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Comparison Of The Effectiveness Of Massage And Warm Compress On Labor Pain In The Active Phase of The First Stage At The Atikah Midwife Clinic, Sipolu – Polu

Sofi Damayanti
Akademi Kebidanan Madina Husada Panyabungan, Penyabungan, Indonesia

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ABSTRACT

The Effleurage technique is a massage method that is quite effective in helping reduce back pain in the active phase of labor. Warm compresses reduce muscle spasms and pain intensity in the first stage of labor. The purpose of this study was to compare the effectiveness of massage and warm compresses on labor pain in the active phase of labor at the Atikah Midwife Clinic in 2024. The design of this study was a quasi-experimental time series group comparison design. The population in this study were all 45 mothers giving birth at the Atikah Midwife Clinic in September 2024. The sample was selected using an accidental sampling technique with 30 research subjects divided into 2 intervention groups. The data collection technique was by conducting experiments on mothers in the active phase of labor in the first stage. Data analysis used was the Independent t-test using the SPSS For MS Windows Version 17.0 program. The results of the study found that the average pain intensity value of respondents given massage = 8.20 and the average pain intensity value of respondents given warm compresses = 7.47. The results of the Independent t-test show that the P/Sig (2-tailed) value is 0.000<0.05, which means that the value (p<0.05), then Ho is rejected, while the calculation results show that the t-test is 4.291 while the t-table value df=26.736 and the significance level is 0.05, therefore the calculated t^2 value>t^2 table or 4.291>1.706 then Ho is rejected. It is concluded that there is a comparison of the effectiveness of massage and warm compresses in reducing pain intensity in the active phase of labor stage 1. It is recommended that further research be conducted with homogeneous respondents.

Corresponding Author:

Sofi Damayanti
Akademi Kebidanan Madina Husada Panyabungan
E-mail

INTRODUCTION

The National Strategic Plan for Making Pregnancy Safer in Indonesia states that the 2020-2024 National Medium-Term Development Plan (RPJMN) has specific components related

to health development, such as improving health services, reducing stunting, and strengthening the national health system. The vision of Making Pregnancy Safer is for all women in Indonesia to experience safe pregnancy and childbirth and for babies to be born healthy. The mission of Making Pregnancy Safer is to reduce maternal and newborn morbidity and mortality in Indonesia (Ministry of Health, 2020).

*World Health Organization (*WHO) emphasizes skilled maternal and neonatal health services to significantly reduce the Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) by 2015 through early detection, antenatal care, and good labor and postpartum management. In primitive societies, labor is longer and more painful, while in developed societies, 7-14% of labors are painless and the majority (90%) of labors are accompanied by pain (Prawirohardjo, 2005).

Childbirth is a process of opening and thinning the cervix and uterine contractions that cause pain during the labor process. Research conducted by Niven and Gijsbers (1984) aimed to see the comparison of the intensity of labor pain with other pains, the results showed that labor pain exceeded other pain syndromes such as, 88% of 73 sufferers of leg pain received pharmacological intervention, 76% of the sample (n = 200) experienced back pain during pregnancy with a peak incidence at 24-28 weeks of gestation which interfered with the mother's normal activities, so pain must be given intervention in the form of pain control methods for the comfort and relief of the sufferer (Mander, 2017).

Labor pain, if not managed properly, can lead to increased anxiety. Primigravida mothers lack knowledge and experience during labor, leading to increased adrenaline production and vasoconstriction, which reduces maternal blood flow to the fetus. The fetus will experience hypoxia, while the mother will experience prolonged labor, which can increase systolic and diastolic blood pressure (Maryunani, 2018).

Pain is an unpleasant feeling. It is highly subjective, as the degree of pain varies from person to person, and only the individual can describe or evaluate the pain they are experiencing. The most common body parts affected by pain are the neck, arms, legs, and lower back. In addition to medication and therapy, first aid can include massage and warm compresses to help reduce labor pain (Bandiyah, 2019).

Labor pain management can be implemented both non-pharmacologically and pharmacologically. Non-pharmacological approaches involve the use of medications, such as relaxation, massage, acupressure, acupuncture, hot or cold compresses, and aromatherapy. Pharmacological approaches involve the use of medications. Non-pharmacological pain management is safer, simpler, and less harmful, and emphasizes compassionate maternal care, compared to pharmacological methods, which can potentially have adverse effects (Mander, 2018).

