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The Effect Of Effleurage Massage On Reducing The Intensity Of Labor Pain In The First Stage at The PMB Wanti Clinic In Medan City

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ABSTRACT

Pain during the active phase of first stage labor can cause anxiety, fatigue, and difficulty adapting to the labor process. This condition requires practical, safe, and applicable non-pharmacological pain management by midwives. The purpose of this study was to analyze the reduction in pain intensity in mothers giving birth in the active phase of first stage labor before and after Effleurage Massage. The research method used a pre-experimental with one group pretest-posttest design. The study sample consisted of 15 mothers who gave birth using a purposive sampling technique according to the inclusion criteria. Pain intensity was measured using a Numeric Rating Scale ranging from 0-10, carried out twice, namely before and after respondents received Effleurage Massage for 20 minutes. The collected data were tested using the Wilcoxon Signed Rank Test. The results showed an average pain score before treatment of 5.20 and decreased to 3.27 after treatment. This decrease was statistically significant with a p-value = 0.001. The pain score showed that all respondents experienced a decrease in pain, with an average decrease of 1.93 points.The conclusion of this study is that effleurage massage has an effect on reducing the intensity of labor pain during the active phase of the first stage of labor. It is recommended that women attending PMB Wanti consider effleurage massage as an alternative non-pharmacological therapy to reduce pain and assist with labor. It can also be taught to husbands or family members so that mothers receive optimal support during labor at PMB Wanti.

Keywords: Effleurage Massage, Labor Pain, First Stage Active Phase.

INTRODUCTION

Labor and birth are physiological processes that women naturally experience as part of their reproductive cycle. Normal labor is defined as the expulsion of the products of conception, a fetus and placenta, after reaching full term (37–42 weeks) of gestation, born spontaneously in a cephalic presentation, and occurring within approximately 18 hours without complications for either the mother or the baby. Labor begins with regular, increasingly strong uterine contractions. These contractions cause thinning (effacement)

and opening (dilation) of the cervix, and cause ischemia in the uterine tissue. This condition triggers pain during labor.(Sulistyawati, 2025).

Labor pain is a natural bodily process and is experienced by all women going into labor. Almost all women experience and feel pain during labor, but each woman's response varies.Women's response to labor pain varies.Severe labor pain can cause physiological stress, which can increase heart rate, respiratory rate, and blood pressure. This can inhibit the release of the hormone oxytocin, resulting in inadequate or weakened uterine contractions and impaired dilation.(Aviva et al., 2025)The difference in labor time between women who experienced fear and women who did not experience fear was 1 hour and 32 minutes.

Prolonged or prolonged labor is one of the contributors to maternal mortality rates.(Nur'aini & Widiawati, 2023). Handling and monitoring labor pain, especially during the active first stage, is very important, because the progress of labor during the active first stage is very tiring and difficult, and at this stage the mother already feels severe pain because contractions become longer and more frequent.(Syahida, 2022). This is the determining point whether the mother giving birth can undergo normal delivery or end it with an operation, due to complications caused by very severe pain.(Putri et al., 2022).

Pain reduction efforts can utilize pharmacological and non-pharmacological methods. Pharmacological methods involve administering painkillers (analgesics), which have been proven to inhibit and block pain stimuli. However, they carry the risk of side effects for both the mother and the fetus. Non-pharmacological methods are effective without harmful side effects and can increase satisfaction during labor, as the mother can control her feelings and strength. One non-pharmacological method that can be used to reduce pain during labor is effleurage massage.(Jujuren Sitepu et al., 2024).

Massage It can increase body relaxation and reduce stress. Massage is effective, safe, simple, and has no adverse effects on either the mother or the fetus. The effleurage massage technique can create a distraction and relaxation effect, thus helping the mother become more relaxed, creating a feeling of comfort and well-being, and reducing pain responses. Effleurage massage is a massage technique performed to help speed the recovery process of pain by using hand touch to create a relaxing effect.(Kurniawaty et al., 2023). Effleurage is

a gentle rubbing manipulation with relatively light to strong pressure, this rubbing uses the entire surface of one hand or the surface of both hands, perfect touch and the direction of 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 push of the rubbing fingers with a circular motion pattern on the lower waist.(Nurmaliza et al., 2024).

Furthermore, other studies in various regions have reported similar results, such as a study in Langsa City that found effleurage massage helped reduce the perception of pain during the first stage of labor. The study also showed that combining effleurage with other supportive methods, such as aromatherapy, resulted in significant pain reduction. These results strengthen the evidence that the effleurage method has great potential as part of a non-pharmacological obstetric intervention in Indonesia.(Zanah & Armalini, 2022).

Based on preliminary survey results at the Wanti PMB, effleurage massage techniques have been recognized as a non-pharmacological method for labor pain management. However, this technique has not yet been implemented at the Wanti PMB. To date, the method used to manage labor pain is the blow-on technique. Based on interviews with two mothers giving birth at the Wanti PMB, the blow-on technique was deemed quite effective in helping reduce pain intensity during the first stage of labor. This finding prompted researchers to conduct a study to introduce and examine the effect of effleurage massage on reducing pain intensity during the first stage of labor.

