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Research Article

THE EFFECT OF PELVIC ROCKING ON PAIN REDUCTION DURING THE FIRST STAGE OF LATENT PHASE LABOR AT POASIA COMMUNITY HEALTH CENTER KENDARI CITY

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ABSTRACT

Background:
The latent phase of the first stage of labor, during the initial period of contractions until the cervix dilates to 3 centimeters, can last approximately 6-12 hours. During this phase, the body starts preparing the cervix to open and widen, allowing the baby to pass through the birth canal. One method that can be used to reduce labor pain is pelvic rocking.

Methods: This study employed a true experimental design using a pretest-posttest group design, involving both an experimental group and a control group. The study population consisted of 56 pregnant women. The research instrument used was a pain assessment observation sheet with the Numeric Rating Scale. Data were analyzed using SPSS.

Results: The study showed that, in the experimental group, the average pain level of mothers in the first stage of labor before the intervention was 4.11. After the intervention, which involved pelvic rocking, there was a decrease in the pain scale, with an average pain level of 2.38. In the control group, the pretest pain showed an average pain level of 4.27, while the posttest pain assessment showed an average pain level of 3.83. Based on statistical tests, a p-value (asymp. sig. 2-tailed) of 0.000 < 0.05.

Conclusion: This study states that pelvic rocking has an effect on reducing pain during the first stage of labor. It is suggested that a combination therapy be provided to enhance comfort through pain scale reduction

Keywords: Pelvic Rocking, Labor, Pain, community, health

INTRODUCTION

Stage I of labor begins with the onset of uterine contractions and the cervix reaching full dilation. Stage I is divided into two phases, namely the latent phase and the active phase. The latent phase begins at the onset of contractions that cause gradual thinning and opening of the cervix, specifically 1-3 cm dilation. The contractions or pains during this latent phase are not very strong, allowing the laboring mother to still walk around and communicate. Meanwhile, the active phase involves the descent of the fetal presenting part, which is the dilation of 4-10 cm. The duration of the first stage of labor for a primigravida mother is 12 hours, while for a multipara it is 6 cm. The duration of labor can be caused by a large baby or pelvic abnormalities, resulting in increasing pain and fatigue as the labor process prolongs (1)

The World Health Organization estimates that there are 210 million pregnancies worldwide each year, and 20 million women experience pain during childbirth. About 77.8% of women in France experience labor pain, 61% in the UK, 26% in Norway, while in Japan the figure for labor pain is only 5.2% (2)

According to the data center of the Indonesian Hospital Association, 15 mothers in Indonesia experience childbirth complications, and 21% state that their childbirth was painful due to experiencing severe pain, while 63% did not receive information about the preparations that should be made to reduce pain during childbirth (3)

Based on data from the Kendari City Health Office in (4), the prevalence of childbirth incidents across all health centers in Kendari City from 2020-2022 shows that the highest coverage of childbirth with a target of 100% SPM (Minimum Service Standards) in 2020 was first at the Nambo Health Center with 104.31%, second at the Abeli Health Center with 102.69%, and third at the Poasia Health Center with 100.76%. The lowest coverage of childbirth was at the Benu-Benua Health Center with 84.50%.

In 2021, the coverage of childbirth experienced a decline and did not reach the SPM target of 100%. And in 2022, with the highest coverage of deliveries reaching the SPM target of 100%, namely Puskesmas Nambo, Kandai, Poasia Mokaou, Lepo-lepo, Jati Raya, Mekar, Puuwatu, Labibia, while the lowest coverage of deliveries was at Puskesmas Benu-Benua with 74.68%. Factors that cause labor pain include external environmental factors that can influence pain during labor. A crowded and noisy environment can provide stimuli to the body that can trigger pain. Similarly, when the body is in a state of stress, it will trigger the release of catecholamine and adrenaline hormones, which can result in unbearable pain (Pain causes discomfort in the client. In addition, unmanaged pain will have dangerous effects such as affecting the circulatory system (cardiovascular), which is one of the contributing factors to maternal mortality (5)

There are several efforts that can be made to reduce pain during childbirth, namely medical and non-medical interventions. Medical actions include the administration of analgesics and the injection of anesthesia. Whereas non-medical actions include pelvic rocking (6); (7).

Pelvic rocking is one of the movements that involves rocking the pelvis to the front, back, left, and right sides (Pelvic rocking is usually performed from 36 weeks of pregnancy until the labor stage and waiting for complete dilation. This technique is recommended during labor, especially in the first stage of the latent and active phases, to

enhance relaxation and allow gravity to assist the baby's journey through the birth canal (8). Pelvic rocking is a non-pharmacological technique that is effective, easy to apply, and supports muscle relaxation and the release of endorphins (9)

Based on the initial survey on March 9, 2024, at the Poasia Health Center in Kendari City, targeting mothers in the first stage of latent phase experiencing labor pain, 4 individuals were found who would be given pelvic rocking. Out of these, 3 successfully received pelvic rocking and reported a reduction in pain with a mild pain scale of 1-3. However, 1 other parturient mother stated that after receiving pelvic rocking, her pain did not decrease and remained at a moderate pain scale of 4-6.

