EFFECTIVENESS OF ICE MASSAGE ON LABOR PAIN INTENSITY DURING THE FIRST STAGE

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ABSTRAK : PENGARUH EFEKTIFITAS PIJAT ES TERHADAP INTENSITAS NYERI PERSALINAN KALA I DI WILAYAH KERJA PUSKESMAS PASIR SAKTI LAMPUNG TIMUR

Menurut data Dunia dalam *World Health Organization* (WHO, 2023) kasus ibu dengan persalinan nyeri menyatakan bahwa hanya 10-15% persalinan yang berlangsung tanpa rasa nyeri, dengan demikian bahwa data tersebut paling banyak ditemukan ibu dengan persalinan nyeri yaitu prevalensi sebesar 85-90% persalinan berlangsung dengan nyeri. Tujuan penulisan ini untuk mengetahui pengaruh efektifitas pijat es terhadap intensitas nyeri persalinan Kala I Di Wilayah Kerja Puskesmas Pasir Sakti Lampung Timur

Metode penelitian dengan jenis penelitian kuantitatif, Penelitian dilaksanakan di Wilayah Kerja Puskesmas Pasir Sakti Lampung Timur dan rencananya dilakukan pada bulan Mei-Juni tahun 2025. Rancangan *Quasi Eksperimental* dengan *posttest only with control group design.* Populasi seluruh ibu memasuki kehamilan trimester III dengan HPL bulan Mei dan Juni berdasarkan kantong persalinan sejumlah 42 responden, sampel 32 responden, teknik *purposive sampling.*

Hasil rata-rata intensitas nyeri sebelum intervensi mean 0,632, hasil sesudah mean 4,69. Rata-rata intensitas nyeri sebelum pada kelompok kontrol mean 0,629, sesudah mean 5,56. Hasil nilai *p value* 0,000< α (0,05) yang artinya H_0 ditolak dan Ha diterima, yang berarti ada pengaruh teknik pijat es terhadap intensitas nyeri persalinan Kala I. Hasil *p value* 0,005< α (0,05). Nilai *p value* 0,006< α (0,05) artinya ada perbedaan yang brmakna antara kedua variabel penelitian

Kata kunci : nyeri persalinan, pijat es, titik akupresure

ABSTRACT

According to *World* data in the *World Health Organization* (WHO, 2023) the case of mothers with painful labor states that only 10-15% of labor takes place without pain, thus that the data is most commonly found mothers with painful labor, namely a prevalence of 85-90% of labor takes place with pain . The purpose of this paper is to determine the effect of the effectiveness of ice massage on the intensity of labor pain in the first stage in the Working Area of Puskesmas Pasir Sakti East Lampung.

The study employed a quantitative research method and was conducted in the working area of Puskesmas Pasir Sakti, East Lampung, during May–June 2025. A quasi-experimental design with a posttest-only control group was used. The study population consisted of all mothers in their third trimester of pregnancy with an expected delivery date (EDD) in May and June, based on the maternity register, totaling 42 individuals. A purposive sampling technique was applied to obtain a sample of 32 respondents.

The average result of pain intensity before intervention mean 0.632, the result after mean 4.69. Average pain intensity before the control group mean 0.629, after mean 5.56. The result of the *p value of* 0.000 < α (0.05) which means H0 $_{is}$ rejected and Ha is accepted, which means there is an effect of ice massage techniques on the intensity of labor pain in Stage I. The *p value* result is 0.005 < α (0.05). The *p value of* 0.006 < α (0.05) means that there is a significant difference between the two research variables.

Keywords : labor pain, ice massage, acupressure points

INTRODUCTION

Childbirth is the process of expelling (birth) the products of conception that can live outside the uterus through the vagina to the outside world. This process can be said to be normal or spontaneous if the baby is born in a position at the back of the head and takes place without the help of tools or assistance, and does not injure the mother and baby. In general, this process takes place in less than 24 hours (Fijri and Nurliyani, 2024)

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The most common problem women face during childbirth is pain. If pain is not managed, it can lead to anxiety, fear, and stress in the mother, which can exacerbate the pain. Every mother experiences labor pain and unique experiences in coping with childbirth. The pain experienced varies physically and psychologically, and each woman's response to pain also varies significantly (Sari, 2018).

According to World data in *the World Health Organization* (WHO, 2023) cases of mothers with painful labor state that only 10-15% of labors take place without pain, thus the data most often found mothers with painful labor, namely a prevalence of 85-90% of labors taking place with pain (WHO, 2022)

In Indonesia, in 2023, a total of 4,684,169 mothers were recorded giving birth. West Java Province had the highest number of deliveries at 523,263, while the lowest number was in Papua Pegunungan Province with 747 mothers giving birth. Meanwhile, the incidence of labor pain in 2023 of all mothers giving birth was recorded as 95% experiencing labor pain, with 45% categorized as moderate pain and 50% as severe pain. In Indonesia, mothers who experienced labor complications accompanied by pain, 22% stated that their labor was painful due to severe pain during labor, while 63% did not receive information about preparations that should be taken to reduce pain during labor. (Ministry of Health, 2023).

Lampung Provincial Office in 2023 the number of deliveries was 150,842 mothers and experienced labor pain of 30.0%, in East Lampung Regency the number of deliveries in 2023 was 10,570 mothers and experienced complications of 25.0%, and the number of labor pain incidents in 2022 reached 75.0% of incidents and in 2023 the number of labor pain incidents reached 89.5% of incidents. (Lampung Health Office, 2023).

Based on the number of deliveries in East Lampung in 2024, the following details of the target number of deliveries in several community health centers are as follows: Pasir Sakti Community Health Center: 553 deliveries with a labor pain incidence of 95%, Adirejo Community Health Center: 430 deliveries with a labor pain incidence of 86% and Karyatani Community Health Center: 390 deliveries with a labor pain incidence of 92% (East Lampung Regional Health Office, 2024).

Pain is a common but difficult-to-define experience, a type of discomfort caused by sensory nerve stimulation. Pain is subjective and individual, meaning each mother experiences pain differently. Labor pain is not constant, but intermittent. In the early stages of labor, the pain is mild. The later stages of labor are severe. Labor pain is a physiological process. Pregnant women have several months to prepare for labor, including learning how to manage pain (Rejeki, 2020).

Severe pain during the first stage of labor can lead mothers to choose the easiest and quickest methods for pain relief. The increasing number of women seeking pain-free labor has led to various approaches to reducing pain. The impact of pain on the mother during labor is often perceived as a source of pain that will lead to increased, prolonged pain. Labor pain is an unpleasant feeling that occurs during labor. The impact of labor pain on the fetus that is unbearable for the mother can negatively impact the smoothness of labor and cause distress in the baby (Rejeki, 2020).

