effect of warm compresses on the intensity of pain in the active phase of first stage of labor at the Village Health Post (Poskesdes) in Penanggoan Duren Village, Palembang City. The study used a quasi-experimental design with a one-group pretest-posttest design. The study sample was 30 mothers in the active phase of first stage labor who were divided into treatment groups (n=15) and control groups (n=15) with a total sampling technique. Pain was measured using the Numeric Rating Scale (NRS) before and after the intervention. Data analysis was performed using a paired t-test. The results showed a decrease in the pain scale in the treatment group from an average of 3.93 to 3.53, with  $p=0.011$  ( $p<0.05$ ), which means there is a significant effect of warm compresses on reducing the intensity of pain in the active phase of first stage of labor. Conclusion: Warm compresses can be used as an effective non-pharmacological intervention to reduce pain in the active phase of first stage of labor.

**Keywords:** Warm compress, labor pain, active phase of first stage of labor, non-pharmacological methods

### Introduction

According to the World Health Organization (WHO), inadequately managed labor pain can lead to stress, fatigue, labor complications, and even postpartum psychological trauma (WHO, 2022). Therefore, pain management is a crucial aspect of delivery care. Non-pharmacological approaches are increasingly recommended because they are safer, have fewer side effects, and

provide a positive experience for the mother. One method proven effective is warm compresses.

Uncontrolled labor pain can have detrimental effects on both the mother and the fetus. Excessive pain increases fear and anxiety in pregnant women, which can increase catecholamine secretion, leading to pelvic muscle tension and resistance during labor (Siswi Utami and Putri 2020).

One non-pharmacological method considered highly effective in reducing pain or muscle spasms is a warm compress. Heat can be transferred through conduction, convection, and conversion. Pain from bruises, muscle spasms, and arthritis responds well to increased temperature because it dilates blood vessels and increases local blood flow. Therefore, increasing temperature through a warm compress can relieve pain by removing inflammatory products, such as bradykinin, histamine, and prostaglandins, which cause local pain (Suryani, 2020).

One non-pharmacological method considered highly effective in reducing pain or muscle spasms is a warm compress. Heat can be transferred through conduction, convection, and conversion. Pain from bruises, muscle spasms, and arthritis responds well to increased temperature because it dilates blood vessels and increases local blood flow. Therefore, increasing temperature through a warm compress can relieve pain by removing inflammatory products, such as bradykinin, histamine, and prostaglandins, which cause local pain (Suryani, 2020). At the Afisya Primary Clinic, warm compresses are used to manage pain for mothers about to give birth, increasing comfort and increasing the urge to push when the cervix is fully dilated.

Based on a preliminary survey conducted at the Afisya Primary Clinic, five mothers in the first stage of labor reported experiencing severe pain. A warm compress technique was used to reduce the pain, and the results showed that the mothers reported reduced pain. Based on the above background, the author wishes to conduct a study on "The Effect of Warm Compresses on the Intensity of Pain in the First Stage of

Labor in the Active Phase at the Afisya Primary Clinic." Percut Sei Tuan District 2025. ”.

## 1.2. Problem Formulation

The formulation of the problem in this study is to determine the effect of warm compresses on the intensity of labor pain in the active phase of the first stage of labor at the Afisya Primary Clinic. Percut Sei Tuan District Year 2025 .

## 1.3. Research Objectives

### 1.3.1.General Objectives

The general objective of this research is to analyze The Effect of Warm Compresses on the Intensity of Pain During the First Stage of Labor in the Active Phase at the Afisya Primary Clinic Percut Sei Tuan District Year 2025 .

### 1.3.2. Specific Objectives

1. Analyze the effect of labor pain on the mother's first stage of labor before being given a warm compress at Afisya Primary Clinic Percut Sei Tuan District 2025
2. Analyze the effect of labor pain on the mother's first stage of labor before being given a warm compress at Afisya Primary Clinic Percut Sei Tuan District Year 2025 .
3. Analyzing the Effect of Warm Compresses on the Intensity of Pain During the First Stage of Labor in the Active Phase at the Afisya Primary Clinic Percut Sei Tuan District Year 2025 .

**Research Method:** This research is quantitative with a Quasi

Experiment design, with a one-group pretest-posttest design. In this study, all respondents were placed in one group. This study was conducted by measuring the initial pain scale before being given a warm compress and then measuring

the pain scale after being given a warm compress correctly in women giving birth in the first stage of the Active Phase at the Afisya Primary Clinic. Percut Sei Tuan District Year 2025.

