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PROVISION OF COUNTERPRESSURE AND LAVENDER AROMATHERAPY IN REDUCING PERCEIVED LABOR PAIN

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ABSTRACT

Improperly managed labor pain can disrupt uterine activity, leading to prolonged labor. Non-pharmacological methods, such as counterpressure and aromatherapy, are effective in reducing pain and anxiety during the first stage of labor. Aromatherapy, particularly with lavender, provides a calming effect on the body and mind, helping to alleviate stress and pain perception. This study aims to determine the effect of the combination of counterpressure and lavender aromatherapy in reducing labor pain in the first active phase. A quasi-experimental design with a pretest-posttest control group approach was used. The study included 140 laboring women in the active phase of stage I labor from Bantul, Yogyakarta, and PMB Rejang Lebong, Bengkulu. Participants were selected through purposive sampling, and pain levels were measured using the Visual Analog Scale (VAS). The intervention group received both counterpressure and lavender aromatherapy, while the control group was given lavender aromatherapy and deep breathing techniques. Data were analyzed using a dependent t-test, revealing a significant effect of the combined intervention in reducing labor pain (p-value < 0.005). Counter Pressure and lavender aromatherapy have been shown to reduce labor pain, recommended as non-pharmacological management to manage labor pain during the active phase of the first stage of labor.

Keywords: Lavender Aromatherapy, Counterpressure, Labor Pain

ABSTRAK

Nyeri persalinan yang tidak ditangani dengan baik dapat mengganggu aktivitas uterus, yang menyebabkan persalinan lama. Metode nonfarmakologis, seperti counterpressure dan aromaterapi, efektif dalam mengurangi nyeri dan kecemasan selama kala I persalinan. Aromaterapi lavender, memberikan efek menenangkan pada tubuh dan pikiran, membantu meringankan stres dan persepsi nyeri. Penelitian ini bertujuan untuk mengetahui pengaruh kombinasi counterpressure dan aromaterapi lavender dalam mengurangi nyeri persalinan selama fase aktif persalinan kala I. Desain penelitian quasi-eksperimen dengan pendekatan kelompok kontrol pretest-posttest digunakan. Penelitian ini melibatkan 140 ibu bersalin dalam fase aktif persalinan kala I dari Bantul, Yogyakarta, dan PMB Rejang Lebong, Bengkulu. Partisipan dipilih melalui purposive sampling, dan tingkat nyeri diukur menggunakan Visual Analog Scale (VAS). Kelompok intervensi diberikan kombinasi counterpressure dan aromaterapi lavender, sedangkan kelompok kontrol diberikan aromaterapi lavender dan teknik pernapasan dalam. Data dianalisis menggunakan uji-t dependen, yang menunjukkan efek signifikan dari intervensi gabungan dalam mengurangi nyeri persalinan (nilai-p < 0,005). Counter Pressure dan aromaterapi lavender terbukti dapat mengurangi nyeri persalinan, direkomendasikan sebagai penatalaksanaan non farmakologis untuk mengelola nyeri persalinan selama fase aktif kala I persalinan.

Kata kunci: Aromaterapi Lavender, Counterpressure, Nyeri Persalinan

INTRODUCTION

Labor pain could affects physiology and psychology. Labor pain could affects cardiac output, blood pressure, oxygen saturation and catecholamine. Severe labor pain could also results in loss self-control, stress, depression, negative experiences, and emotional trauma of labor (Varney, 2017). One of the problems experienced by the women who will give birth is the emergence of anxiety, fatigue, and stress of anxious feelings. As a result of this stress factor, there can be tension in smooth muscle and vasoconstriction of blood vessels. Then uterine contractions will decrease which results in prolonged labor, affecting the welfare of the fetus so that it can cause the mother to deliver *Sectio Caesarea.* (Bobak et al., 2016).