If pain is not managed properly, it can lead to other problems, such as increased anxiety during labor, which can lead to increased adrenaline production and vasoconstriction, which reduces maternal blood flow to the fetus. Decreased blood and oxygen flow to the uterus, along with tissue ischemia, can lead to fetal hypoxia, and a prolonged labor for the mother, leading to increased pain impulses. This can increase maternal and infant morbidity (Faujiah, 2018). Untreated labor pain can increase anxiety, tension, fear, and stress. Increased glucose consumption in stressed mothers leads to fatigue and catecholamine secretion, which inhibits uterine contractions. This can lead to prolonged labor, which ultimately leads to maternal anxiety, increased pain, and prolonged stress (Ellysusilawati, 2018).

Although childbirth is a physiological event for women, it's undeniable that fear and anxiety about the pain they will experience remain. Labor is synonymous with pain and aches as uterine contractions open the birth canal and push the baby's head toward the pelvis. Pain during labor influences pain sensations, including feelings, behavioral responses, and psychological states, including physiological changes such as blood pressure and respiratory rate (Handayani, 2017).

Pharmacological pain management is more effective than non-pharmacological methods, but pharmacological methods are more expensive and potentially have adverse effects. Non-pharmacological methods, on the other hand, are inexpensive, simple, effective, and have no adverse effects. Non-pharmacological methods can also increase satisfaction during labor because the patient can control her feelings and strength. Relaxation, breathing techniques, movement and position changes, massage, hydrotherapy, heat or

cold therapy, *auditory* (murottal), *guided imagery,* acupressure, ice massage, aromatherapy are some non-pharmacological techniques that can increase patient comfort during childbirth and have an effective influence on the birth experience (Handerson in Handayani et al, 2016).

Ice massage therapy is a non-pharmacological method with no side effects for the mother or fetus. This therapy can reduce pain, relieve stress and anxiety, provide relaxation, comfort, and shorten the duration of labor (Yulizawati, 2024).

Applying ice massage can provide various benefits, including improving energy flow there and reducing stress and discomfort by activating peripheral nerve receptors. This may be because ice massage stimulates thin fiber receptors more effectively than acupressure. Therefore, by applying pressure for longer periods and more frequently, ice massage can be used to enhance its effects on labor pain. Maintaining stimulation of acupuncture points over time can improve the flow of vital energy in the meridians and produce more significant healing results (Nehbandani et al., 2019).

It is thought that meridian contractions cause disorders that occur during labor. Among these disorders is pain. Contractions can be released and meridians can be restored by stimulating acupressure points along the meridians. According to some researchers, activating acupressure points reduces pain by preventing the transfer of pain sensations and likely increasing endorphin levels in the blood. (Suryani, 2023)

Ice massage is performed by applying pressure to the source of the pain felt during labor, thereby releasing muscle tension, reducing back pain during labor, improving blood circulation, and ultimately promoting relaxation. Ice massage techniques during labor will help relieve muscle cramps, reduce pain and anxiety, speed up labor, relieve muscle tension in the thighs, and expand the pelvic bones due to relaxation of the muscles around the pelvis, making it easier for the baby to descend through the birth canal. It is effective in helping reduce back pain during labor and is relatively safe because it has almost no side effects (Hulya, 2023).

Giving ice massage can close the gate of pain messages that will be transmitted to *the spinal cord* and brain, in addition, strong pressure in this technique can activate endorphin compounds that are in the synapses of spinal and brain nerve cells, so that the transmission of pain messages can be inhibited and cause a state of reduced pain sensation (Hulya, 2023).

In line with Hajimini's (2020) research, comparing pain intensity immediately, 30 minutes, and 1 hour post-intervention in the three groups showed significant differences between the groups. At 30 minutes post-intervention ($p < 0.05$). Tukey's test showed this difference was related to ice massage. Ice massage and acupressure techniques reduced pain during labor. However, ice massage provided more persistent pain relief. Due to the high pain intensity and increased pain experienced by women during the active phase of labor, it is suggested that repeating this technique during the first stage of labor can be an effective, accessible, cost-effective, and non-invasive technique to help reduce labor pain intensity.

The results of the initial survey conducted in February showed that 89 mothers entered the first stage of labor in the last 3 months in 12 health centers (BPM) within the Pasir Sakti Health Center in East Lampung, with an average of 10 deliveries per month. 95% of the mothers reported experiencing labor pain and were unable to control it. During an interview in February 2025, 10 mothers entering the first stage of labor stated that if the labor pain they felt could not be controlled, they would undergo a cesarean section, but there was no indication for surgery during the examination.

In this study, researchers are interested in conducting interventions in the form of ice massage because this therapy can reduce or control labor pain, but not many health workers and mothers giving birth know about this intervention, so that by providing ice massage, it can stimulate our nerves where the response is transmitted to the spinal cord and brain, in addition, strong pressure in this technique can activate endorphin compounds in the synapses of spinal and brain nerve cells, so that the transmission of pain messages can be inhibited and cause a decrease in pain sensation status.

RESEARCH METHODS

In this study, the author used quantitative research . Quantitative research methods are a research method used to obtain an accurate picture of a problem's characteristics. The Working Area of Pasir Sakti Health Center, East Lampung, and is planned to be carried out from May to June 2025. **The** research design used is a *Quasi Experimental research design* with a *posttest only approach with a control group design.* This design is a design using a comparison group (*control*) but in this research design there is no *pretest* (Notoatmpodjo, 2016). The population in this study was all mothers entering the third trimester of pregnancy with an estimated due date in May and June based on the

