

Effectiveness of the rebozo technique with kazo in decreasing labor pain intensity and enhancing labor progression

Efektivitas Teknik Rebozo Menggunakan Kazo terhadap Penurunan Intensitas Nyeri dan Percepatan Kemajuan Persalinan

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ABSTRACT

Background: Prolonged labor occurs due to prolonged labor pain, where the mother feels unable to endure the pain, leading to premature pushing before the cervix reaches full dilation. This condition posed a risk of cervical swelling and labor dystocia. The rebozo technique was a non-pharmacological method used to help manage pain during labor without medication.

Objective: This study aimed to analyze the effect of the rebozo technique using kazo cloth on pain intensity and labor progress at Zhafira Zarifa Clinic, Karawang Regency.

Methods: This study employed a quasi-experimental design with a pretest–posttest two-group design approach. The study sample consisted of 60 multigravida mothers in the active phase of the first stage of labor, selected using accidental sampling. Inclusion criteria: multigravida mothers in labor, active phase cervical dilation of 4-7 cm, single fetus with occiput posterior presentation, uncomplicated pregnancy, and normal fetal heart rate. The experimental group (30 participants) received the rebozo technique using kazo, while the control group (30 participants) practiced breathing relaxation techniques. Pain intensity was measured using the Numerical Rating Scale (NRS), with a pain range of 7–10 as the sample criteria. Data analysis was conducted using the paired t-test in SPSS.

Results: The study found a significant effect of the rebozo technique using kazo on reducing pain intensity and accelerating labor progress, with a $p < 0.001$.

Conclusion: This technique was proven effective in reducing pain and expediting labor. It was expected that this method could serve as an alternative for non-pharmacological pain management during labor.

Keywords: kazo cloth, labor pain, progress of labor, rebozo technique

ABSTRAK

Latar Belakang: Partus lama dapat terjadi akibat nyeri persalinan yang berkepanjangan, di mana ibu merasa tidak mampu menahan nyeri sehingga mendorong untuk mengejan sebelum serviks mencapai dilatasi penuh. Kondisi ini berisiko menyebabkan pembengkakan serviks dan distosia persalinan. Teknik rebozo merupakan metode non-farmakologis yang digunakan untuk membantu mengatasi nyeri selama persalinan tanpa obat.

Tujuan: Penelitian ini bertujuan untuk menganalisis pengaruh teknik rebozo menggunakan kain kazo terhadap intensitas nyeri dan kemajuan persalinan di Klinik Zhafira Zarifa Kabupaten Karawang.

Metode: Penelitian ini menggunakan desain *quasi eksperimen* dengan pendekatan *pretest–posttest two group design*. Sampel penelitian berjumlah 60 ibu bersalin multigravida kala I fase aktif, yang dipilih menggunakan accidental sampling. Kriteria inklusi Ibu bersalin multigravida, fase aktif pembukaan serviks 4-7 cm, janin tunggal dengan presentasi belakang kepala, kehamilan tanpa komplikasi, denyut jantung janin dalam batas normal. Kelompok eksperimen (30 orang) diberikan intervensi teknik rebozo menggunakan kazo, sedangkan kelompok kontrol (30 orang) menggunakan teknik relaksasi napas. Pengukuran nyeri menggunakan skala *NRS (Numerical Rating Scale)*, dengan rentang nyeri 7–10 sebagai sampel penelitian. Analisis data menggunakan uji *paired sample t-test* dalam SPSS.

Hasil: Hasil penelitian menunjukkan bahwa terdapat pengaruh signifikan teknik Rebozo menggunakan kazo terhadap penurunan intensitas nyeri dan kemajuan persalinan dengan nilai p-value ($0,000 < 0,05$).

Kesimpulan: Teknik rebozo menggunakan kain kazo terbukti efektif dalam mengurangi nyeri dan mempercepat proses persalinan. Diharapkan metode ini dapat menjadi alternatif dalam manajemen nyeri persalinan secara non-farmakologis.

