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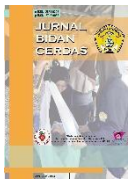

Impact of Sacral Lumbal Massage on Pain and Head Decline During First Stage of Labor

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ABSTRACT

Introduction: Labor pain varies in intensity, with many women experiencing high levels during delivery. This study aims to evaluate the effectiveness of sacral massage on pain intensity and fetal head descent during the first stage of labor. **Method:** A quantitative study was conducted with a sample of laboring mothers divided into intervention and control groups. Participants were selected using purposive sampling, with criteria including mothers aged 20-35 years, active first-stage labor, good maternal and fetal health, cephalic presentation, and uncomplicated labor. The intervention involved lumbar-sacral massage for 20 minutes, repeated once, with intervals of 5-10 minutes. The control group received relaxation through breathing exercises. The study took place from January to March 2024. Data were analyzed using the Wilcoxon and t-tests with a significance level of 0.05. **Results:** The intervention group significantly reduced labor pain (pre: 6.90, post: 3.70, p=0.000). There was no significant difference in fetal head descent duration between groups (p = 0.05). **Conclusion:** Lumbar sacral massage is an effective non-pharmacological method for reducing labor pain and is recommended for pain management in midwifery practice.

INTRODUCTION

Women are physically and emotionally affected by childbirth, a remarkable and life-altering procedure that is sometimes regarded as an agonizing experience (Nori et al. 2023) . To push the baby out of the birth canal, labor is a complicated physiological process that entails a series of uterine contractions. The time between the start of regular contractions to full cervical dilatation is known as the first stage of labor, or first phase of labor. Moms frequently endure excruciating agony at this stage, which may have an impact on the birthing process and the health of the mother and child (Akköz Çevik & Karaduman, 2020). A woman's life is most crucial and significant during childbirth. However, the majority of laboring women experience intense pain (Pietrzak et al., 2022). Of primiparas, over 23% reported excruciating labor pain, 65% very strong or strong, and 9% acceptable. In contrast, 17% of multiparous patients reported excruciating pain, 46% reported very strong or strong pain, and 25% reported manageable pain (Saeedeh Mohamad Beigi & , Mousa Alavi, 2019).

The primary causes of labor pain include pressure on the pelvic tissues, cervical dilation, and uterine contractions. Strong, persistent lower back and abdominal pain is

how this pain is most commonly described, and it can stress the mother out both physically and psychologically. In order to enhance the comfort and well-being of mothers during labor and to promote a more seamless delivery, effective pain management is crucial (Nori et al., 2023).

An essential component of medical care during labor is pain management (Zuarez-Easton et al., 2023). Nowadays, more and more women are selecting pain management techniques that enable them to take full control of and optimally participate in childbirth. Non-pharmacological pain management techniques are becoming more and more popular for managing labor pain. These techniques help women experience the least amount of pain possible while remaining completely relaxed and without the need for medication (Akköz Çevik & Karaduman, 2020). Nonpharmacologic alternatives are seen as safe and appealing. Although each case is different, the evidence for its effectiveness is not as strong as it is for other approaches, especially when it comes to the delivery stage (Zuarez-Easton et al., 2023).

The goal of lumbar sacral massage, a nonpharmacological treatment, is to reduce pain and muscular tension during contractions by applying pressure and massaging the lumbar (lower back) and sacral (lower spine) areas (Durmuş & Eryilmaz, 2022). According to Öztürk, EmiŇnov, and Ertem 2022, this massage is thought to trigger the production of endorphins, which are naturally occurring substances that can soothe pain, relax muscles, and enhance blood circulation (Öztürk et al., 2022).

Muscle tension frequently prevents the fetal head from descending. A smooth delivery and a lower risk of problems are greatly dependent on the fetal head's optimal position and lowering. increased descent of the fetus's presenting portion during the first stage of labor as dilatation advances (Collins;RN & MD, 2015). where the head of the fetus descends into the pelvis and passes through the birth canal. The advancement angle's development and the fetal head's distance from the perineum can be used to forecast whether a vaginal birth will be successful (WHO, 2020). This study sought to determine the impact of sacral lumbar massage on the intensity of labor pain and the descent of the fetal head during the initial phase of labor. It is intended that this method will yield substantial empirical data in favor of sacral lumbar massage as a non-pharmacological labor pain relief technique.