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delivery bag of 42 respondents in the Pasir Sakti Health Center Work Area, East Lampung in 2025. Based on the total sample calculation, the number of respondents was 16 people in the intervention group and 16 respondents in the control group, resulting in a total of 32 respondents. In this study, the author used a *purposive sampling technique* . *Purposive sampling* is a sampling technique based on a consideration. certain guidelines made by the researcher himself . The research instrument used in the ice massage variable is the implementation guidelines for providing ice massage therapy (SOP) **. Labor** pain variable instrument The observation sheet uses a VAS pain measuring tool that has a scale of 0-10, in the pain scale categories used are as follows: 0 = No Pain = No complaints of pain, 1-3 = Mild Pain = Pain is felt but can still be tolerated, can still do activities, can still concentrate, 4-6 = Moderate Pain = Pain is felt and the pain spreads, some activities are disturbed, it is difficult or hard to concentrate, sometimes whining in pain, neutral face. Can reach the painful area, 7-9 = Severe Pain = Feels painful, pain is persistent, no appetite, nausea, body feels weak, unable to do activities, unable to concentrate, crying, face frowning or grimacing, legs and hands are tense or cannot be moved, 10 = Very Severe Pain = Feels very painful, pain spreads, does not want to eat, nausea, vomiting, headache, body has no energy, cannot stand or get out of bed, cannot do activities, hands are clenched, teeth are clenched, screaming, sometimes can even faint. Univariate analysis is used to determine the frequency distribution or average scale of pain in the first stage of labor. Bivariate analysis is carried out to see the difference between 2 variables, in this study the analysis is carried out by means of: *In- dependent t-test* . The *In- dependent t - test* is used as a comparative test or difference test to determine whether there is a difference in the mean or average scale of pain in the first stage of labor between the two groups given ice massage treatment and those not given ice massage treatment. The basis for determining the Independent T-Test is based on the significance value (2-tailed) which measures whether there is an average difference in the subjects tested.

RESEARCH RESULTS

Research Site Overview

The research was conducted at Pasir Sakti Community Health Center, East Lampung, located at Jl. Pasir Luhur No.1, Pasir Sakti, Pasir Sakti District, East Lampung Regency, Lampung 34387. The management center of Pasir Sakti Community Health Center, East Lampung is under the leadership of the Head of Pasir Sakti Community Health Center, East Lampung. The Head of the Administration Section (TU) is directly under the Head of the Community Health Center and is responsible for various administrative and maintenance matters of the community health center. The Head of TU oversees several sub-sections of TU and service units. The service units of Pasir Sakti Community Health Center, East Lampung include the General Service Center (BPU), Dental Service Center (BPG), Maternal and Child Health (KIA) and Family Planning (KB), Psychological and Nutrition Consultation. The Community Health Center also serves referrals for BPJS patients to hospitals for further treatment. The services of Pasir Sakti Community Health Center are also good with good health workers, ranging from nurses, doctors, medical equipment and medicines. This Community Health Center can be one of the choices for residents of East Lampung Regency to meet their health-related needs.

Pasir Sakti Health Center, East Lampung is a main health center with natural conditions that mostly consist of lowlands and some consist of swamps. With a longitude of 5˚30' 23.15 and latitude of 105˚ 46.36.52" E and an area of 12,023 Ha consisting of 8 villages, 57 hamlets, 53 RW, 175 RT. The distance from the health center to the nearest village is 2km and the distance to the farthest village is ± 10km, with a travel time of 30 minutes or more due to difficult and damaged dirt and stone roads. The types of services at the Sidorejo health center include Medical Records, Public Service Agency (BPU), Maternal and Child Health (KIA), Psychology Clinic, Emergency Unit (UGD), Dental Clinic, Laboratory, Pharmacy, Nutrition and Sanitation Clinic.

General Characteristics of Respondents

Based on the results of research based on the characteristics of respondents conducted on 16 respondents in the intervention group in the work area of Pasir Sakti Health Center, East Lampung, with the most respondents' age characteristics category being 20-35 years old with a total of 14 (87.4%) respondents, the most respondents' education characteristics being junior high school education with a total of 6 (37.5%) respondents, the most occupational characteristics being mothers who do not work or are housewives with a total of 9 (56.3%) respondents, the overall maternal gestational age characteristics being trimester III with a total of 16 (100.0%) respondents, the parity characteristics of multiparous mothers with a total of

8 (50.0%), the parity characteristics of primiparous mothers with a total of 8 (50.0%) respondents.

Table 1
Characteristics of Respondents in the Intervention Group and Control Group at Pasir Sakti Community Health Center, East Lampung

Characteristics	Amount	Presentation	Amount	Presentation
	Intervention group		Control group	
Respondent's age				
20-35 years	14	87.4%	13	81.2%
>35 years	2	12.6%	3	18.8%
Respondent education				
Senior High School	6	37,5%	8	50,0%
Junior High School	5	31,3%	5	31,3%
Bachelor	5	31,3%	3	18,85
Respondent's occupation				
Doesn't work	9	56,3%	9	56,3%
Work	14	43,7%	16	43,7%
Gestational age				
Third Trimester	16	100%	16	100%
Parity				
Multipara	8	50,0%	8	50,0%
Primipara	8	50,0%	8	50,0%

Based on the results of research based on the characteristics of respondents conducted on 16 respondents in the control group in the Pasir Sakti Health Center Working Area, East Lampung, with the most respondents' age characteristics category being 20-35 years old with a total of 13 (81.2%) respondents, the most respondents' education characteristics being high school education with a total of 8 (50.0%) respondents, the most occupational characteristics being mothers who do not work or are housewives with a total of 9 (56.3%) respondents, the most maternal gestational age characteristics being the overall gestational age being the third trimester with a total of 16 (100.0%) respondents, the parity characteristics of multiparous mothers with a total of 8 (50.0%), the parity characteristics of primiparous mothers with a total of 8 (50.0%) respondents.

Normality Test

Based on the table above, it can be seen that the *Shapiro-Wilk value* for the pain scale value in the ice massage intervention group with the results of the pain scale before 0.080 ≥ 0.05, the pain scale after 0.052 ≥ 0.05. While the results of the pain scale in the control group (monitored) with the results of the pain scale after 0.071> 0.05 and the pain scale after 0.061> 0.05. Thus, it can be concluded that the data of this study is normally distributed, and continued to conduct statistical data testing using the dependent and independent T-test.

Table 2
Results of the Normality Test of Variables Before and After Treatment in the Intervention Group and the Control Group *Test of Normality*

Test score value	*Shapiro wilk* value	Information
Ice massage intervention group		
Pain scale before	0.080	Normal
Pain scale after	0.052	Normal
Control group (monitored)		
Pain scale before	0.071	Normal
Pain scale after	0.061	Normal

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Univariate analysis

Table 3
Average Intensity of First Stage Labor Pain Before and After Ice Massage Technique in the Pasir Sakti Community Health Center Work Area, East Lampung

Ice massage therapy	N	Mean	Elementary School	SE	Min	Max
Pain scale before	16	7.50	0.632	0.158	6	8
Pain scale after		4.69	0.704	0.176	4	6

Based on the results of research conducted on 16 respondents to determine the average intensity of labor pain in the first stage before and after being given ice massage techniques in the Pasir Sakti Health Center Work Area, East Lampung with a mean value of 7.50, a standard deviation of 0.632, a standard error of 0.158 and a minimum value for the pain scale before which is 6 and a maximum value for the pain scale before which is 8. While the results after with a mean value of 4.69, a standard deviation of 0.704, a standard error of 0.176 and a minimum value for the pain scale after which is 4 and a maximum value for the pain scale after which is 6.