The majority of primiparaous (75%) experienced severe or unbearable pain during childbirth, with almost half (49.06%) reporting moderate pain. Most (96%) experienced pain in the lower abdomen, hips and thighs, while 90% experienced cramping and 88% reported dull pain. The severity of labour pain was rated as severe by 37%, moderate by 52.9% and mild by 10.1% of primiparous women, which is higher than the 20.7% of multiparous women who reported severe pain. In addition to parity, factors such as uterine contractions, cervical dilation and demographic or obstetric conditions also influence labour pain (Desmawati et al., 2021).

The labor pain experience of nulliparous women is generally more sensory pain during early labor, while multiparous women may experience more pain intensity during late stage I and stage II of labor as a result of the rapid descent of the fetus (Potter et al., 2016). One of the effective non-pharmacological methods to reduce pain and anxiety in mothers in the stage I of labor is *counterpressure* (Akköz Çevik & Karaduman, 2020).

Counterpressure is a massage performed by applying continuous pressure during contractions on the patient's sacrum bone with the carpus or fist. The results of the research by Zaharoh et al (2021) state that *counterpressure* can reduce the pain scale of labouring mothers during the stage I of labor (Zaharoh et al., 2021). Massage *counterpressure* (skin simulation) is a massage by applying continuous pressure to the patient's sacrum bone with the carpus of fist of one palm. Massage *counterpressure* can be given straight and circle. Research by Karuniawati (2019) this methods could relieve the pain by inhibiting pain signals, increasing blood flow and oxygenation to all tissues. During the massage, it will stimulate the body to release endorphin which acts as a pain reliever and creates a feeling of comfort. Gentle massage helps mothers feel more refreshed, relaxed and comfortable during labor. The massage will improve blood circulation or open blood circulation (Karuniawati, 2019).

Aromatherapy can also be used to reduce the perception of labor pain during labor, because aromatherapy is able to provide sensations that calm the self and brain, as well as stress felt. Aromatherapy is a therapeutic plant that contains essential oils to overcome physical and psychological complaints of labouring mothers. Physically it is good to use to reduce the pain, while psychologically it can relax the mind, reduce tension and anxiety and provide calmness. Labor pain can be relieved by using Lavender aromatherapy (Novita et al., 2021). The urgency of this research, massage *counterpressure* and aromatherapy interventions was given to overcome labor pain so as not to feel anxious. A woman who is about to give birth should have a level of confidence in her ability to cope with labor is one of the best predictors of her labor experience and there is an inverse relationship between confidence and anxiety in labor (Akköz Çevik & Karaduman, 2020).

Providing counter-pressure massage intervention with lavender essential oil is more effective in reducing the level of labour pain, because mothers who are given massage alone can make mothers more comfortable, especially when combined with lavender essential oil, in addition to being used as a lubricant when doing massage, mothers can also inhale the smell of lavender essential oil, which functions to make mothers more relaxed (Fitri & Emilda, 2020).

The provision of non-pharmacological therapy combined with *counterpressure* and aromatherapy has never been done in independent midwife practices. A preliminary survey conducted by interview, at the location of the midwife's independent practice stated that if a patient who was about to give birth felt contractions or labor pains, it was due to the process of descending the fetal head, and usually the patient's family was asked to rub the mother's stomach, waist, and take deep breaths so that the mother felt relaxed. The purpose of this research was to determine the effectiveness of Counterpressure and Lavender Aromatherapy on Pain Perception in Labor.

METHOD

Design of research that will be used in this research is Quasi-Experimental research with a pre-test and posttest with control group design. The population in this research were all laboring mothers in 2 PMBs in Bantul City, Special Region of Yogyakarta and 4 PMBs, in Curup City, Rejang Lebong Regency. The sampling technique was purposive sampling, a sample selection technique based on certain criteria set by the researcher to suit the research objectives. The research sample was laboring

mothers in stage I of active phase in 4 PMBs in Yogyakarta and 4 PMBs in Curup City, Rejang Lebong Regency.