Kata kunci: kain kazo, kemajuan persalinan, nyeri persalinan, teknik rebozo

INTRODUCTION

Labor pain is a subjective experience associated with physical sensations resulting from uterine contractions, cervical dilation and effacement, and fetal descent during labor. This pain arises from uterine contractions and cervical dilation. It occurs from the onset of cervical dilation through the second stage. Pain begins as labor begins and increases during the active phase. Physiological reactions to pain include increased respiratory rate, blood pressure, pulse rate, pupil dilation, sweating, and muscle tension.¹

As the uterus begins to move more actively during the early active phase of labor, many mothers begin to experience pain. Longer, stronger, and more frequent contractions can cause anxiety. In the first stage of labor, mothers may experience increased adrenaline secretion, which can cause vasoconstriction and reduce oxygen supply to the fetus. This decreased blood flow weakens uterine contractions, potentially prolonging labor.¹

The World Health Organization (WHO) states that labor that begins naturally carries lower risks in the early stages and continues throughout labor. Babies born naturally generally present in a cephalic presentation at 37 to 42 weeks of gestation, with both mother and baby remaining healthy after delivery. WHO data shows that in 2022, the rate of vaginal deliveries reached 85.1%, while the global rate of prolonged labor was 359 per 100,000 live births.²

Based on the Indonesian Demographic and Health Survey, conducted on 20,591 mothers who gave birth in 33 provinces over the past five years, 85.7% of deliveries in Indonesia were vaginal. In ASEAN, maternal deaths due to prolonged labor reached 125 per 100,000 live births.^{3,4} Data from the West Java Provincial Health Office in 2022 showed a prolonged labor rate of 1.3 percent.⁵ In 2022, Karawang Regency recorded 41,663 deliveries, with 23.3% of them experiencing prolonged labor, which equates to approximately 9,712 cases of prolonged labor.⁶

Prolonged and poorly managed labor pain can lead to the urge to push before the cervix reaches maximum dilation, which can lead to cervical swelling and labor dystocia. This is one factor that can trigger prolonged labor. Hyperventilation due to labor pain can lead to increased blood pressure, decreased intestinal motility, and

increased oxygen demand. This condition can lead to increased catecholamine levels, potentially leading to uterine inertia.⁷

Labor pain can cause placental ischemia, which means the fetus is deprived of oxygen, and uterine contractions become less effective, slowing labor progress. Pain can also trigger anxiety in the mother.⁸ Untreated pain can increase the mother's respiratory rate and heart rate, potentially reducing blood and oxygen flow to the placenta. If left untreated, this condition can be fatal. Therefore, it is crucial to manage and monitor pain during the active phase of the first stage of labor, as this affects the mother's chances of having a healthy, normal birth.⁹

To reduce this pain, various options are available, involving both medication and non-pharmacological methods. Some non-pharmacological techniques that can be used include massage, acupressure, acupuncture, relaxation, counter-pressure techniques, rebozo, and other methods.^{9,10} The rebozo technique helps reduce pain during labor without the use of drugs or traditional medicine. In Mexico, rebozos are worn before, during, and after labor. A rebozo is a long piece of cloth often used by Mexican women to carry babies, carry belongings, or act as a blanket. During labor, the expectant mother wraps the rebozo around her buttocks and pelvis and then rocks it. Many believe the rocking motion of the rebozo helps the mother feel more relaxed. The rebozo technique is an effective non-pharmacological method for managing pain during labor.¹¹

There are several methods within the rebozo technique, one of which is the "shaking the apple tree" technique, in which the rebozo cloth is used to apply pressure by repeatedly shaking or rocking the pelvic area during contractions, focusing pressure on the patient's lumbar spine, sacrum, and coccyx (lumbosacral). The second method, the "shifting" technique, involves a sifting motion by moving the cloth from one side to the other to create movement.¹¹ Rebozo can be seen in Figure 1 and Figure 2.