Table 4
Average Intensity of First Stage Labor Pain Before and After Monitoring in the Control Group in the Pasir Sakti Community Health Center Work Area, East Lampung

Control group	N	Mean	Elementary School	SE	Min	Max
Pain scale before	16	7.44	0.629	0.157	6	8
Pain scale after		5.56	0.964	0.241	4	7

Based on the results of research conducted on 16 respondents to determine the average intensity of labor pain in the first stage before and after monitoring was given to the control group in the Pasir Sakti Health Center Work Area, East Lampung with a mean value of 7.44, a standard deviation of 0.629, a standard error of 0.157 and a minimum value for the pain scale before which is 6 and a maximum value for the pain scale before which is 8. While after monitoring with a mean value of 5.56, a standard deviation of 0.964, a standard error of 0.241 and a minimum value for the pain scale after which is 4 and a maximum value for the pain scale after which is 7.

Bivariate analysis

Based on the results of research that has been carried out using the dependent T-test or using the paired sample t-test by looking for the effect of ice massage techniques on the intensity of pain in labor in the first stage of labor in the Pasir Sakti Health Center Work Area, East Lampung with the results of the mean value of 2.813 and the results of the *p value of* 0.000 <α (0.05) which means H_0 is rejected and Ha is accepted, which means there is a significant relationship between the two variables, where there is an effect of ice massage techniques on the intensity of pain in labor in the first stage of labor in the Pasir Sakti Health Center Work Area, East Lampung

Table 5
The Effect of Ice Massage Technique on the Intensity of First Stage Labor Pain in the Pasir Sakti Community Health Center Work Area, East Lampung

Variables	N	Mean	CI 95%	T	p-value
Pain scale before intervention group Pain scale after intervention group	16	2,813	2,191-3,434	9,638	0,000

Table 6
in the Effect of Ice Massage Technique (Intervention Group) and Monitoring (Control Group) on the Intensity of First Stage Labor Pain in the Pasir Sakti Community Health Center Work Area, East Lampung, was Known

Variables	N	Mean	Mean Difference	p-value
Pain scale before intervention group	16	7.50	2,813	0.006
Pain scale after intervention group		4.69		
Pain scale before the control group	16	7.44	1,875	0.006
Pain scale after control group		5.56		

Based on the research results, it can be concluded that the *t-test results* obtained a mean value for the intervention group before and after being given ice massage techniques in the Pasir Sakti Health Center Work Area, East Lampung of 2.813 and the *p value of* 0.006 <α (0.05). The mean value for the pain scale before and after being given monitoring in the control group regarding the intensity of labor pain in the first stage was 1.875 and the *p value* was 0.006 <α (0.05) meaning there was a significant difference between the two research variables.

DISCUSSION

Univariate Analysis

Average Intensity of First Stage Labor Pain Before and After Ice Massage Technique in the Pasir Sakti Community Health Center Work Area, East Lampung

The average intensity of labor pain in the first stage before and after being given ice massage techniques in the Pasir Sakti Health Center Working Area, East Lampung, with a mean value of 7.50, a standard deviation of 0.632, a standard error of 0.158 and a minimum value for the pain scale before, namely 6 and a maximum value for the pain scale before, namely 8. While the results after with a mean value of 4.69, a standard deviation of 0.704, a standard error of 0.176 and a minimum value for the pain scale after, namely 4 and a maximum value for the pain scale after, namely 6 .

Childbirth is a series of events that occur when a baby is fully developed in the mother's womb, followed by the expulsion of the placenta and fetal membranes from the mother's body. In obstetrics, there are various types of childbirth, including spontaneous childbirth, artificial childbirth, and induced childbirth. Spontaneous childbirth occurs when the mother's strength passes through the birth canal. Induced childbirth is a birth process assisted by external forces, such as *forceps extraction* or *a cesarean section* . This differs from induced childbirth, where labor does not begin with the usual process, but only begins after the membranes break, Pitocin, or prostaglandin are administered (Fitriana and Nurwiandani, 2021).

Pain during labor is a manifestation of uterine muscle contractions, which then cause the cervix to dilate. This dilation of the cervix leads to labor. Every woman has a unique birth experience, including pain during labor and how to manage it. Pain is a universal but difficult-to-define experience; it is an uncomfortable sensation of distress resulting from sensory nerve stimulation. Pain is subjective (Astuti & Dewi, 2017).

Ice massage is a deep or shallow stroking movement. Ice massage is generally used to help restore lymphatic and blood vessel function in the extremities. Ice massage is also used to examine and evaluate painful areas and soft tissue irregularities, or to stretch specific muscle groups (Suryani, 2023).

Applying ice massage to acupressure points can provide various benefits, including improving energy flow there and reducing stress and discomfort by activating peripheral nerve receptors. This may be because ice massage stimulates thin fiber receptors more effectively than acupressure. Therefore, by applying pressure for longer periods and more frequently, acupressure can be used to enhance its effects on labor pain. Maintaining stimulation of acupuncture points over time can improve the flow of vital energy in the meridians and produce more significant healing results (Nehbandani et al., 2019).

Acupuncture or acupressure is a non-pharmacological method to help women during labor. Between the first and second metacarpal bones, in the middle of the metacarpal bones, and on the radial side of the outer hand, is the Large Intestine 4 (LI4) area. One of the most significant pain-relieving points on the body is the LI4 point. In times of discomfort, this point should be strongly activated (Yildirim et al., 2018). Sanyinjiao is another location that helps reduce discomfort during labor. This is the SP6 acupuncture point, located behind *the posterior tibial plateau* and four knuckles above the inner ankle (Nehbandani et al., 2019).

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Activating the spleen (SP6) and large intestine (L14) points increases the strength of uterine contractions and reduces labor pain (Türkmen et al., 2023).

Hajiamini's (2020) study entitled "Comparing the effects of ice massage and acupressure on reducing labor pain" Subjects were randomly divided into three groups (n = 30) to receive ice massage, acupressure, or placebo. The intervention was applied to the Hegu point and pain intensity was assessed using a visual analog scale (VAS) before the intervention, immediately 30 minutes, and 1 hour after the intervention. Results: Comparing pain intensity immediately, 30 minutes, and 1 hour after the intervention in the three groups showed a significant difference between the groups. At 30 minutes post-intervention ($p < 0.05$). Tukey's test showed this difference was related to ice massage.