Pelvic rocking aims to train the waist and hip muscles, help the baby's head descend into the pelvic cavity towards the birth canal, and can also reduce the pain felt. The objective of this study is to determine the effect of pelvic rocking on pain reduction during the first stage of latent labor.

MATERIAL AND METHODS

Research Design

This study employed a true experimental design with a pretest-posttest control group design. Participants were randomly assigned to either the experimental group, which received the pelvic rocking intervention, or the control group, which did not receive the intervention. This design allowed the researchers to compare pain intensity before and after treatment, ensuring that observed effects were attributable to the intervention.

Population and Sample

The study population comprised 56 pregnant women in the first stage of labor, latent phase, who visited the Poasia Health Center in Kendari City. A total of 36 women were selected as participants based on inclusion criteria, such as being in the latent phase of the first stage of labor and willingness to participate. The sample was recruited using accidental sampling, meaning participants were selected based on their availability and accessibility during the study period.

Inclusion and Exclusion Criteria

Inclusion criteria: pregnant women in the latent phase of the first stage of labor, singleton pregnancy with no complications and willingness to participate in the study
Exclusion criteria: women experiencing obstetric complications or requiring medical intervention and non-cooperative participants.

Instruments

Pain intensity was measured using an observation sheet incorporating the Numeric Rating Scale (NRS), a widely used 0–10 scale to assess subjective pain levels. Observations were conducted during labour visits to the Poasia Health Center by trained healthcare personnel to ensure consistency.

Intervention

The experimental group underwent pelvic rocking exercises during the latent phase of the first stage of labour, guided by trained midwives. The control group received routine maternity care without pelvic rocking exercises.

Data Collection Procedure

1. Initial assessment (pretest) of pain levels using the NRS was conducted before the intervention.
2. Pelvic rocking exercises were performed according to a standardized protocol.

3. A follow-up pain assessment (post-test) was conducted after the intervention.
4. Data were recorded systematically in the observation sheet.

Data Analysis

Data were recorded in ordinal form and analyzed using the paired sample t-test to compare pretest and post-test pain scores within groups. Statistical significance was set at $p < 0.05$. Results were presented in tables and diagrams to illustrate the impact of pelvic rocking exercises on pain reduction during the latent phase of the first stage of labour.

RESULTS

Table 1. Pre-test and Post-test Pain Levels in the Experimental and Control Groups

Group Levels	Pain	Mean	SD	Min	Max	Median
Eksperiment	Pre	4,11	1,06	2	6	4
	Post	2,38	1,00	1	4	2
Control	Pre	4,27	1,11	3	6	4
	Post	3,83	0,8	2	5	4

Based on Table 1, it is known that in the experimental group, before the intervention, the average pain level of laboring mothers in the first stage was 4.11, with the lowest pain level being scale 2 and scale 6 being the highest pain assessment. After the intervention in the form of pelvic rocking, there was a decrease in the pain scale with an average pain level of 2.38, the lowest pain assessment being 1 and the highest pain assessment being 4.

Context: After being given an intervention in the form of pelvic rocking, there was a decrease in the pain scale with an average pain level of 2.38, the lowest pain assessment being 1 and the highest pain assessment being 4.

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Context: After being given an intervention in the form of pelvic rocking, there was a decrease in the pain scale with an average pain level of 2.38, the lowest pain assessment being 1 and the highest pain assessment being 4.

In the control group, the pre-test pain assessment with an average pain level of laboring mothers in the first stage was 4.27, with the lowest pain level being scale 3 and scale 6 being the highest pain assessment. post-test pain assessment with an average pain level of 3.83 for laboring mothers, with the lowest pain level being scale 2 and scale 5 being the highest pain assessment.

Post-test pain assessment with an average pain level of 3.83 for laboring mothers, with the lowest pain level being scale 2 and scale 5 being the highest pain assessment.

Table 2. The Effect of Pelvic Rocking on the Reduction of First Stage Labor Pain

	Levene's Test for Equality of Variances		*T Tes*		
	F	**Sig**	**t**	**df**	**Sig**
Pain Reduction	3,345	072	-7,409	70	000

Based on the statistical test, a p-value (asymp.sig. 2-tailed) of $0.000 < 0.05$ was

obtained, which means H0 is rejected and Ha is accepted. Ha accepted means there is an effect. pelvic rocking on the reduction of first stage labor pain.