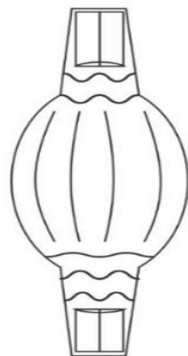


Figure 1. Rebozo Design 150 cm Long and 150 cm Wide



Figure 2. Fabric End Using Handle and Adhesive

Toyobo fabric, known as a high-quality Japanese fabric, has a shinier, softer surface and a tightly woven fiber that makes it opaque. It's also known for being cool, smooth, and not too slippery despite its sheen. Trial results showed that the Kazo cloth was easy for therapists to apply during the Rebozo technique on the abdomen and pelvis, and provided comfort during the procedure. Patients found the Rebozo technique, which involved shifting and shaking the apple, using the Kazo cloth, to be comfortable and effective. Of the 97 women who gave birth normally at the Zhafira Zarifa Clinic in Karawang Regency, their pain scale was assessed using the Numerical Rating Scales (NRS), where the number 0 indicates no pain and the number 10 describes very

intense pain, as many as 65 mothers who gave birth experienced pain with an average value of 8, which is categorized as severe pain but still under control.

Women who are unable to control pain can become stressed, potentially leading to prolonged labor, labor that does not progress, and an increase in the number of caesarean sections without medical indication, but rather at their own request.¹² In a preliminary study at the Zhafira Zarifa Clinic, 23 mothers chose to undergo a caesarean section. based on one's own request (SC APS). Furthermore, the pain experienced during labor can lead to birth trauma and postpartum blues, even though childbirth should be a joyful experience.¹³

Researchers innovated by using the Rebozo cloth called Kazo, a cloth specially designed as an alternative to jarik cloth to reduce the intensity of labor pain. Kazo is made from tayobo material, which has softer, more elastic, and breathable characteristics than traditional cloth, thus providing more comfort for mothers in labor. The special feature of Kazo lies in several aspects: (1) comfortable material Tayobo cloth has a smooth and flexible texture, which allows for more natural movement when used in the Rebozo technique; (2) optimal stretchability of the fabric's elasticity helps distribute pressure evenly on the mother's pelvis, thereby reducing muscle tension and increasing relaxation; (3) good ventilation, the breathable nature of tayobo cloth ensures better air circulation, reducing the feeling of stuffiness and increasing the mother's comfort during labor; (4) strong durability, Kazo is designed to withstand pressure when applied in the Rebozo technique without causing irritation or injury to the mother's skin.

This study aimed to evaluate the impact of the use of the Rebozo technique with Kazo on labor progress at the Zhafira Zarifa Clinic, Karawang Regency, during the period of June 14 to July 2, 2024. With this innovation, it is hoped that the Rebozo method will be more effective in optimizing fetal position, reducing labor pain, and accelerating the labor process more comfortably for the mother.

METHODS

Study design

This study was a quasi-experimental study with a pretest–posttest design with two groups. The intervention design involved two groups, each consisting of 30 respondents, resulting in a total sample size of 60 women giving birth. The intervention group was given the rebozo technique using a kazo during the active phase of the first stage of labor (4–7 cm dilation) for 10 minutes using the Shake the Apples technique. The control group was given a breathing relaxation technique, which involved deep, slow breathing and exhaling slowly for 10 minutes.

Data source and sampling procedure

The subjects were multigravida mothers, namely mothers who had previous childbirth experience, with the consideration that the number of multigravida mothers was higher based on the EDD data when the study was conducted. Sampling was conducted using a non-probability sampling method with an accidental sampling technique, namely respondents were selected based on the willingness and availability of mothers giving birth who came to the study site and met the inclusion criteria during the study period, without a randomization process.

This study was conducted at the Zhafira Zarifa Clinic from June 4 to July 12, 2024. The inclusion criteria included mothers giving birth in the active phase of the first stage with a cervical dilation of 4–7 cm, singleton pregnancies with a vertex presentation, uncomplicated pregnancies, normal fetal heart rate (120–160 beats per minute), and an initial pain level in the range of 7–10 on the pain scale. The exclusion criteria

included mothers taking painkillers and mothers with a history of bleeding, miscarriage, premature rupture of membranes, preeclampsia, or other medical conditions.

Variables of the study

The independent variable in this study was the rebozo technique using a kazo, while the dependent variables included labor pain intensity and labor progress.