Inclusion criteria in this study are Gestational Age 37-42 weeks, 4-8 cm of Dilation, Single pregnancy, No history of miscarriage, Head presentation, Intact amniotic fluid, Pain perception scale 4-6, Willing to be a respondent and sign an *informed consent* Exclusion criteria in this study There is a history of infectious disease such as tuberculosis and annual diseases such as hypertension and asthma. There is a history of pregnancy-related disease such as asthma, hypertension, tuberculosis, heart disease, diabetes. Subjects were excluded from the study if they experienced one or more of the following criteria during the study are the long-time of stage I and subjects who withdrew before the study was completed.

The minimum sample size in this research was determined based on the Stanley Lemezhow Formula. Thus, the number of samples to be studied is 53 respondent, with an estimated drop out of 20% (12 people), then the number of samples needed is 70 respondents for each group.This research instrument used a questionnaire for respondent demographic data and a visual analog scale (VAS) observation sheet measured during the active phase of the stage I of cervical dilation 4 cm to 8 cm.

VAS is a measuring tool that can be used easily because it can take less than one minute. The reliability of VAS-P has been demonstrated by a reliability test result of $r=0.94$; $P<0.001$, with a validity of 0.99. This indicates that VAS is a superior tool for pain assessment, owing to its high sensitivity and reliability, ratio scale properties, simplicity and ease of use (Vitani, 2019). Pain perception was measured before and after the intervention. Tools and materials of this research: Aromatherapy, diffuser, syringe, tennis ball, lavender aromatherapy essential oil, baby oil, and water. The intervention of a combination of counterpressure and lavender aromatherapy is carried out by, first. Explain the steps to do counterpressure. Organize the position the respondent, the choice of standing, sitting and lying on the left side or right side. Pressing and massaging is done in the lumbal, sacrum and lateral femoral parts. Perform the pressure for 20 minutes.Evaluate the level of pain and comfort of laboring mothers with the actions take.

While performing counterpressure, also give positive affirmations to the laboring mother. When pressing in a seated position as follows. While pressing and massaging lavender aromatherapy with a diffusers turned on. The composition of the ratio of water and essential oil 500 mL of water adder 0.5 cc lavender oil. Make sure that the mother does not experience allergies to aromatherapy.The research was conducted from May 01 to August 28, 2024 (4 months) in 2 locations Bantul Regency Yogyakarta and Rejang Lebong Bengkulu. The place of research was in independent midwife practice (PMB), namely PMB Appi Amelia, PMB Triwilaida, PMB Dewi Aprita, PMB Ninuk, and PMB Reni. Data collection used questionnaires for respondent demographic data and pain perception observation sheets using a visual analog scale (VAS) measured during the active phase of the stage I. Respondents had obtained informed consent and gave consent, to participate in the study.

RESULTS AND DISCUSSION

RESULTS

Respondent Characteristics

Characteristics of respondents in the study included age, gravida and employment status

Tabel 1. Respondent Characteristics (n=140)

Characteristics of respondents	Measuring Results	Frequency (f)	Percent (%)
Age	< 20 and >35	43	30,7
	20 – 35	97	69,3
Gravida	Primigravida	82	58,6
	Multigravida	58	41,4
Occupation	Employed	66	47,1
	Unemployed	74	52,9

Based on table 1, it shows that of the 140 respondents, more than half were in the age range of 20-23 years (69.3%), more than half were primigravida (58.6%) and half of the respondents unemployed (52.9%).

The following analysis is about the perception of the pain scale felt by the respondents when going to labor.

Table 2. Difference in Pain Before and After Intervention

Variables	Intervention			Control		
	Mean	Min-Max	SD	Mean	Min-Max	SD
Perception of the pain						
Pre	6,83	4-9	7,706	6,80	4-9	6,162
Post	3,74	2-6	4,956	4,60	2-8	6,041

Based on table 2, explains that the level of pain in the intervention group who received the combined treatment of counterpressure and lavender aromatherapy, before being given the intervention, the minimum pain scale was 4, the maximum pain scale was 9 and the average pain scale was 6,83. Whereas after the intervention the minimum pain scale was 2, the maximum pain was 6 and the average pain was 7,74. Changes in pain with a difference of 2,20. The control group who received lavender aromatherapy and deep breathing treatment, before being given a minimum pain scale intervention in the control group the minimum pain scale was 2, the maximum pain scale was 8, and the maximum pain was 8 and the average pain was 4,60. There is a changes in pain with the difference of 2,20.