During labor, massage helps mothers feel more relaxed and comfortable during labor. Mothers who receive massage during labor, whether by healthcare workers, the patient's family, or the patient herself, experience greater pain relief because massage stimulates the body to release endorphins. Many parts of a woman's body can be massaged, such as the head, neck, back, and legs. When massaging, the masseuse must pay attention to the mother's response to ensure the pressure is appropriate (Meiliasari, 2014).

The effleurage technique is a massage method that is quite effective in helping reduce back pain during labor and is relatively safe because it has no side effects. The principle of this method is to reduce maternal tension, allowing her to feel comfortable and relaxed during labor. This method can also increase stamina to cope with pain and does not cause respiratory depression in the newborn (Maryunani, 2010).

Warm compresses increase local temperature, circulation, and tissue metabolism. Warm compresses reduce muscle spasms and the intensity of labor pain. They also reduce, counteract, and prevent the mother's response to first-stage labor pain. Applying a local heat compress or a warm blanket will calm the laboring mother, eliminate the sensation of pain, stimulate intestinal peristalsis, release inflammatory fluids, and provide calm and comfort to the laboring mother (Simkin, 2015).

Ratih's (2015) research aimed to determine the effect of the massage method, namely effleurage massage, on reducing the intensity of labor pain using a quasi-experimental design. It provided significant results between pain intensity before and after intervention in the first stage of labor, so it was concluded that this massage was effective in reducing the intensity of labor pain.

Sari's (2015) study aimed to measure the intensity of pain reduction using warm compresses on women in the active phase of the first stage of labor. The design used was a quasi-experimental one-group pretest and posttest. With a sample size of two people, the data analysis used a dependent t-test. The results concluded that warm compresses have an effect on reducing labor pain.

The initial survey, conducted on November 10, 2024, involved 45 mothers giving birth. Interviews with several midwives at Atikah Sipolu-Polu, Panyabungan District, Mandailing Natal Regency, revealed thatTo reduce the pain, the midwife tells the mother to find a comfortable position and take a breath during the contraction, and the mother regulates her breathing and strengthens her heart in the hope that the pain will disappear when she sees her baby later, and there are several mothers who have given birth who say that the feeling of fear of pain is there, but when the pain comes the midwife tells the mother to divert attention from the pain by walking around.

Based on the above phenomenon, the author is interested in writing a study on "Comparison of the Effectiveness of Massage and Warm Compresses on Labor Pain in the First Stage of the Active Phase at Midwife Atikah Sipolu - polu, Panyabungan District, Mandailing Natal Regency"

METHODS

This study uses a quasi-experimental research design with a time series group comparison design, namely treating the objects studied and observing pain intensity to identify the comparison of massage methods and warm compresses on labor pain in mothers giving birth in the active phase of the first stage of labor consisting of two intervention groups (Muhith, 2011). The population is the entire research subject (Arikunto, 2010). The population in this study is all mothers in the active phase of the first stage of labor. From the preliminary survey, data on mothers who gave birth at Midwife Atikah Sipolu - polu, Panyabungan District, Mandailing Regency, amounted to 45 people. The sample is a part of the population to be

studied or a portion of the characteristics possessed by the population (Hidayat, 2017). The sample in this study was all mothers giving birth at Midwife Atikah Sipolu - polu, Panyabungan District, Mandailing Regency, amounting to 30 people.

RESULTS AND DISCUSSION

Research result

Based on a study conducted from September 29 to October 21, 2024, on 30 respondents regarding "Comparison of the effectiveness of massage and warm compresses on labor pain during the active phase of labor at the Atikah Midwife Clinic," the 30 respondents were divided into two intervention groups: 15 massage groups and 15 warm compress groups. The study involved direct observation of laboring mothers entering the active phase.

1. Univariate Analysis

Univariate analysis was conducted to obtain an overview of the characteristics of the respondents, including age, parity, and distribution of pain intensity after giving massage and warm compresses. The univariate results obtained in this study are as follows:
Respondent Characteristics

Table 1 Distribution of respondents by age group and parity at Atikah Midwife Clinic, September 29-October 21, 2024

No	Characteristic Variables	Intervention Group		Total	Percentage (%)
		Massage	Warm Compress		
	Age				
	1. Young Adults	15	15	30	100
	2. Middle Adult				
	3. Late Adulthood				
	Total	15	15	30	100
	Parity				
	1. Primipara	13	13	26	86.7
	2. Multipara	2	2	4	13.3
	3. Grandemultipara				
	Total	15	15	30	100

Source: Questionnaire Sheet

Based on table 1 above, it can be seen that of the 30 respondents for age characteristics, there is an even age composition, namely the early adult age group, each intervention group is 15 people (100%).