Measurement and instruments

Pain intensity was measured using a Numeric Rating Scale (NRS) with a score range of 0–10, classified as no pain (0), mild pain (1–3), moderate pain (4–6), and severe pain (7–10). Measurements were taken before and after the intervention to calculate the difference in pain scores. Labor progress was assessed by observing the frequency of uterine contractions using CTG recorded on a partograph, with the categories progressing if contractions increased, and no progress if contractions did not increase, on a ratio scale.

Data collection

The success indicators of the rebozo technique using kazo in the intervention group were determined based on the intervention objectives, namely, reducing the intensity of labor pain and accelerating the progress of labor through pelvic biomechanical stimulation. The success indicators included: (1) a decrease in labor pain intensity after the intervention based on the NRS score; (2) more effective uterine contractions, characterized by more frequent, stronger, and more regular contractions within 1–2 hours after the intervention, as recorded on the partograph or CTG; and (3) a faster increase in cervical dilation compared to the control group based on partograph recordings.

Meanwhile, indicators of success of the breathing relaxation technique in the control group include: (1) a decrease in the intensity of labor pain after breathing relaxation based on the NRS score; (2) the mother's condition appears calmer, more relaxed, and more cooperative in dealing with contractions; and (3) there are no obstacles or a decrease in the progress of labor, although the rate of progress is not as fast as in the intervention group.

Ethical considerations

This study has obtained ethical approval from the Health Research Ethics Committee of Dharma Husada Health College with number 84/KEPK/SDHB/B/VI/2024.

Data analysis

Data analysis was carried out univariately using descriptive statistics and bivariately using normality tests, paired t-tests, and Wilcoxon tests.

RESULTS

Univariate Analysis

The results of measurements of the intensity of labor pain before the rebozo technique using a kazo.

Table 1. Intensity of Labor Pain Before the Rebozo Technique Using Kazo and Postpartum Relaxation Technique

No	Pain Level	Control Group		Intervention Group	
		n	%	n	%
1	No pain	0	0	0	0
2	Mild pain	0	0	1	3.3
3	Moderate pain	27	90	27	90
4	Severe pain	3	10	2	6.7
Total		30	100	30	100

In Table 1, before treatment was given to the control group, almost all respondents experienced moderate pain (90.0%), and in the intervention group, almost all respondents experienced moderate pain (90.0%).

Table 2. Intensity of labor pain after the rebozo technique using kazo cloth

No	Pain Level	Control Group		Intervention Group	
		n	%	n	%
1	No pain	0	0	0	0
2	Mild pain	9	30	15	50.0
3	Moderate pain	19	63.3	14	46.7
4	Severe pain	2	6.7	1	3.3
Total		30	100	30	100

Based on Table 2, the results obtained after treatment were given to the control group. Most of the respondents experienced moderate levels of pain (63.3%), and in the intervention group, most of the respondents experienced mild pain (50.0%).

Table 3. Intensity of labor progress before the rebozo technique using kazo cloth

No	Contraction Frequency	Control Group		Intervention Group	
		n	%	n	%
1	1 time/ 10 minutes	0	0	1	3.3
2	2 times/ 10 minutes	15	50.0	14	46.7
3	3 times/ 10 minutes	13	43.3	10	33.3
4	4 times/ 10 minutes	2	6.7	5	16.7
5	5 times/ 10 minutes	0	0	0	0
Total		30	100	30	100

Based on Table 3, the results of the contraction frequency in the control group were obtained; half of the respondents experienced a contraction frequency of 2 x/10 minutes in the intervention group, and almost half of the respondents experienced a contraction frequency of 2 times/10 minutes.

Table 4. Intensity of Labor Progress After Rebozo Technique Using Kazo Cloth

No	Pain Level	Control Group		Intervention Group	
		n	%	n	%
1	1 time/ 10 minutes	0	0	0	0
2	2 times/ 10 minutes	2	6.7	0	0
3	3 times/ 10 minutes	19	63.3	4	13.3
4	4 times/ 10 minutes	9	30.0	16	53.3
5	5 times/ 10 minutes	0	0	10	33.3
Total		30	100	30	100

Based on Table 4, the results of the contraction frequency in the control group showed that most respondents experienced contractions of 3 times per 10 minutes. In the intervention group, most respondents experienced contractions 4 times per 10 minutes.