METHODS

A quasi-experimental design consisting of one pretest group, one posttest group, and a control group is used in quantitative research. From January to March 2024, information collection was carried out at the Rosliana Independent Midwife Practice (PMB) in Bekasi. In this study, 27 mothers gave birth. The sample was selected using sequential sampling techniques, sometimes known as non-probability sampling. The following inclusion criteria form the basis of this method: 1. The exclusive criteria for this study include: (1) problematic childbirth, provided that the birth mother is between 20 and 35 years old; (2) fetus in stage 1 of the active phase (signs distinguishing the acceleration, maximal dilatation and deceleration phases); (3) the condition of the mother and fetus is good; and (4) the fetus is behind the head.

Twenty participants made up the sample size, which was split into two groups: intervention and control. variables that gauge the degree of fetal pain and head descent. The variable instrument for lumbar sacral massage is implemented using standard operating procedures (SOP). Fetal head descent and discomfort intensity were the factors that were measured. Those respondents who satisfied the inclusion criteria were chosen to begin the research. After being given sufficient information,

respondents were requested to complete a consent form. Throughout the first stage, the intervention—lumbar sacral massage—was performed repeatedly for 20 minutes.

Scale assessment numerical (NRS) was utilized to collect data in order to measure the level of pain during childbirth (Nugent et al., 2021). Using the fifth finger, perform an abdominal palpation to lower the fetal head (Nirmal, Daisy Fraser 2017). Data analysis Wilcoxson test and T test with a significance of 0.05. Research data is presented in tabular form and narrated. This research has gone through the Ethics Commission of the Bani Saleh Bekasi College of Health Sciences to obtain ethical permission for health research and has received ethical approval No. EC.009/KEIK/STKBS/I/2024.

RESULT

Table 1 shows that six research participants in the control group were predominantly between the ages of 26 and 30, while five of the ten individuals in the intervention group were primarily between the ages of 20 and 25. Parity revealed that 60% (6 respondents) and 70% (7 respondents) of the intervention group and control group, respectively, were in primigravida parity.

Table 1. Frequency distribution of maternal characteristics based on age and parity

Characteristics	Group			
	Intervention		Control	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Age				
20-25 years	5	50.0	4	40.0
26-30 years	4	40.0	6	60.0
>30 years	1	10.0	0	0.0
Parity				
Primigarvida	6	60.0	7	70.0
Multigravida	4	40.0	3	30.0

According to the results in Table 2, the average labor pain in the first stage for the intervention group was 6.90 (pre) and 3.70 (post), whereas the average labor pain in the control group was 6.70 (pre) and 8.20 (post).

Table 2. Average intensity of pain in the first stage of labor before and after the lumbar-sacral massage method

Group	Pain Scale stage 1	Mean	Std. Deviation	Min	Max
Intervention	Pre	6.90	0,738	6	8
	Post	3.70	0,675	3	5
Control	Pre	6.70	0,483	6	7
	Post	8.20	0,422	8	9

According to Table 3, the average length of fetal head descent in the intervention group's first stage was 2.60 (pre) and.00 (post), whereas it was 3.10 (pre) and.00 (post) for the control group.

Table 3. Average descent of the fetal head in the first stage of labor before and after the Lumbar Sacral Massage Method

Group	Long	Mean	Std. Deviation	Min	Max
Intervention	Pre	2.60	0.568	2	4
	Post	0.00	0.000	0	0
Control	Pre	3.10	0.516	2	2
	Post	0.00	0.000	0	0

Table. 4 Effectiveness of lumbar sacral massage on pain intensity in the first stage of labor

Mann-Whitney U	0.000
Wilcoxon W	55.000
Z	-3.954
Asymp . Sig. (2-tailed)	0.000

According to Table 4, there is an Asymptotic signature probability value for how successful lumbar sacral massage is at reducing pain intensity. A substantial difference in effectiveness is indicated by the 2-tailed 0.000 < 0.05 value, which implies that Ho is rejected.