Table 3. Effect of Counterpressure and Lavender Aromatherapy of Maternity Pain Perception

Group Int/ Cont	Mean	SD	t	95% CI		P value
				Lower	Upper	
Pre and post intervention Pain	3,08	1,36	13,43	2,62	3,55	0,000
Pre and post Control Pain	2,20	2,20	5,89	1,44	2,95	0,000

Based on table 3 that there is a difference in mean pain perception between the intervention group with a value of 3,80, while in the control group the difference in pain perception is 2,20. There is an effect of Counterpressure and Lavender Aromatherapy of Maternity Pain Perception Stage I with a pvalue of 0,000. Providing counterpressure and lavender aromatherapy can be integrated into standard labor pain management.

DISCUSSION

The pain a person feels is a result of physical reflexes and psychological responses. Various physiological and psychological factors can affect the intensity of labor pain. Physiological factors that affect pain intensity are general condition, age parity, duration of labor, maternal and fetal position. Pain perception is influenced by psychological factors such as coping mechanisms, self-confidence, anxiety and fear.

The intensity of pain during labor can affect the labor process, and the well-being of the fetus. The pain will continue to increase due to the activity of the sympathetic nervous system which leads to higher plasma concentrations of catecholamine, especially epinephrine. Labor will put pressure on the cardiovascular system and respiratory system. Elevated plasma concentrations of catecholamine during labor pain can increase maternal cardiac output, peripheral vascular resistance and decrease uteroplacental perfusion. Event stress or anxiety in labor is associated with a drastic increase of norepinephrine plasma concentrations and subsequently leads to decreased blood flow to the uterus. Plasma epinephrine concentrations in women experiencing high levels of labor have been studied and the result are similar to those of women who have been given 15 mg epinephrine per intra venous bolus and this could significantly decrease blood flow to the uterus (Pan & Eisenach, 2019).

Pain during intermittent contractions can also stimulate the respiratory system and affect the period of intermittent hyperventilation. With no additional oxygen coming in, in the respiratory system compensates poorly and can eventually lead to maternal and fetal hypoxia. Hyperventilation occurs because stress during labor can increase oxygen consumption and even respiratory alkalosis. Hypocalcemia results in tetany, paresthesia, and orientation disorders while respiratory alkalosis that continues without a good body compensation mechanism can result in metabolic acidosis which ultimately results in fetal acidosis. Fetal acidosis also occurs due to increased autonomic nervous activity in labor stress which can result in increased peripheral resistance cardiac output, and blood pressure. Autonomic nervous activity can increase catecholamine which have an impact on increasing placental perfusion. Decreased placental perfusion can eventually lead to lipolysis which results in increased fatty acid formation. Increased fatty acids in the blood lead to metabolic acidosis in the mother which in turn leads to fetal acidosis (Bobak et al., 2016).

One of the non-pharmacological ways in this study is to provide combination of counterpressure and lavender aromatherapy to overcome labor pain with the counterpressure technique by pressing the innervation in the low back pain area of the laboring mother, using the fist to the mother's waist for 20 minutes in a sitting position. Pressing is done when the laboring mother experiences uterine contractions (which cause low back pain) during the stagr I of active phase (Maryunani, 2020). To reduce labor pain, pharmacological and non-pharmacological methods can be used. Currently, various non-pharmacological methods are developed, because they have few side effects and are cheap. One of the effective non-pharmacological methods to reduce pain and anxiety in mothers in the stage I of labor is counterpressure (Akköz Çevik & Karaduman, 2020)

Counterpressure is a massage performed by applying continuous pressure during contractions on the patient's sacrum with the carpus or fist. The results of the research by Zaharoh et al (2021) state that counterpressure can reduce pain scale of laboring mothers during the stage I of labor (Zaharoh et al., 2021). Massage counterpessure can be given straight and circular. Research by Karuniawati (2018) stated that this method can relieve pain by inhibiting pain signals, increasing blood flow and

oxygenation to all tissues. During the massage, it will stimulate the body to release endorphin which acts as a pain reliever and creates a feeling of comfort. Gentle massage helps the mother feel more refreshed, relaxed and comfortable during labor. The massage will improve blood circulation or open blood circulation (Karuniawati, 2019).