Based on Table 5, the results of the normality test show that all variables are normally distributed, so that a paired t-test can be carried out.

Table 5. Normality Test

Variables		Control	Intervention
Labor Pain	Pre-test	0.321	0.713
	Post test	0.623	0.678
Labor Progress	Pre-test	0.537	0.732
	Post Test	0.736	0.879

Hypothesis Testing

Table 6. Effect of Rebozo Technique Using Kazo and Breath Relaxation on Pain Intensity during Labor

	Labor Pain Intensity	Mean	N	Standard Deviation	Std. Error Mean	p-value
Control	Before	7.30	30	1,055	0.193	0,000
	After	5.77	30	1,278	0.233	
Intervention	Before	7.00	30	1,050	0.192	0,000
	After	5.37	30	1,245	0.227	

**paired t-test*

Table 6 shows changes in labor pain intensity in the control and intervention groups before and after treatment. In the control group, the average pain intensity before treatment was 7.30 → severe pain category (SD = 1.055), decreasing to 5.77 → moderate pain category (SD = 1.278) after treatment. This decrease was statistically significant with a p-value = 0.000. In the intervention group, the average pain intensity before treatment was 7.00 → severe pain category (SD = 1.050), then decreased to 5.37 → moderate pain category (SD = 1.245) after the Rebozo technique and breathing relaxation. This decrease was also statistically significant with a p-value = 0.000. The results of the paired t-test showed that both groups experienced a significant decrease in pain intensity after treatment.

Table 7. Effect of Rebozo Technique Using Kazo and Breath Relaxation on Labor Progress

	Labor Progress	Mean	N	Standard Deviation	Std. Error Mean	p-value
Control	Before	2.57	30	.626	.114	0.001
	After	3.23	30	.568	.104	
Intervention	Before	2.63	30	.809	.148	0,000
	After	4.20	30	.664	.121	

**test paired t-test*

Based on Table 7, the results of the analysis using the paired t-test show that the mean of the control group's average frequency of labor progression before the intervention was 2.57. After the intervention, it increased to 3.23, indicating an increase of 0.66. A p-value of 0.001 ($p < 0.05$) indicates that breathing relaxation techniques have a significant effect on labor progression. The average frequency of labor progression in the intervention group before the intervention was 2.63. After the intervention, it increased to 4.20, indicating an increase of 1.57. A p-value of 0.000 ($p < 0.05$) indicates that the Rebozo technique with a Kazo cloth had a significant effect on labor progression. Thus, both techniques were effective in accelerating labor progression, with the Rebozo technique using a Kazo cloth showing a greater increase than the breathing relaxation technique.

DISCUSSION

Research reveals a link between the use of the rebozo and kazo techniques and the intensity of labor pain. Most respondents experienced mild pain, while almost all

(90.0%) experienced moderate pain. This finding aligns with the results of research by Afrilia EM, which showed that the rebozo technique can improve labor comfort at the Alyssa Medika Primary Clinic in Tangerang City in 2021. With a sample of 30 respondents, the study concluded that primigravida mothers experienced a 1.20-fold reduction in first-stage pain with a p-value of 0.002. Meanwhile, multigravida mothers experienced a 1.05-fold reduction in pain with a p-value of 0.000.¹⁴

Research by Mahita H., the results of the pre- and post-intervention analysis showed a difference in pain scores, with an average of 7.77 and a p-value of 0.000 (<0.05). Based on these findings, it can be concluded that the "shaking the apple tree" technique is effective in reducing pain perception in women in the first phase of labor at the Pasar Kepahiang Community Health Center.¹⁵

According to researchers, women who are unable to manage their pain can experience stress, potentially leading to prolonged labor, labor that doesn't progress, and an increase in the number of cesarean sections without medical indications, but rather at their own request. A total of 23 women in labor chose cesarean sections at their own request (CS APS). Furthermore, labor pain can lead to birth trauma and postpartum blues, a situation that should be a joyful experience for mothers.