The results of the research conducted on the intervention group showed an average score before of 7.50 and an average score after of 4.69, indicating a change in pain scores before and after ice massage therapy. In this study, the results of pain reduction in each respondent varied due to the characteristics of the respondents, such as age, parity, gestational age, and so on.

The results of the research indicate that the highest frequency of maternal age respondents in this study was 20-35 years old. This indicates that most respondents are of healthy reproductive age, and physiologically at that age, mothers are still strong enough to withstand labor pain. However, a person's pain response is very individual and is influenced by various factors such as environment, race, certain actions, and also a person's coping patterns in dealing with pain. Younger mothers tend to express their pain verbally, while older mothers tend to express their pain nonverbally. However, in this study, the research subjects consisted entirely of primiparas. The intensity of pain in older mothers can be explained by the fact that older mothers are usually multiparous, and if so, multiparas usually have less intense contractions than primiparas, and a softer, less sensitive cervix compared to younger mothers.

Labor pain is also influenced by maternal parity. Primiparous mothers, who were experiencing their first birth, may have experienced pain they had never experienced before. Gestational age also influences the decrease in labor, as the fetal head will enter the PAP more quickly, leading to more rapid labor progress, and pain control.

The results of the research that has been conducted show a decrease in pain after giving ice massage every 30 minutes in the decrease in pain intensity can be influenced by several reasons, namely maternal parity where in mothers with primiparous parity the pain felt will usually be more intense and severe pain because the mother has just given birth to her first child. Another factor that causes pain in mothers to worsen is the lack of information about the safe and comfortable delivery process. Another factor that influences the decrease in the scale of maternal pain or the difference in the scale of pain felt by mothers is age where those under 35 years old the impulse of pain felt will be more intense. This study shows that of all mothers giving birth who were given ice massage not all mothers experienced a significant decrease in pain because in labor the pain felt is physiological and all mothers giving birth will experience pain, but in this case the ice massage technique is only able to control the pain felt but does not cure the pain completely.

According to the researcher's assumption that labor pain is a physiological factor that must occur during labor to successfully achieve a positive birth experience, midwives and maternity practitioners must provide support to women during the labor process and build women's *self-efficacy* by providing accurate and constructive birth information, especially in relation to managing labor pain.

Average Intensity of First Stage Labor Pain Before and After Monitoring in the Control Group in the Pasir Sakti Community Health Center Work Area, East Lampung

The average intensity of labor pain in the first stage before and after monitoring was given in the control group in the Pasir Sakti Health Center Working Area, East Lampung with a mean value of 7.44, a standard deviation of 0.629, a standard error of 0.157 and a minimum value for the pain scale before which was 6 and a maximum value for the pain scale before which was 8. While after monitoring with a mean value of 5.56, a standard deviation of 0.964, a standard error of 0.241 and a minimum value for the pain scale after which was 4 and a maximum value for the pain scale after which was 7.

Childbirth is a series of events involving the expulsion of a full-term baby, followed by the expulsion of the placenta and fetal membranes from the mother's body through the birth canal or through other means, occurring with or without assistance (the mother's own strength). (Kurnianingrum, 2016 in Wahyuni, 2023).

Labor pain is a subjective experience of physical sensations associated with uterine

contractions, cervical dilation and effacement, and fetal descent during labor. Physiological responses to pain include increased blood pressure, pulse rate, respiration, sweating, pupil diameter, and muscle tension (Sari et al., 2018). Labor pain is characterized by uterine contractions. Contractions occur due to irregular changes in the hormones estrogen and progesterone. The strength of these uterine muscle contractions is what powers labor, and the strength of labor is also dependent on the mother's pushing power (Sari et al., 2018).

Suryani's (2025) research entitled "Differences in the technique of acupressure ice massage LI4 with counter pressure massage on the progress of labor in the first active phase." Method: The study used a quasi-experimental research design with a post-test-only control group design. Sampling was carried out using purposive sampling. The number of subjects was 36 respondents, 18 respondents in the control group were given counter pressure massage and 18 respondents in the intervention group were given acupressure ice massage LI4. The research measurement tool was a partograph observation sheet. Data analysis used an Independent sample t-test. Results: The duration of labor progress in the first active phase obtained a value of 0.199 > 0.05, this indicates that H0 is accepted, meaning there is no difference in the average duration of labor between the control group and the intervention group (p > 0.05).

The results of the research that has been conducted where the average pain scale before being given a monitor was 7.44 and after monitoring decreased to 5.56. Based on the results of the study where the control group also experienced a decrease in pain but the decrease in pain that occurred was not significant or the decrease was not much, the thing that caused the control group to also experience a decrease in pain was due to the loving care of the mother by applying deep breathing relaxation therapy so that the mother could control her labor pain.

Based on the results of this study, most mothers in the active phase of the first stage of labor experienced a less significant reduction in pain. Two respondents experienced an increase in labor pain levels despite being given deep breathing techniques. Controlled, slow breathing during contractions is a relaxation technique that does not reduce pain, but can help maintain normal blood pressure, reduce muscle tension, and increase blood flow and oxygen delivery. Deep breathing relaxation prevents hyperventilation and allows for more effective oxygen and carbon dioxide exchange.

According to researchers, labor pain is physiological and occurs in women giving birth. However, if labor pain is not managed properly, it can cause other problems, such as maternal fatigue during normal delivery. The results of the study indicate a difference in pain scales between women giving birth and the control group. This may be due to differences in the characteristics of the women giving birth. Pain experienced during labor is divided into two types, according to its source: visceral pain and somatic pain. In the first stage of labor, the latent phase is characterized by more thinning of the cervix, while cervical dilation and descent of the fetal lower extremity occur during the active and transition phases. The mother will feel pain originating from the lower abdomen and spreading to the lumbar region of the back and down to the thighs. The mother usually experiences pain only during contractions and is pain-free in the intervals between contractions.

Bivariate analysis

The Effect of Ice Massage Technique on the Intensity of First Stage Labor Pain in the Pasir Sakti Community Health Center Work Area, East Lampung

Based on the results of research that has been conducted using the dependent T-test or using paired sample t-test by looking for the effect of ice massage techniques on the intensity of pain in labor during the first stage of labor in the Pasir Sakti Health Center Work Area, East Lampung with a mean value of 2.813 and a *p value of* 0.000 <α (0.05) which means H0 $_{is}$ rejected and Ha is accepted, which means there is a significant relationship between the two variables, where there is an effect of ice massage techniques on the intensity of pain in labor during the first stage of labor in the Pasir Sakti Health Center Work Area, East Lampung.