The conterpressure technique is done by applying pressure to the source of the labor waist pain are o that it can release muscle tension, reduce labor waist pain, improve blood circulation, and ultimately cause relaxation. The counterpressure massage technique during labor will help to overcome muscle cramps, reduce pain, speed up the labor process, and eliminate muscle tension in the thighs followed by expansion of the pelvic bones due to relaxation in the muscles around the pelvis and make it easier for the baby to go down through the birth canal, affective in helping reduce labor lumbar pain (Zaharoh et al., 2021).

Aromatherapy can also be used to reduce the perception of labor pain during labor, because aromatherapy is able to provide sensations that calm the self and brain, as well as the stress felt. Aromatherapy is a therapeutic plant contains essential oils to overcome physical and psychological complaints of laboring mothers. Physically it is good to use to reduce pain, while psychologically it can relax the mind, reduce tension and anxiety and provide serenity. Labor pain can be overcome by using lavender aromatherapy (Novita et al., 2021). Lavender aromatherapy can reduce labor pain. The results of research by Andini et al (2022) revealed that lavender aromatherapy had an effect on the pain perception of laboring mothers in the stage I. Mothers who are given lavender aromatherapy are better able to adapt to labor pain in the stage I of labor (Andini et al., 2022).

The research conducted by Masitoh and Puspitasari (2024) posits that the implementation of counterpressure intervention is efficacious in mitigating the severity of labour pain experienced by mothers in the initial phase of labour, exhibiting an average reduction in pain scale of 1,06. Concurrently, the administration of lavender aromatherapy has been demonstrated to engender an average reduction in pain scale of 1,2 (Masithoh & Puspitasari, 2024). The findings of this study, which examined the combination of counterpressure and lavender aromatherapy, demonstrated an average reduction in the pain scale of 3.09. This finding indicates that the combination of counterpressure and lavender aromatherapy is more efficacious in reducing labor pain than either counterpressure or lavender aromatherapy alone.

The results of the research show that there is an effect the combination of counterpressure and lavender aromatherapy in reducing labor pain during the active phase of stage I labor. The combination of counterpressure and lavender aromatherapy has the potential to provide a more optimal effect in reducing labour pain through simultaneous physical and psychological approaches.Counterpressure addresses pain physically by reducing the transmission of pain signals, while lavender aromatherapy reduces anxiety and promotes mental relaxation, allowing the mother to better manage pain.With decreased stress through aromatherapy, the mother's pain tolerance threshold increases, making counterpressure more effective in reducing discomfort. The combination of these approaches is hypothesised to facilitate a sense of calm and increased maternal control over the labour process, which may in turn contribute to a psychological acceleration in the onset of the desired outcomes.

CONCLUSION AND RECOMMENDATION

The conclusion in this study is that Counterpressure and Lavender Aromatherapy have an effect on reducing the Pain Perception of Stage I of Labor. Counterpressure and lavender aromatherapy are able to overcome the perception of pain so that the mother in labour feels relaxed and can have a normal birth and feel happy. The recommendation of this study is to use counter-pressure and lavender aromatherapy in the management of labour pain.

Apllication combination of counterpressure dan lavender aromatherapy in cervical dilation 4 cm to 8 cm. Counterpressure applying continuous pressure to the patient's sacrum bone with the carpus of fist of one palm as straight and circle while lavender aromatherapy with a diffusers turned on.