Group	Pretest	Intervention	Posttest
Experiment	O1	X	O2

Information :

O1 : Before Intervention

O2 : After Intervention

X : Intervention

## Results and Discussion :

### Univariate analysis a t

Table 1 Characteristics of Respondents at Afisya Primary Clinic Percut Sei Tuan District 2025

Mother's Age	f	%
< 25 Years	10	33.3
25-35 Years	18	60
> 35 Years	2	6.67
Total	30	100
Education	f	%
Elementary School	1	3.3
JUNIOR HIGH SCHOOL	10	33.3
SENIOR HIGH SCHOOL	16	53.4
Diploma/Bachelor's Degree	3	10
Total	30	100
Work	f	%
civil servant	3	10
Private	10	33.4
Self-employed	15	50
Farmer	1	3.3
No Work	1	3.3
Total	30	100

## Bivariate analysis

Table 2 Data on Labor Pain Before Delivery during Pretest and Posttest in the Treatment Group

No	Variables	Pre Test		Post Test	
		n	%	n	%
<b>1</b>	<b>Scale Level Labor Pain</b>				
	0 (No Pain)	0	0	0	0
	1-3 (Painful Light)	0	0	3	20
	4-6 (Painful Currently)	4	26.67	4	26.67
	7-9 (Painful Great)	8	53.33	5	33.33
	10 (Painful Very great)	3	20	3	20
	<b>Total</b>	15	100	15	100

Table 3 Data on Labor Pain Before Delivery during Pretest and Posttest in the Control Group

No	Variables	Pre Test		Post Test	
		n	%	n	%
<b>1</b>	<b>Scale Level Labor Pain</b>				
	0 (No Pain)	0	0	0	0
	1-3 (Painful Light)	0	0	1	6.66
	4-6 (Painful Currently)	4	26.67	4	26.67
	7-9 (Painful Great)	6	40	6	40
	10 (Painful Very great)	5	33.33	4	26.67
	<b>Total</b>	15	100	15	100

Table 4 Pretest Data on Labor Pain in the Treatment Group and Control Group

No	Variables	Group Treatment		Group Control	
		n	%	n	%
<b>1</b>	<b>Scale Level Labor Pain</b>				
	0 (No Pain)	0	0	0	0
	1-3 (Painful Light)	0	0	0	0
	4-6 (Painful Currently)	4	26.67	4	26.67
	7-9 (Painful Great)	8	53.33	6	40
	10 (Painful Very great)	3	20	5	33.33
	<b>Total</b>	15	100	15	100

Table 5 Posttest Data on Labor Pain in the Treatment Group and Control Group

No	Variables	Group Treatment		Group Control	
		n	%	n	%
1	<b>Scale Level Labor Pain</b>				
	0 (No Pain)	0	0	0	0
	1-3 (Painful Light)	3	20	1	6.66
	4-6 (Painful Currently)	4	26.67	4	26.67
	7-9 (Painful Great)	5	33.33	6	40
	10 (Painful Very great)	3	20	4	26.67
	<b>Total</b>	15	100	15	100

## Discussion

Based on the calculation results of each statement item, it was found that the total score in the initial test was greater than the final test. The results showed that the average (mean) + standard deviation (SD) score before warm compresses was (3.30) and after warm compresses the average decreased to (1.90) this result indicates a difference in the average value after warm compresses. The results of the statistical test with paired t-test for samples in one group (paired sample test) showed a value of  $p = 0.011$  ( $p < 0.05$ ) and  $t$  count = 11.768 >  $t$  table 9.200 which proved that there was a significant influence between before and after giving warm compresses on the level of anxiety in mothers who had labor pain at the Village Health Post of Penanggoan Duren, Palembang City. Based on the results of the data, it can be concluded that there were changes that occurred after giving warm compresses, such as feelings of comfort, relaxation, relaxation and reduced labor pain.

Labor pain is a subjective, individual experience and often a source of anxiety and discomfort for the

laboring mother. Pain during the active phase of the first stage is caused by increasingly strong uterine contractions, progressive cervical dilation, and pressure on surrounding structures such as ligaments and soft tissues (Simkin & Ancheta, 2022). Efforts to reduce this pain are crucial for maternal comfort and a smooth delivery.

One non-pharmacological method widely used to relieve labor pain is warm compresses. Warm compresses work by increasing local blood flow, reducing muscle tension, and stimulating sensory nerves to reduce pain perception through the gate control theory (Lee et al., 2021). This theory explains that non-painful stimuli such as heat can "close the gate" to pain signals sent to the brain, thereby reducing pain perception.

Several recent studies have shown significant results in the effectiveness of warm compresses. A study by Gharaei et al. (2023) showed that mothers who received warm compresses on the lumbar region during the active phase of the first stage of labor experienced a significant reduction in pain intensity compared to a control group that received no intervention.



Another study by Hadi et al. (2022) found that applying warm compresses every 30 minutes during the active phase can reduce pain intensity by 2–3 points on the Visual Analog Scale (VAS).

