



## Rebozo Technique on Pain Intensity in the First Stage of the Active Phase and Length of Labor in Multigravida Mothers, Wanayasa District, Purwakarta Regency, Indonesia

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### ABSTRACT

**Background:** Pain during the first stage of the active phase is one of the main obstacles in the labor process. The rebozo technique, a traditional technique from Mexico, has been proven to be effective in reducing labor pain. This study aims to determine the effectiveness of the rebozo technique on the intensity of pain in the first stage of the active phase and the duration of labor in multigravida mothers in Wanayasa District, Purwakarta Regency. **Methods:** This research used a quasi-experimental design with a pre-test and post-test with a control group design. The research sample was 60 multigravida mothers who were divided into two groups: the intervention group (n=30), who received the rebozo technique, and the control group (n=30), who received standard care. Pain intensity was measured using the visual analogue scale (VAS) and duration of labor was calculated from 4 cm of cervical dilatation to complete dilation. **Results:** The results showed that there was a significant difference in the intensity of pain during the first active phase between the intervention group and the control group (p=0.001). The mean pain intensity in the intervention group was lower than the control group (VAS: 4.2 ± 1.5 vs. 6.1 ± 1.8). There was no significant difference in length of labor between the two groups (p=0.123). **Conclusion:** The rebozo technique is effective in reducing the intensity of pain during the first active phase in multigravida mothers but has no effect on the length of labor.

### 1. Introduction

Pain during the first active phase is one of the most unpleasant experiences for pregnant women. This pain is caused by strong and frequent uterine contractions. Excessive pain can cause fatigue and anxiety and can even hinder labor. Various methods have been used to reduce pain during the first active phase, such as administering medication, relaxation techniques, and other non-pharmacological therapies. The rebozo technique is a non-pharmacological therapy that has been proven effective in reducing labor pain.<sup>1-3</sup>

The rebozo technique is a traditional technique from Mexico that uses a long and wide cloth to apply pressure and rhythmic movements to the pregnant woman's body. This technique can help relieve pain by

relaxing the abdominal muscles, increasing blood flow to the uterus, and positioning the baby optimally. Several studies show that the rebozo technique is effective in reducing pain intensity during the first active phase. However, research on the effectiveness of the rebozo technique in multigravida mothers in Indonesia is still limited.<sup>4-6</sup> This study aims to determine the effectiveness of the rebozo technique on the intensity of pain in the first stage of the active phase and the duration of labor in multigravida mothers in Wanayasa District, Purwakarta Regency.

### 2. Methods

This research used a quasi-experimental design with a pre-test and post-test with a control group design. The research sample was 60 multigravida

mothers who met the inclusion and exclusion criteria. Inclusion Criteria: Pregnant women aged 20-35 years, multigravida mothers with a singleton pregnancy, gestational age 37-41 weeks, cervical opening at least 4 cm, willing to be research respondents. Exclusion Criteria: Pregnant women with pregnancy complications, such as hypertension, gestational diabetes, and preeclampsia; Pregnant women with premature rupture of membranes; Pregnant women with fetal presentation abnormalities; Pregnant women who refuse to be research respondents. The research sample was taken using a consecutive sampling technique.

Respondents were divided into two groups randomly: the intervention group and the control group. The intervention group received the rebozo technique for 30 minutes twice a day for 3 consecutive days. The control group received standard care. Pain intensity was measured using the visual analogue scale (VAS) before and after intervention. The length of

labor is calculated from the cervix opening 4 cm to complete dilatation. Data were analyzed using the t-test to compare pain intensity and duration of labor between the intervention group and the control group.

### 3. Results and Discussion

The majority of respondents (41.7%) were aged 26-30 years, followed by those aged 20-25 years (33.3%) and 31-35 years (25%). A total of 41.7% of respondents had parity 2, 33.3% had parity 3, and 25% had parity 4. The majority of respondents (66.7%) had a high school education, followed by a diploma (8.3%), bachelor (8.3%), and junior high school (16.7%). A total of 91.7% of respondents were housewives, 5% were private employees, and 3.3% were civil servants. The characteristics of the research sample (Table 1) show that the majority of respondents are aged 26-30 years, have parity 2, have a high school education, and work as housewives.

Table 1. Basic characteristics of research subjects.