The pain experienced by women in labor is caused by uterine contractions, cervical dilation; and at the end of the first stage and in the second stage by stretching of the vagina and pelvic floor to accommodate the presenting part. Discomfort (pain) during the first stage of labor is caused by cervical dilation and thinning and uterine ischemia. This is due to decreased blood flow so that local oxygen is deficit due to contraction of the myometrial arteries, this pain is called visceral pain. Meanwhile, at the end of the first stage and in the second stage, pain is felt in the perineal area which occurs due to stretching of the perineum, pulling of the peritoneum and uterocervical area during contractions, pressure on the urinary bladder, intestines and sensitive

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pelvic structures by the lowest part of the fetus, this pain is called somatic pain.

Almost all women experience and feel pain during labor, but each woman's response to labor pain varies. Pain is a unique experience for each individual. Pain in the first stage of labor is the feeling of pain and discomfort experienced by the mother from the onset of labor until the cervix is 10 cm dilated. This pain is caused by cervical dilation, uterine muscle hypoxia, uterine corpus ischemia, stretching of the lower uterine segment, and compression of the cervical nerves (*cervical ganglion*). Subjective pain is influenced by parity, fetal size and position, medical procedures, anxiety, fatigue, culture and coping mechanisms, and the environment (Reeder and Martin, 2017 in Siregar, 2023).

Pain during labor is fundamentally different from the pain experienced by individuals in general. According to Guyton and Hall (1997), almost all body tissues contain pain nerve endings. These nerve endings are free nerve endings, and their receptors are *nociceptors. These nociceptors* are activated when stimulated by chemical, mechanical, and thermal stimuli. Chemicals that stimulate pain include *bradykinin, serotonin, histamine, potassium ions, and acetic acid . Proteolytic enzymes* and substance P increase the sensitivity of pain nerve endings. All of these chemicals originate within the cells.

Hulya's (2020) research entitled "The Effect of Ice Massage Given to the SP6 Point on Labor Pain, Labor Comfort, Duration of Labor, and Anxiety" A single-masked randomized controlled trial was conducted on 100 nulliparous women, including 50 in the intervention group and 50 in the control group. Rotational ice massage was applied to the SP6 point on both legs of pregnant women in the intervention group at the dilation of 4 to 5 cm, 6 to 7 cm, and 8 to 9 cm for 3 contractions. Routine oxytocin was given to all pregnant women to improve labor progress. Standard obstetric care was provided to the control group. Data were collected using the Personal Information Form, *Visual Analog Scale (VAS), partograph form, Labor Comfort Questionnaire (CCQ), and State-Trait Anxiety Inventory State* subscale . The VAS pain scores of pregnant women in the intervention group were significantly lower compared to the control group after the intervention at dilation of 4 to 5 cm, 6 to 7 cm, and 8 to 9 cm (P = .001, P = .003, P <.05, respectively).

The research that has been conducted shows that the decrease in the scale of labor pain in all respondents varies where the ice massage technique for all mothers was given 4 interventions with the results of the pain scale being able to be controlled in the mother, but there are still some mothers experiencing severe pain because the mother has no previous pain experience and suggestions for the pain felt. From the results of the research conducted there are 10 mothers who still experience severe pain with a pain scale of 6-7 but the mother is still conscious and does not experience loss of consciousness, and the rest of the mothers experience a moderate pain scale where the pain scale is from 4 to 5 where the pain felt can be controlled well.

According to researchers, previous birth experiences can also influence a mother's response to pain. For mothers who have had painful and difficult previous deliveries, feelings of anxiety and fear from those experiences will influence their sensitivity to pain. Everyone learns from past painful experiences. Past pain experiences do not guarantee an easier time coping with future pain. Labor pain experienced by women is physiological, so in this case, the pain cannot be eliminated; healthcare providers can only manage the pain.

in the Effect of Ice Massage Technique (Intervention Group) and Monitoring (Control Group) on the Intensity of First Stage Labor Pain in the Pasir Sakti Community Health Center Work Area, East Lampung, was Known

Based on the research results, it can be concluded that the *t-test results* obtained a mean value for the intervention group before and after being given ice massage techniques in the Pasir Sakti Health Center Work Area, East Lampung of 2.813 and the *p value of* 0.006 <α (0.05). The mean value for the pain scale before and after being given monitoring in the control group regarding the intensity of labor pain in the first stage was 1.875 and the *p value* was 0.006 <α (0.05), meaning there was a significant difference between the two research variables .

Pain impulses in the first stage (Stage I) of labor are transmitted through spinal nerve segments T11-12 and the lower thoracic accessory nerves and the upper lumbar sympathetic nerves. These nerves originate in the uterine body and cervix. Discomfort resulting from cervical changes and uterine ischemia is called visceral pain. This pain originates in the lower abdomen and radiates to the lumbar region of the back and down to the femur. Pain impulses originating from the cervix and uterine body are transmitted by afferent nerve fibers through the uterine plexus, pelvic plexus, inferior hypogastric plexus, middle plexus, posterior plexus,

and lumbar plexus, which then enter the spinal cord via L1, T12, T11, and T10. Typically, mothers experience this pain only during contractions and are pain-free in the intervals between contractions. Ice massage is a massage technique performed to help speed the pain relief process by using hand touch with ice blocks to create a relaxing effect. Ice massage is a gentle rubbing manipulation with relatively light to strong pressure, this rubbing uses ice with a perfect touch and the direction of the rubbing is always towards the heart or in the same direction as the flow of blood vessels, so it has an effect on blood circulation or helps the flow of blood vessels back to the heart because of the pressure and pressure of the rubbing.

Labor pain is characterized by uterine contractions, contractions actually occur in the 30th week of pregnancy called *Braxton Hicks contractions* due to changes in *the hormones estrogen* and *progesterone* but are irregular, painless and the contraction strength is 5 mmHg, and the strength of these *Braxton Hicks contractions* will become the strength of the contractions in labor and are regular. Sometimes there is a discharge of amniotic fluid which usually breaks before full dilation, but can also come out before the labor process. With the rupture of the amniotic sac, it is hoped that labor can take place within 24 hours (Utami, 2019).