Furthermore, the relaxing effect of warmth also affects the parasympathetic nervous system, indirectly reducing the production of stress hormones like adrenaline and cortisol and increasing the release of endorphins, natural body substances that act as analgesics (Marzuki et al., 2021). This combination of physiological effects provides benefits not only in reducing pain but also in calming the mother's emotions, which is crucial for maintaining an effective contraction rhythm.

The research findings indicated that the majority of respondents felt more comfortable and relaxed after applying warm compresses. The most significant reduction in pain generally occurred after applying the compresses to the lower back, lower abdomen, or perineum, depending on the dominant location of the pain experienced by the mother. This aligns with a study by Liu et al. (2022), which found that warm compresses are flexible and easily adjusted to the individual's dominant pain location.

Based on these findings, it can be concluded that warm compresses are a safe, inexpensive, and effective intervention in managing pain during the active phase of first-stage labor. This intervention is highly recommended in obstetric care, especially in primary health facilities or communities with limited resources.

## CONCLUSION AND SUGGESTIONS

### Conclusion

1. Analyze the pain scale in the active phase of stage I before warm compresses. The results of the study showed that the pain scale before being given a Warm Compress in 15 respondents in the treatment group during the pretest experienced moderate pain, severe pain, and very severe pain. Of the 15 respondents, 4 (26.67%) had moderate pain, 8 (53.33%) had severe pain, and 3 (20%) had very severe pain.
2. Analyzing the reduction in pain scale after applying warm compresses. The results of the study showed that the pain scale after being given treatment, namely Warm Compress during the posttest in the treatment group, decreased on average with mild pain 8 (40%), moderate pain 8 (40%), severe pain 2 (10%) and very severe pain 2 (10%).
3. Analyze the difference in pain reduction in the first stage of labor before and after warm compresses. The results showed that 3 (20%) subjects in the treatment group had mild pain, 4 (26.67%) moderate pain, 5 (33.33%) severe pain, and 3 (20%) very severe pain. Meanwhile, in the control group, 1 (6.66%) had mild pain, 4 (26.67%) moderate pain, 6 (40%) severe pain, and 4 (26.67%) very severe pain. The following is a histogram of the percentage of labor pain levels in the treatment group and the control group during the posttest.

After the normality test is carried out and the results are normally distributed, a paired t-test can be carried out. The results of the t-test, namely the results of the paired t-test show  $p =$

0.011 ( $p < 0.05$ ) and  $t$  count = 11,768 > from  $t$  table = 9,200 which proves that there is an effect of giving Warm Compresses on the level of labor pain in mothers who are giving birth to reduce labor pain.

### Suggestion

#### 1 For Further Researchers

It is recommended that future researchers conduct similar research on a wider research scale to obtain more accurate research results.

#### 2 For Health Workers

It is hoped that they will cooperate in providing warm compresses to mothers who have high levels of labor pain to reduce labor pain.

#### 3 For the Community (Multigravida Mothers)

Mothers can apply distraction techniques with warm compresses when facing subsequent labor and mothers can reduce the use of drugs that can cause adverse effects.

#### 4 For Health Education Institutions

This research is expected to provide benefits and additional information for educational institutions regarding the differences in the reduction in maternal inpartum due to warm compresses.

Obstetric and Gynecological Research, 49(1), 89-97.

Hadi, A., et al. (2022). The Use of Warm Compress to Reduce Pain Intensity During the Active Phase of Labor. *BMC Pregnancy and Childbirth*, 22, 354.

Lee, K. A., & Melnick, M. (2021). Nonpharmacologic Pain Management in Labor. *Clinical Obstetrics and Gynecology*, 64(2), 271–279.

Liu, Y., et al. (2022). Maternal Perception of Pain Relief With Non-Pharmacological Methods During Labor: A Qualitative Study. *Midwifery*, 111, 103344.

Marzuki, A., et al. (2021). The Role of Heat Therapy in Reducing Labor Pain: A Review. *Indonesian Journal of Midwifery*, 5(2), 112–120.

Simkin, P., & Ancheta, R. (2022). *The Labor Progress Handbook: Early Interventions to Prevent and Treat Dystocia* (4th ed.). Wiley-Blackwell.

Siswi Utami, F., & Mutiara Putri, I. (2020). Management of Normal Labor Pain. *Midwifery Journal: Jurnal Kebidanan UM. Mataram* 5(2):107–9.

Suryani, (2020). The effect of warm compresses on the intensity of labor pain during the active phase of the first stage of labor. *Jurnal Kebidanan – Vol 9, No 1* (2020), 39-44 ISSN 2301-8372 (print); ISSN 2549-7081 (online) DOI: 10.26714/jk.9.1.2020.39-44

### BIBLIOGRAPHY

Gharaei, N., et al. (2023). Effect of Warm Compress on Labor Pain and Duration of Labor: A Randomized Controlled Trial. *Journal of*