DISCUSSION

The results of this study illustrate that every childbirth will experience pain due to the dilation of the cervix and the pressure from the fetus. The pain felt by the mother varies. This is because all the respondents in this study were primiparas who were experiencing childbirth for the first time (10). Study by (11) compared the intensity of labor pain between primiparous and multiparous mothers during the latent phase of labor using VAS, and found that psychological factors such as self-efficacy and fear influenced pain perception. This is in line with the research findings that the majority of respondents were mothers with parity 2, totaling 24 (33.3%), and parity 0, totalying 22 (30.6%).

The intensity of labor pain in primiparas is often heavier than labor pain in multiparas. That is because multipara experience effacement (cervical thinning) along with cervical dilation, whereas in primipara, the effacement process usually occurs before cervical dilation. This process causes the intensity of contractions felt by primiparas to be heavier than those felt by multiparas, especially during the first stage of labor. According to (11) variations in birth experience based on parity, such as the shorter first stage of labor in multiparas, may lead to increased fear or tension in primiparas, which can intensify their perception of pain during the first stage of labor

The research results show that after the intervention of pelvic rocking, there was a decrease in the pain scale with an average pain level of 2.30, with the lowest pain assessment being 1 and 4 being the highest pain assessment. Pelvic rocking is highly recommended for pregnant women with complaints of back pain, especially as they approach labor. Pelvic rocking can help strengthen the muscles and ligaments that support the internal organs of the body. In addition, pelvic rocking can help relieve muscle tension, improve posture, and increase blood circulation, thereby reducing the pain experienced by pregnant women. A study from (12) reported that the combination of pelvic tilt sitting and pelvic floor exercises showed a significant reduction in pain ($p < 0.0001$) and an increase in functional ability of pregnant women. Pelvic rocking can be done in a standing position, lying on the back or side, sitting, or in a half-squat position with hands and knees. This exercise is also accompanied by relaxation techniques that can produce endorphins, resulting in a feeling of comfort.

Pelvic rocking exercises can help in stretching or elongating the pelvic muscles and joints, thereby reducing muscle tension and lowering pain intensity. Research results from (13) showed that pelvic floor rocking can significantly reduce back and hip pain in pregnant women. Forty-six percent of participants experienced pain relief, while the remainder showed a decrease from severe to moderate or mild pain. In addition, movements performed while crawling or standing can reduce the pressure of the fetus head on the pelvic joints, thereby decreasing the intensity of pain experienced by pregnant women when this exercise is performed. This exercise is also accompanied by relaxation techniques through breathing exercises and focusing attention, which are very useful calming the mother's mind and body through the production of endorphin hormones, thereby creating a sense of comfort.

Based on statistical tests, a p-value (asymp.sig. 2-tailed) of 0.000 < 0.05 was obtained, indicating that performing pelvic rocking will produce an analgesic effect by slowing down the speed of nerve conduction, resulting in fewer pain impulses reaching the brain. Pelvic tilting/rocking is a non-pharmacological technique for reducing pain and increasing satisfaction during childbirth (6). Pelvic rocking exercise can strengthen the abdominal and waist muscles. In a study of pregnant women, pelvic tilt training was found to strengthen the lower back and abdominal muscles. This movement also pushes the fetus forward, which helps reduce lower back pain (13)

Pelvic rocking exercise also helps mothers to relax, thereby reducing tension which impacts the reduction of labor pain and improves the digestive process. A quasi-experimental study by (14) showed that pelvic rocking significantly shortened the first stage of labor (p = 0.000), providing quicker, more comfortable childbirth for primigravida mothers. In line with the result study by (15) the use of pelvic floor rocking exercises with a birth ball statistically reduced the duration of labor and decreased pain in the first stage of labor (effect measures: −1.13 for duration, −1.19 for pain; p < 0.00001). Pelvic rocking can strengthen the abdominal and lumbar muscles and reduce pressure on the bladder. It also helps the mother relax and improves digestion (16)

Pelvic floor exercises are slow, rocking or rotating movements that involve coordinating pelvic floor movements and breathing. They involve activating core muscles such as the transversus abdominis, which is crucial for body stability and have been shown to strengthen the abdominal and lumbar muscles, improve well-being, and improve posture. Pelvic rocking is one of the movements that involves rocking the pelvis forward, backward, left, and right. This movement is used to reduce discomfort, and it turns out that the movement provides many benefits. Pelvic rocking is an exercise that involves moving the pelvis in a circular motion during contractions. Swinging and rocking the pelvis forward and backward, side to side, and in circles will feel more relaxed, allowing blood flow to the uterus to circulate smoothly (17).

CONCLUSION

Before the pelvic rocking intervention, the average pain level in the group was 4. After the pelvic rocking intervention, there was a decrease in the pain scale with an average pain level of 2. In this study, there is an effect of pelvic rocking on pain reduction during the first stage of latent labor.

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