Table. 5 Effectiveness of lumbar sacral massage on fetal head descent in the first stage of labor

	Group	Mean	elementary school	P
Length of time of decline Head	Intervention	66.10	18.717	0.539
	Control	61.50	13.754	0.540

The data presented in table 5 has evidence that massage lumbar sacred to length of time decline head own mark probability Asymp. Sig. (2-tailed) > 0.05, and Ho is accepted , which indicates that No There is difference significant effectiveness .

DISCUSSION

This study shows that massage lumbar sacred reduces the intensity of painful labor in a way significant compared to the control. The researcher's opinion is that the accompaniment of the midwife and massage lumbar sacking during the active phase for the first time makes the Mother feel comfortable and relaxed, which reduces anxiety and worry about the birthing process. By disrupting the transmission of pain signals, altering how pain is perceived, inducing the release of endorphins or neurochemicals, or regulating emotions, massage effectively lessens labor pain (Smith et al., 2018). Additionally, oxytocin release and the modification of pain and pain perception through sensory nerve activity are associated to massage (Uvnäs-Moberg et al., 2014).

However, lumbar sacral massage does not have a direct impact on the timing of fetal head descent. Researchers think this is because the delivery process for the first stage of the active phase was faster and did not cross the alert line on the partograph in both the intervention and control groups. As a result, lumbar sacral massage does not have a direct impact on the timing of fetal head descent. Because most primiparous women have a negative attitude toward labor pain (Saeedeh Mohamad Beigi & , Mousa Alavi, 2019), researchers assume that choosing respondents with a healthy reproductive age and an average number of parities of no more than two will hasten

the onset of labor. As a result, 54% of primiparas experienced moderate pain, while 46% experienced mild pain (Ningdiah et al. 2022).

According to research, moms can accept pain management during labor by using lumbar sacral massage during the active period of the first stage. For the mother's labor to go smoothly and be a pleasurable experience, effective pain management is crucial. It has been demonstrated that sacral massage effectively reduces pain (Morikawa et al., 2020), increasing maternal satisfaction, (Patyal et al., 2024) reduces fatigue (Abadian et al. 2020) . It has no negative consequences on the fetus, while also having a good impact on how labor is perceived (Akköz Çevik and Karaduman 2020), and reduces the presence of amniotic fluid containing meconium (Hasan Ulubasoglu 2022) . Apart from that, providing non-pharmacological therapy for labor pain can save costs and is easy to do (Nursafitri 2022).

Reducing discomfort and simplifying labor is possible with the help of a lumbar massage technique, which is suitable for midwifery practice. Health workers professionals working in maternity units can use massage This as treatment For reduce pain , shorten time childbirth , and increase satisfaction medium mother give birth to as well as satisfaction with delivery services (Mahin, Kamalifard; Hassanzadeh, Robab, and Mirghafourvand 2022). Massage can also be done involving the husband and family. Moms in the active phase 1 of labor may find that this method, which is safe and effective, lessens the pain associated with contractions (Purwandari et al. 2022). Recent research shows that returning labor pain management to the traditional process has the potential to increase insight into pain and validate therapeutic approaches and optimize treatment (Patel et al., 2024).

Currently, selecting a place of delivery based on facilities and residence status in the same location is one of the considerations for mothers (Laksono et al., 2023), this minimizes the occurrence of births at home which contribute to maternal and infant deaths in Indonesia (Mara I., Agung L. & A., 2023), providing non-pharmacological labor pain management services has significant benefits in the context of client-satisfying labor services.

CONCLUSIONS AND RECOMMENDATIONS

Lumbar sacral massage is a non-pharmacological intervention that is effective in reducing pain and facilitating the first stage of labor but does not significantly impact the length of descent of the fetal head. These studies and empirical evidence support the use of lumbar-sacral massage as part of a pain management strategy in obstetric practice, demonstrating significant benefits in the context of satisfactory maternity care.

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