To avoid the perception of pain becoming negative, there needs to be support in the form of education by health workers on duty in the delivery room and also support from husbands who can provide a sense of comfort to laboring women**.**

LIMITATION OF THE STUDY

This study was conducted in two areas with differing cultural backgrounds, which have the capacity to influence perceptions of maternal pain during childbirth. Purposive sampling was employed based on subjective considerations of the researchers; consequently, the results of the study are often unable to be generalised to a wider population. It is important to note that this sample does not represent the population as a whole.

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ETHICAL CONSIDERATIONS

This research has received ethical approval from the research ethics committee of the Poltekkes Kemenkes Yogyakarta with ethical number No.DP.04.03/e-KEPK.2/712/2024

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Conflict of Interest Statement

Authors declared no conflicts of interest

REFERENCES

Akköz Çevik, S., & Karaduman, S. (2020). The effect of sacral massage on labor pain and anxiety: A randomized controlled trial. *Japan Journal of Nursing Science : JJNS*, *17*(1), e12272. https://doi.org/10.1111/jjns.12272

Andini, I. F., Puspita, Y., & Susanti, E. (2022). *Pengaruh Aromaterapi Lavender Dan Nafas Dalam Pada Ibu Bersalin Terhadap Persepsi Nyeri Persalinan*. *5*(2), 10–18.

Bobak, I. M. B., Lowdermilk, D. L., & Jensen, Margaret Duncan Perry, S. E. (2016). *Buku Ajar Keperawatan Maternitas Ed. 4*. EGC.

Desmawati, D., Kongsuwan, W., & Chatchawet, W. (2021). Level of Labor Pain, Level of Labor Pain Behaviors, and Cultural Pain Behaviors among First-Time Indonesian Muslim Mothers. *Open Journal of Obstetrics and Gynecology*, *11*(01), 27–39.

https://doi.org/10.4236/ojog.2021.111004
Fitri, N., & Emilda, D. N. (2020). *Perbandingan massage counterpressure dan massage counter pressure menggunakan minyak esensial lavender terhadap tingkat nyeri persalinan kala i fase aktif*. *2*(3).
Karuniawati, B. (2019). *EFEKTIVITAS MASSAGE COUNTER DALAM MENURUNKAN INTENSITAS NYERI PERSALINAN KALA I The Effectiveness Of Massage Counter In Lowering Intensity Of Labor Pain*. *10*(2), 69–75.
Maryunani, A. (2020). *Nyeri dalam persalinan: Teknik dan cara penanganannya*. Trans Info Media.
Masithoh, S., & Puspitasari, A. I. (2024). Perbandingan Terapi Komplementer Counter Pressure Dan Aromaterapi Lavender Terhadap Penurunan Intensitas Nyeri Pada Persalinan. *Jurnal Ilmiah Permas: Jurnal Ilmiah STIKES Kendal*, *14*(4), 1287–1294.
Novita, N., Setiawati, D., & Fiesta, O. (2021). Penurunan Nyeri Persalinan Kala I dengan Aromaterapi Lavender. *Journal of Complementary in Health (JCoHealth)*, *1*(2), 40–46.
Pan, P., & Eisenach, J. (2019). *The Pain of Childbirth and Its Effect on the Mother and the Fetus*. Anesthesia Key. https://aneskey.com/the-pain-of-childbirth-and-its-effect-on-the-mother-and-the-fetus/
Potter, P. A., Perry, A. G., Stockert, P., & Hall, A. (2016). *Fundamentals of Nursing - E-Book*. Elsevier Health Sciences. https://books.google.co.id/books?id=eCKKCwAAQBAJ
Varney, H. (2017). *Buku Ajar Asuhan Kebidanan. Edisi 4*, *Volume 2*. EGC.
Vitani, R. A. I. (2019). Tinjauan Literatur: Alat Ukur Nyeri Untuk Pasien Dewasa Literature Review: Pain Assessment Tool To Adults Patients. *Jurnal Manajemen Asuhan Keperawatan*, *3*(1), 1–7.
Zaharoh, A., Hanum, F., Adriyani, N., & Yanti, L. (2021). *Teknik Counter Pressure untuk Mengurangi Nyeri Persalinan Kala 1 Fase Aktif*. 1009–1013.