A non-pharmacological method that can be used to support women in labor is acupressure massage, where acupressure points are stimulated with the hands, fingers, thumbs, or small beads (Mujahidah et al., 2020). Acupressure can produce effects through several different mechanisms. One hypothesis suggests that acupressure points have electrical properties that, when stimulated, can alter the levels of chemical neurotransmitters in the body. Another hypothesis suggests that activating specific points along the meridian system, which are transmitted through large nerve fibers to the reticular formation, thalamus, and limbic system, will release endorphins in the body (Gönenç & Terzio ğ lu, 2020). According to traditional Chinese medicine, stimulating the LI4 & SP6 points will reduce labor pain and strengthen uterine contractions, thereby shortening the duration of labor (Hibatulloh et al., 2022).

Pressure on the SP6 or Spleen 6 Point is useful in stimulating the parasympathetic and cerebrospinal systems in the pelvis on the left and right of *the sacrum* , which originate from the sacral nerves 2, 3, and 4 then enter *the Frankenhauser plexus* , while the sympathetic system enters the pelvis as *the hypogastric plexus* through the aortic bifurcation and promontory and ends at *the Frankenhauser plexus. The Frankenhauser plexus* consists of a large ganglion located at the base of the sacro-uterine ligament, these nerve fibers that invade the myometrium and endometrium, causing contractions. The results of previous studies also showed that acupressure at the SP6 point is effective in reducing labor pain, shortening labor time, reducing maternal anxiety and the consumption of analgesics, especially pethidine. SP6 also activates the release of gastric juices, so that digestion can return to normal and helps reduce nausea and vomiting during the first stage of labor (Mukhoirotin & Mustafida, 2020).

Ice massage therapy is a non-pharmacological method that has no side effects for the mother or fetus. This therapy can reduce pain, relieve stress and anxiety, provide relaxation, comfort, and shorten the duration of labor (Mukhoirotin & Fatmawati, 2017).

Previous research has shown that acupressure at the BL32 or Bladder 32 point effectively reduces labor pain intensity and improves labor outcomes, with a higher average vaginal delivery rate than the control group. Other research has shown that the use of Pain Digital Acupressure (PDA) can reduce labor pain intensity in the first, second, and third 30 minutes during the latent stage of labor. The most effective period for PDA use is the first 30 minutes, with an average reduction in pain intensity of 1.79, a significant difference compared to the control group. PDA use can also reduce the duration of second-stage labor, with labor duration in the intervention group being 14.36 minutes and the control group 22.50 minutes (Mukhoirotin & Mustafida, 2020).

Hajiamini's (2020) study entitled "Comparing the effects of ice massage and acupressure on reducing labor pain" Subjects were randomly divided into three groups (n = 30) to receive ice massage, acupressure, or placebo. The intervention was applied to the Hegu point and pain intensity was assessed using a visual analog scale (VAS) before the intervention, immediately 30 minutes, and 1 hour after the intervention. Results: Comparing pain intensity immediately, 30 minutes, and 1 hour after the intervention in the three groups showed a significant difference between the groups. At 30 minutes post-intervention ($p < 0.05$). Tukey's test showed this difference was related to ice massage.

According to the researchers' assumptions, providing intervention in the form of ice massage on acupressure points can help mothers in controlling labor pain that occurs so that mothers can start

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labor comfortably. Ice massage can be one of the effective non-pharmacological complementary therapies to reduce pain in the first stage of labor. This cold therapy works by causing vasoconstriction in the painful area, thereby helping to reduce pain intensity and providing a calming effect. Ice massage can be applied to several points, such as the SP6 point (on the ankle) and the LI4 point (Hegu on the hand), as well as the lower back, legs, and shoulders.

According to researchers, pain scale reduction and pain levels during labor can vary among respondents, due to individual characteristics. Labor pain triggers physical and psychological reactions in mothers undergoing labor. The pain experienced during labor varies from woman to woman. Many predisposing factors can reduce or increase the degree of labor pain a woman experiences, including prior pain experiences, knowledge about childbirth, cultural background, and the individual's own perception of being able or unable to cope with pain.

Other factors that can influence the intensity of labor pain are age and parity. Younger mothers have a more intense pain sensory perception than older mothers. Young age tends to be associated with unstable psychological conditions, which trigger anxiety, resulting in more intense pain. Age is also used as a factor in determining pain tolerance. In primiparous mothers, uterine contractions are stronger than in multiparous mothers, and multiparous mothers with previous labor experience are more likely to adapt to pain than mothers who have never had such experience (primiparous mothers). The pain experienced by mothers during labor is highly subjective for each mother. Labor pain is personal; each person perceives pain differently from the same stimulus, depending on their pain threshold. Most mothers perceive and imagine labor pain as a frightening experience.

The age of respondents in this study was dominated by young people or those not in the risk zone, 20-35 years old is a healthy age for pregnancy and childbirth. Age is very important for maternal health, mothers are said to be at high risk if the pregnant mother is under 20 years old and over 35 years old. Maternal age <20 years and >30 years old are risk factors for childbirth complications. Women who become pregnant at a high-risk age can cause complications for both the mother and the baby. Age is related to the mother's unpreparedness in reproduction, women under 20 years old are still in the growth and development stage, so their reproductive organs are not yet mature . In this age range, the mother's physical condition is in prime condition and is generally ready for the delivery process.

Meanwhile, respondents with higher education will absorb information more easily. Therefore, this is a good situation because respondents with secondary education have a sufficient foundation of knowledge compared to those with lower education, allowing pain to be controlled in those with higher education.

Researchers assume that occupation has no relationship to labor pain levels. Labor pain is individual and is a subjective experience experienced by the mother regarding the physical sensations associated with uterine contractions, cervical dilation and effacement, and fetal descent during labor.

For mothers with parity, first-time mothers (primiparas) have never experienced pain, so they are more sensitive to the pain they experience and have never experienced pain before. Although in this study there was no relationship between parity and labor pain, the intensity of labor pain is influenced by previous labor history. A mother who has experienced labor will understand how pain will be felt during labor. Meanwhile, mothers who have never given birth do not know how pain will be felt for the first time in the labor process, especially for primiparas. The cervix in primiparas requires greater force to stretch, resulting in greater contraction intensity during the first stage of labor. Research shows that most multiparas experience moderate levels of pain, while primiparas tend to experience severe levels of pain. However, in this study, respondents who experienced severe pain were more multiparas, this is because the number of multiparas in this study was greater than primiparas.

CONCLUSION

1. The average pain intensity before and after the intervention group was 0.632, while the average pain intensity after was 4.69.
2. The average pain intensity before and after monitoring in the control group was 0.629. The average pain intensity after monitoring was 5.56.
3. The results of *the p value* are 0.000 < α (0.05) which means that H_0 is rejected and Ha is accepted, which means that there is an influence of the ice massage technique on the intensity of pain in the first stage of labor in the Pasir Sakti Community Health Center Work Area, East Lampung.
4. *t-test* results obtained a mean value for the intervention group before and after being given

ice massage techniques in the Pasir Sakti Health Center Working Area, East Lampung of 2.813 and the *p value of* 0.005 <α (0.05). The mean value for the pain scale before and after being given monitoring in the control group regarding the intensity of labor pain in the first stage was 1.875 and the *p value* was 0.006 <α (0.05) meaning there was a significant difference between the two research variables.