Based on the background that has been described, the researcher is interested in conducting research on "The Effect of Effleurage Massage on Reducing the Intensity of First Stage Labor Pain in PMB Wanti, Medan Deli District, Medan City in 2026" as a contribution to the development of evidence-based midwifery care practices and improving the quality of midwifery services.

METHOD

This study was conducted in 2026 with a sample of mothers giving birth in the active phase of the first stage (starting from 4 dilation) at PMB Wanti, using a sampling technique

in this study using a purposive sampling method. The type of research used is a Pre-Experimental Design with a One-Group Pretest-Posttest Design model. In this design, the effect of the treatment is assessed by comparing the pretest value (before intervention) with the posttest value (after intervention) in the same group of subjects. Data sources are taken from primary and secondary data. The data source of this study is primary data obtained directly from respondents through measuring the intensity of labor pain in the first stage using the Numeric Rating Scale (NRS) before and after being given effleurage massage, secondary data in this study were obtained from the labor register book and documentation of PMB Wanti. The data used includes the number and characteristics of mothers giving birth who meet the research inclusion criteria, such as mothers with pregnant women with a gestational age of ≥37 weeks, active phase of the first stage of labor (starting from 4 dilation), singleton pregnancy, willing to be a research sample. Data analysis was performed using SPSS for Windows. Univariate analysis was used to describe the data for each variable in the study. Data were presented in a frequency distribution table. Bivariate analysis was used to measure pain levels between the independent and dependent variables.

RESULTS

The characteristics of the respondents in this study include age, education, occupation, and position. The frequency distribution of respondent characteristics can be seen in Table 1. It is known that of the 15 respondents, the majority of respondents were in the non-risk age category, namely 12 people (80.0%), while those in the risk age category were only 3 people (20.0%). Viewed from the level of education, the majority of respondents had a college education, namely 10 people (66.7%), and the rest had a high school education, namely 5 people (33.3%).

Based on employment status, 8 respondents (53.3%) were employed and 7 (46.7%) were unemployed, making the proportions nearly equal. Regarding the respondents' positions when lying down or sitting, the majority were sitting (13 respondents (86.7%), while only 2 (13.3%) were lying down.

Table 1. Frequency Distribution of Respondent Characteristics

Variables	Category	F	%
Age	>35 years	3	20.0
	<35 years	12	80.0
Education	Senior High School	5	33.3
	College	10	66.7
Work	Work	8	53.3
	Doesn't work	7	46.7
Effleurage Massage Position	Sit	13	86.7
	Lie down	2	13.3
Total		**15**	**100.0**

Table 2. Frequency Distribution of Labor Pain Categories Before and After Effleurage Massage Intervention

Pain Category	*Pretest*		*Posttest*	
	F	%	F	%
Mild pain	0	0.0	11	73.3
Moderate Pain	13	86.7	4	26.7
Severe Pain	2	13.3	0	0.0
Total	**15**	**100.0**	**15**	**100.0**

Based on Table 2, before the Effleurage Massage intervention, most respondents experienced moderate pain (13 respondents (86.7%) and severe pain (2 respondents (13.3%). There were no respondents with mild pain before the intervention. After the Effleurage Massage intervention, there was a change in the distribution of pain categories, with most respondents experiencing mild pain (11 respondents (73.3%) and moderate pain (4 respondents (26.7%). There were no respondents with severe pain after the intervention.

Table 3. Effect of Effleurage Massage Method on Reducing Pain Intensity in First Stage of Labor

Variables	*Mean Pretest*	Mean Posttest	Mean Difference	*p-value*
Labor Pain Score	5.20	3.20	2.00	0.001

Based on the results of the Wilcoxon Signed Rank Test, all respondents (n=15, 100%) experienced a decrease in pain scores after being given Effleurage Massage, with no respondents experiencing an increase in pain. The average pain score decreased from 5.20 to 3.20 with a difference of 2.00 points. The statistical test results obtained a p-value = 0.001. Because the p-value <0.05, H_0 is rejected, which means there is a significant effect of Effleurage Massage on reducing pain in the first stage of labor in the active phase at BPM Wanti.

DISCUSSION

The results of the study showed that effleurage massage significantly reduced pain during the active phase of first-stage labor in BPM Wanti. This was demonstrated by the Wilcoxon Signed Rank Test, which showed a p-value of 0.001.

Based on the results of pain intensity measurements, the average pain score before the intervention was 5.20, which is categorized as moderate to severe pain. After 20 minutes of Effleurage Massage, the average pain score decreased to 3.27, which is categorized as mild to moderate pain. Thus, there was an average decrease of 1.93 points. A reduction in pain of 1–2 points on a 0–10 numerical scale has been considered to have important clinical significance because it can improve patient comfort and help individuals control their response to pain.

The results of this study also showed that all respondents (100%) experienced a decrease in pain intensity after receiving Effleurage Massage. No respondents experienced an increase

in pain, nor did any respondents experience a stable pain level. These consistent results indicate that the intervention had a relatively even effect on all respondents.