The rebozo technique is a non-pharmacological method, meaning without medication, to help manage pain during labor. This method originates from Mexico, where women use rebozos as part of their tradition before, during, and after childbirth.^{11,16} The rebozo is a traditional Mexican long, multi-purpose cloth used in everyday life (carrying babies, carrying items, etc.). In the context of childbirth, the rebozo is applied as a non-pharmacological technique by wrapping it around the mother's pelvis and buttocks and then shaking it rhythmically. This movement aims to relax the pelvic muscles, reduce tension, and facilitate the baby's descent into the birth canal.¹¹

Research shows that the rebozo technique with a kazo is effective in reducing labor pain at the Zhafira Zarifa Clinic. Implementing this technique can improve the quality of labor care and provide a more comfortable experience for mothers giving birth. Analysis showed that before implementing the rebozo technique with a kazo, nearly half of the respondents experienced a contraction frequency of 2 times per 10 minutes. After applying this technique, most respondents experienced a contraction frequency of 4 times per 10 minutes. With a p-value of 0.000 (<0.05), it can be concluded that there is a significant effect between labor progress and the use of the Rebozo technique with Kazo cloth.

Research conducted by Iversen showed that the rebozo technique was used to treat fetal malposition in 7 respondents, assist fetal descent in 3 respondents, reduce pain in 1 respondent, and strengthen contractions in 2 respondents. This study involved multigravida mothers, where the first stage of labor lasted 9 hours in 18 respondents (51.4%), while the second stage of labor lasted 61-100 minutes in 29 respondents (82.9%). Overall, the rebozo technique had positive effects, including increasing comfort during labor.¹⁷

The Rebozo technique is a non-pharmacological method used to speed up the first stage of labor in women in labor. Research has shown that this technique is effective in accelerating labor by optimizing fetal position and reducing tension on the ligaments in the pelvis and uterus, which can lead to less-than-ideal fetal positioning.

In this study, the Rebozo "Shake the Apple Tree" technique was applied, focusing on the pelvic floor ligaments. This technique involves wrapping a long cloth (the Rebozo) around the mother's pelvis and then moving the cloth in a slow but rhythmic shaking motion, resembling shaking a tree to release fruit. This movement aims to

relax tense muscles, improve blood circulation in the pelvic area, and help the baby find a more optimal position for descent into the birth canal.^{18,19}

Tension in the ligaments and a less-than-optimal birthing position can cause the uterus to tilt, making it difficult for the baby to descend into the pelvis. By 36 weeks of gestation, the fetus should have settled into the pelvis in preparation for labor. Therefore, the Rebozo technique, particularly "Shake the Apple Tree," is very helpful in facilitating labor by increasing maternal comfort and supporting a more optimal fetal position.²⁰

According to researchers, the rebozo technique with kazo can be applied during labor to help the muscles and muscle fibers in the uterine ligaments relax, thereby reducing pain during contractions and helping optimize the fetal position for easier descent and strengthening contractions to speed up the labor process.^{21,22,23} Some researchers also state that the rebozo technique can provide positive psychological effects for mothers giving birth, due to the support provided by the birth support team, such as midwives, husbands, and families, when using this technique.^{24,25} The rebozo technique with the kazo can be repeated every 15 minutes during the rest period if there is no visible decrease in pain or progress in labor during its implementation.

CONCLUSION

Based on the results of research on the effect of the Rebozo technique carried out once for 10 minutes using a Kazo cloth, which can reduce pain and labor progress at the Zhafira Zarifa Clinic, Karawang Regency, in 2024, it was concluded that this technique was effective in reducing pain intensity by 1.63 on the NRS scale. In addition, the rebozo technique with Kazo cloth also had a positive effect on labor progress, increasing the frequency of his (uterine contractions) by 1.57. Suggestions for practice places are expected, so that this research can be a reference for reducing pain in labor and labor progress by using non-pharmacological techniques, namely the Rebozo technique using a kazo.

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