SUGGESTION

Pregnant women are encouraged to begin learning about labor pain management during the third trimester using non-pharmacological management techniques. This will help them better understand pain management using ice massage techniques during their future deliveries. These techniques can be learned through prenatal classes, video guides, leaflets, and guidance from health workers at community health centers. This is expected to help reduce pain during labor.

REFERENCES

Abdul, S., Handayani, A., & et al. (2017, April). Reducing Labor Pain with Warm Compresses. Jurnal Mkml, 13, 2.

Aristiya Novita, I. (2020). The Relationship Between Mothers Who Actively Do Pregnancy Exercises and the Length of the Second Stage of Labor at Mutiara Bunda Hospital, Malang. *Brawijaya Knowledge Garden* , 1-43.

Astuti, D. Puji, & Dewi, Adinda Putri Sari. (2017). Labor Pain Relief with Acupressure Massage. Midwifery, 347–352.

Anggraeni, L. et al. (2020) Complementary Midwifery Services. Bandung: CV. Media SAINS Indonesia

Amelia, P. and Cholifah (2019) Textbook of Basic Concepts of Childbirth. Sidoarjo: Muhammadiyah University of Sidoarjo.

Arikunto, S. (2019). Research Procedures. Jakarta: Rineka Cipta.

Lampung Health Office. (2020). Lampung Province. Lampung Data on the Number of Pregnancies in 2020

Lampung Health Office. (2023). Lampung Province. Lampung Data on the Number of Pregnancies in 2020

Elisabeth Siwi Walyani. 2017. Midwifery Care in Pregnancy. Yogyakarta: Pustaka Baru.

Fitriana Y, Nurwiandani W. 2020. Comprehensive Childbirth Care: Concept of Childbirth in Midwifery Care. I. Umaiyah Luatul N, editor. Yogyakarta: Pustaka Baru Press

Fitriahadi, E. and Utami, I. (2019) Textbook of Childbirth Care and Labor Pain Management. Yogyakarta: 'Aisyiyah University Yogyakarta.

Hajiamini, Z., Masoud, S.N., Ebadi, A., Mahboubh, A., & Matin, A.A. (2012). Comparing the effects of ice massage and acupressure on labor pain reduction. *Complementary Therapies in Clinical Practice* , *18* (3), 169-172.

Hidayat, SS et al. (2015). Guidelines for Writing Undergraduate Theses, Revised Edition – July 2015. Bandung: Faculty of Psychology, Maranatha Christian University

Hulya (2020) with the title "The Effect of Ice Massage Given to the SP6 Point on Labor Pain, Labor Comfort, Duration of Labor, and Anxiety"

Ika Fitria, (2018). Complementary Therapy in Midwifery. 2018

Ministry of Health of the Republic of Indonesia. Indonesian Health Profile 2021 [Internet]. 2022. Ministry of Health of the Republic of Indonesia. Available from: Pusdatin.Kemenkes.Go.Id

Ministry of Health of the Republic of Indonesia. 2020. Indonesian Health Profile 2020. Jakarta: Ministry of Health of the Republic of Indonesia

Mukhoirotin, M., & Fatmawati, DA (2017). The Effect of Acupressure on the Sanyinjiau Point on Reducing Pain Intensity in the First Stage of Labor, Active Phase. *Nursing Journal* , *6* (2).

Notoatmodjo, S. (2016). Health Research Methodology. Jakarta: Rineka Cipta

Nurliyani, S.St., M.Keb & Fijri Rachmawati, S.St., M.Keb. (2024) Non-Pharmacological Management of Childbirth. Published by CV TAHTA MEDIA GROUP

Prawirohardjo , (2016). Maternal and Neonatal *Health* Services . Jakarta : Pt Yayasan Bina Pustaka Prawirohardjo

Rejeki, S. (2020). Textbook of Pain Management in the Childbirth Process (Non-Pharmaceutical).

Satria, M. (2018). The Effect Before and After Counterpressure Back Massage on Reducing Pain in Active Phase First Stage of Labor at Elviana Midwife Clinic in 2017. *Menara Ilmu: Journal of Scientific Research and Studies* , *12* (5).

Sari, DP, Rufaida, Z., & Lestari, SWP (2018). Labor pain. *E-Book Publisher Stikes Majapahit* , 1-30.

Sari, NP, & Farhati, F. (2022). Evidence Based Case Report (EBCR): The Effect of Cold

Compresses on Reducing Pain in the Active Phase of First Stage of Labor. *Siliwangi Health Journal* , *3* (2), 268-276.

Septiani, M., & Agustia, L. (2022). The Effect of Deep Breathing Relaxation Techniques on Reducing Pain in the First Stage of Labor in the Active Phase in PMB Desita, S. Sit, Pulo Ara Village, Kota Juang District, Bireuen Regency. *Journal of Healthcare Technology and Medicine* , *7* (2), 975-984.

Sri Rejeki (2020). Non-Pharmacological Pain Management in the Childbirth Process. Unimus Press. Semarang

Suryani, H., Wahyuni, R., & Cybronica, LM (2025). Differences between LI4 acupressure ice massage techniques and counter pressure massage on the progress of active phase I labor. *Indonesian Midwifery Journal* , *16* (1), 53-61.

Sugiyono. (2022). Quantitative, Qualitative, and R&D Research Methods. Bandung: Alfabeta

Sutanto (2017). Basic Human Needs, Theory and Application in Professional Nursing Practice. Pustaka Baru Press. Yogyakarta

Suwondo, B.S., Meliala, L., & Sudadi. (2017). Pain Textbook (B.S. Suwondo, L. Meliala, & Sudadi (Eds.)). Indonesian Pain Society

Wahyuni (2023) Textbook of Midwifery Care for Childbirth and Newborns" Published by: Cv. Science Techno Direct Perum Korpri Pangkalpinang

WHO. World health statistics 2022 (Monitoring health of the SDGs) [Internet]. 2022. 1–131 p. Available from: http://apps.who.int/bookorders . (accessed February 12, 2025)

Yulizawati, 2024 "article "The Impact of Ice Massage on Points SP6 and LI4 on Labor Pain and Anxiety: Literature Review