The reduction in pain intensity after effleurage massage can be explained by two simple mechanisms. First, the gentle, slow, and rhythmic stroking movements on the back stimulate the skin and muscles. This stimulation distracts the mother from the pain of contractions, thus reducing the perception of pain. The comfortable touch also helps the mother's body relax. Second, continuous therapeutic touch can stimulate the body to release endorphins.(Sheidaee et al., 2026)According to Handayani (2024), endorphins are the body's natural hormones that function as pain relievers. When the body relaxes through massage, endorphins are released, increasing the mother's pain threshold, reducing pain, and making her feel calmer and more comfortable during labor (Ranjbaran et al., 2017).

The results of this study align with those of Pratiwi et al. (2021) on the effectiveness of abdominal lifting, effleurage, and deep back massage techniques in managing pain during the active phase of first-stage labor. The study sample consisted of 30 women, divided into three treatment groups, each receiving a 15-minute massage. The results showed a significant difference in pain scores before and after abdominal lifting, effleurage, and deep back massage. There was no significant difference in pain scores after treatment between the three groups, with a p value of 0.080 ($p > 0.05$) (Pratiwi et al., 2021).

Effleurage technique is the act of rubbing the abdomen slowly in rhythm with breathing during contractions, used so that the mother does not focus her attention on contractions. This pain reduction occurs because the effleurage massage can stimulate tactile fibers in the skin so that pain signals can be inhibited. When the touch is made with circular motions of both hands such as butterfly movements in the abdomen with soft and light strokes slowly, it will increase abdominal relaxation and reduce muscle tension so as to provide comfort to the mother and reduce pain intensity (Nurmaliza et al., 2024).

Massage is believed to help relieve labor pain by promoting the release of endorphins, reducing catecholamine levels, and stimulating afferent nerve fibers that can interfere with the transmission of pain signals. This mechanism is consistent with the gate control theory, in which stimulation of sensory nerve fibers helps reduce the perception of pain during

labor(Ratna, 2022). Touch relaxation can help mothers feel more relaxed through gentle touch or rubbing of different parts of the body. Gentle massage may provide a sense of freshness, relaxation, and comfort during labor. It can also stimulate the release of endorphins, the body's natural pain-relieving substances, which may help reduce pain while promoting feelings of comfort and well-being (Shetty & Fogarty, 2021).

Researchers assume that Effleurage Massage is proven to be effective in reducing pain in the active phase of first-stage labor with a reduction range of 1.93–2.30 points over a duration of 15–30 minutes. The consistency of results across different locations, sample sizes, and durations further strengthens scientific evidence that this technique can be replicated and recommended as a non-pharmacological intervention in maternal health services. Based on the above research results, researchers assume that the effectiveness of Effleurage Massage is not only due to its relaxation effects and endorphin release, but also to psychological aspects. During the study, researchers observed that most respondents appeared calmer, were able to control their breathing patterns well, and showed less pain expressions compared to before the intervention. Although these observations were not measured quantitatively, this phenomenon supports the theory that emotional support through touch can help reduce maternal anxiety during labor.

The results of this study also support the implementation of the concept of compassionate mother care, which is currently a focus of maternal health services in Indonesia. Effleurage massage is an effective non-pharmacological method in helping reduce the intensity of pain during the first stage of labor. This technique provides stimulation through gentle, rhythmic touch that can increase maternal relaxation, reduce tension during contractions, and increase comfort during labor. In addition to providing physiological benefits such as reduced pain, Effleurage massage also helps mothers feel calmer and better able to adapt to the ongoing labor process.(Bepari et al., 2025)

Although this study showed highly significant results, there are several limitations that should be considered. The sample size was relatively small, consisting of 15 respondents, and the study did not use a control group for comparison. This limited sample size meant that the data distribution did not meet the assumption of normality, necessitating analysis

using nonparametric tests. However, the p-value of 0.001 indicates a significant effect, despite the limited sample size.

Based on the overall results of the study, it can be assumed that Effleurage Massage is an effective, safe, and easy-to-implement non-pharmacological method to help reduce pain in the active phase of first-stage labor. This finding has important implications for midwifery practice, especially at BPM Wanti, namely that Effleurage Massage is worthy of being provided as a complementary therapy to relieve pain in the first stage of labor. This technique does not require additional costs, does not cause side effects, and can be taught to husbands and other family members, thereby increasing family involvement in the labor process.

CONCLUSION

Based on the results of research and data analysis regarding the effect of effleurage massage on the intensity of labor pain in the first active phase at PMB Wanti, Medan Deli District, Medan City in 2026, it can be concluded that before the intervention, most respondents experienced moderate pain as many as 13 respondents (86.7%) and severe pain as many as 2 respondents (13.3%), while after being given effleurage massage for 20 minutes, most respondents experienced mild pain as many as 11 respondents (73.3%) and moderate pain as many as 4 respondents (26.7%). The average pain score decreased by 2.00 points. The results of the Wilcoxon Signed Rank Test showed a p-value = 0.001 ($p < 0.05$), so H_0 was rejected and it can be concluded that there is a significant effect of effleurage massage on reducing the intensity of labor pain in the first active phase, with all respondents (100%) experiencing a decrease in pain intensity after the intervention.

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