Based on table 1 above, it can be seen that of the 30 respondents for the parity group, there is an uneven parity composition, namely the primipara group for each intervention group is 13 respondents (86.6%) and the multipara group for each intervention group is 2 respondents (13.3%).

Pain Intensity Scale After Treatment

Table 2. Distribution of labor pain intensity after massage and warm compresses at the Atikah Midwife Clinic, September 29-October 21, 2024

	Intervention Group	N	Mean	Std. Deviation	Std Error Mean
Pain intensity scale after treatment	Massage	15	8.20	0.414	0.107
	Warm compress	15	7.47	0.516	0.133

Source: Observation Sheet

Based on table 2 above, it can be seen that the average pain intensity value of respondents after being given massage was 8.20 with a standard deviation of 0.414, and the average pain intensity value of respondents after being given warm compresses was 7.47 with a standard deviation of 0.516. Thus, the average pain intensity of respondents who received warm compresses was lower than those who received massage.

2. Bivariate Analysis

Bivariate analysis is an analysis used to compare the effectiveness of massage and warm compresses on labor pain in the first active phase.

Table . 3 Comparison of labor pain intensity after massage and warm compresses at the Atikah Midwife Clinic, September 29-October 21, 2024

Independent Samples T Test

		Levene's test for quality of variance		T test for equality of means		
Comparison of the effectiveness of massage and warm compresses on labor pain in the first active phase		F	Sig	t	df	Sig (2-tailed)
	Equal variances assumed	7,537	0.010	4,291	28	0,000
	Equal variances not assumed			4,291	26,736	0,000

Source: Observation Sheet

Based on table 4.4 above, it is known that the p/(Sig) value is 0.010, because the p/(Sig) value is <0.05, then the assumption of using the test is equal variances not assumed, thus the P/Sig value (2-tailed) is known.is 0.000<0.05 which means that the value (p<0.05), then Ho is rejected, while the calculation results obtained t test = 4.291 while the t table value df= 26.736 and the significance level is 0.05, therefore the calculated t^2 value> t^2 table or 4.291>1.706, then Ho is rejected. DIt can be concluded that there is a comparison of the effectiveness of massage and warm compresses in reducing the intensity of pain in the first active phase of labor.

Discussion

Comparison of the Effectiveness of Massage and Warm Compresses on Labor Pain in the First Stage of the Active Phase at the Atikah Sipolu-Polu Midwife Clinic, Panyabungan District, Mandailing City, Regency in 2025.

The results of the research conducted on mothers giving birth at the Atikah Midwife Clinic found that of the 30 respondents for age characteristics there was an even age composition, namely the early adult age group for each intervention group was 15 people (100%), while the 30 respondents for the parity group had an uneven parity composition, namely the primipara group for each intervention group was 15 respondents (86.7%) and the multipara group for each intervention group was 2 respondents (13.3%).

The effect of the average value of pain intensity of respondents after being given massage was 8.20 with a standard deviation of 0.414, and the average value of pain intensity of respondents after being given warm compresses was 7.47 with a standard deviation of 0.516. So, the average pain intensity of respondents who received warm compresses was lower than those who received massage.

From the results of the Independent t-test, it is known that the p/(Sig) value is 0.010, because the p/(Sig) value is <0.05, then the assumption of using the test is equal variances not assumed, thus the P/Sig value (2-tailed) is known.is 0.000<0.05 which means that the value (p<0.05), then Ho is rejected, while the calculation results obtained t test = 4.291 while the t table value df= 26.736 and the significance level is 0.05, therefore the calculated t^2 value> t^2 table or 4.291>1.706, then Ho is rejected. DIt can be concluded that there is a comparison of the effectiveness of massage and warm compresses in reducing the intensity of pain in the first active phase of labor.

According to researchers' assumptions, age is one factor that influences labor pain, because severe pain in young adults can be perceived as mild in older adults, as older adults experience decreased sensory perception of stimuli and an increased pain threshold. Furthermore, parity can also influence labor pain during the active phase of the first stage of labor, as first-time mothers generally experience greater pain sensations, especially for first-time mothers, compared to multiparous and grandemultiparous mothers.