Characteristics	Category	Total	Percentage
Age	20-25 years	20	33,30%
	26-30 years	25	41,70%
	31-35 years	15	25%
Parity	2	25	41,70%
	3	20	33,30%
	4	15	25%
Education	Junior high school	10	16,70%
	Senior high school	40	66,70%
	Diploma	5	8,30%
	Bachelor	5	8,30%
Occupation	Housewife	55	91,70%
	Private employee	3	5%
	Civil servants	2	3,30%

In the intervention group, mean pain intensity decreased from  $4.2 \pm 1.5$  (pre-test) to  $2.8 \pm 1.2$  (post-test) after receiving the rebozo technique. In the control group, mean pain intensity decreased from  $6.1 \pm 1.8$  (pre-test) to  $5.3 \pm 1.7$  (post-test). There was a statistically significant difference in pain intensity between the intervention group and the control group

(p-value = 0.001). The average length of labor in the intervention group was  $6.2 \pm 1.5$  hours. The average length of labor in the control group was  $7.1 \pm 1.8$  hours. There was no statistically significant difference in length of labor between the intervention group and the control group (p-value = 0.123) (Table 2).

Table 2. Comparison of intervention effectiveness on test variables between groups.

Variable	Intervention group	Control group	p-value
<b>Pain intensity (VAS)</b>			
Pre-test	4.2 ± 1.5	6.1 ± 1.8	0,001*
Post-test	2.8 ± 1.2	5.3 ± 1.7	0,001*
<b>Length of labor</b>	6.2 ± 1.5 hours	7.1 ± 1.8 hours	0,123**

\*Dependent t test; \*\*independent t test, p<0,05.

The results of the study showed that the rebozo technique was effective in reducing pain intensity during the first active phase in multigravid mothers. This is in line with several previous studies that show that the rebozo technique can help reduce labor pain. The pressure of the rebozo cloth helps relax the abdominal and back muscles that are tense during uterine contractions. Tight muscles can cause significant pain, so muscle relaxation can help reduce the pain. Pressure on certain areas of the body can activate the parasympathetic nervous system, which is responsible for the “rest and digest” response. The parasympathetic system triggers the release of neurotransmitters such as acetylcholine, which helps relax tense muscles. Muscle relaxation increases blood flow to tense areas, which helps bring oxygen and nutrients for muscle recovery and relaxation. This can help reduce muscle tension and pain.<sup>7,8</sup>

Pressure can stimulate the release of endorphins, the body's natural hormones, which have an analgesic (pain relieving) effect. Pressure can increase blood flow to the muscles, which helps carry oxygen and nutrients to support muscle recovery and relaxation. Endorphins are hormones produced by the body that have analgesic and anti-inflammatory effects. The release of endorphins can help reduce pain and increase feelings of well-being. Serotonin is a hormone that plays a role in regulating mood and feelings of comfort. Increasing serotonin levels can help reduce anxiety and increase feelings of calm.<sup>9,10</sup>

The pressure of the rebozo cloth can increase blood flow to the uterus and pelvic area. Better blood flow helps deliver oxygen and nutrients to the uterine muscles, which can help reduce pain and fatigue during labor. Better blood flow to the uterus can increase uterine contractions and help labor proceed more quickly. Better blood flow to the uterus also

helps ensure that the baby receives sufficient oxygen and nutrients. Better blood flow helps carry pain-causing metabolites, such as lactic acid, out of tense areas. Better blood flow brings oxygen and nutrients to tense muscles, which helps speed muscle recovery and relaxation.<sup>11</sup>

The twisting and swinging movement of the rebozo cloth can help position the baby optimally in the pelvis. The optimal position allows the baby to move more easily through the birth canal so labor can take place more quickly. The optimal position can help reduce pressure on the uterus and cervix so that labor pain can be reduced. Optimal positioning can help prevent birth complications, such as shoulder dystocia. Pressure can help reduce inflammation in tense areas. Inflammation can cause pain and muscle stiffness. Reducing inflammation can help improve muscle mobility and flexibility, and reducing pain and inflammation can help improve sleep quality, which is important for muscle recovery and relaxation.<sup>12-13</sup>

#### 4. Conclusion

The rebozo technique is effective in reducing the intensity of pain during the first active phase in multigravida mothers but has no effect on the length of labor.

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