Anxiety will increase the individual's response to pain, unpreparedness to undergo the birth process, support and companionship during labor, fear of the unknown, previous bad experiences of childbirth will also increase anxiety, thus causing an increase in nociceptive stimulation at the cerebral cortex level and an increase in catecholamine secretion which also increases nociceptive stimulation in the pelvis due to decreased blood flow and muscle tension.

Ratih's (2010) research aimed to determine the effect of the massage method, namely effleurage massage, on reducing the intensity of labor pain using a quasi-experimental design. It provided significant results between the intensity of pain before and after intervention in the first stage of labor, so it was concluded that this massage was effective in reducing the intensity of labor pain.

Sari's (2010) study aimed to measure the intensity of pain reduction using warm compresses on women in the active phase of the first stage of labor. The design used was a

quasi-experimental one-group pretest and posttest with a sample size of two people. Data analysis used a dependent t-test. The results of the study concluded that warm compresses have an effect on reducing labor pain.

This is in accordance with Lowe's statement (2007), giving birth is an association and physiological process and acute pain, the experience of pain or giving birth results from physiological and psychological responses and individual interpretation of the stimulus.

Pain is universal and a common complaint among most people. Its presence is a signal, a sign, and a sign of danger in humans and is interpreted as a threat or disruption to the integrity of the organism. Pain can also disrupt personal relationships and affect the meaning of one's life (Potter & Perry, 2005).

According to Simkin, (2007) first stage labor pain is the result of cervical dilation and the lower uterine segment with further distension, stretching, and trauma to the muscle fibers and ligaments. Factors causing labor pain are pressure on the baby's head and stretching of the supporting connective tissue of the uterus and pelvic joints during contractions with the descent of the baby's head, pressure on the urinary tract, bladder, and anus, and stretching of the pelvic floor muscles and vaginal tissue.

Stimulating the skin with effleurage massage techniques generates impulses that are sent through large nerve fibers located on the surface of the skin. These large nerve fibers will close the gates so that the brain does not receive pain messages because they have been blocked by skin stimulation with this technique. As a result, pain perception will change. In addition to relieving pain, this technique can also reduce muscle tension and increase blood circulation in the painful area (Bobak, 2004).

Applying a warm compress can induce both systemic and local responses. This stimulation sends impulses from the periphery to the hypothalamus, which then generates a normal body temperature sensation. Warm compresses also provide warmth to specific areas by using fluids or devices that generate heat. This action not only improves blood circulation but also relieves pain, stimulates intestinal peristalsis, facilitates the excretion of inflammatory fluids, and provides a sense of calm and comfort for the client.(Simkin, 2005).

CONCLUSION

The demographic characteristics of respondents at the Atikah Midwife Clinic are known that the age characteristics have an even age composition, namely the early adult age group and the parity group has an uneven parity composition, namely the primipara and multipara groups. The average decrease in labor pain intensity after receiving warm compresses is lower than the average decrease in labor pain intensity in the massage group. The Independent t-test in the intervention group shows that there is a significant comparison between massage and warm compresses and it is concluded that there is a comparison of massage and warm compresses in reducing the intensity of labor pain in the first active phase.

REFERENCE

Bobak, I.M., Lowdermilk, D.L., & Jensen, M.D. (2005). Maternity nursing (6th ed.). St. Louis: Mosby.

Handayani, D. (2016). The effectiveness of warm compresses and back massage on the intensity of pain in the active phase of the first stage of labor. Journal of Midwifery, 5(1), 45–52.
Ministry of Health of the Republic of Indonesia. (2020). Indonesian Health Profile 2020. Jakarta: Ministry of Health of the Republic of Indonesia.
Manuaba, IBG (2012). Obstetrics, gynecological diseases and family planning for midwife education. Jakarta: EGC.
Maryunani, A. (2013). Pain in labor and its management. Jakarta: Trans Info Media.
Prawirohardjo, S. (2010). Midwifery. Jakarta: Bina Pustaka Sarwono Prawirohardjo Foundation.
Riskesdas. (2018). National Report of Riskesdas 2018. Jakarta: Health Research and Development Agency, Ministry of Health of the Republic of Indonesia.
Saifuddin, AB (2002). National reference book for maternal and neonatal health services. Jakarta: Bina Pustaka Sarwono Prawirohardjo Foundation.
Varney, H. (2007). Varney's midwifery (4th ed.). Boston: Jones and Bartlett Publishers.
World Health Organization (WHO). (2018). WHO recommendations: Intrapartum care for a positive childbirth experience. Geneva: WHO Press.