International Journal of Engineering Business and Social Science
Vol. 1 No. 03, January-February 2023, pages: 241 -247
e-ISSN: 2980-4108, p-ISSN: 2980-4272
https://ijebss.ph/index.php/ijebss

The Effect of Rebozo Reaction on the Length of Labor in Primiparous Mothers at PMB Deli Serdang in 2021

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Submitted: 08-02-2023 Revised: 12-02-2023, Publication: 20-02-2023

Keywords
Rebozo, Stage I, Length of Labor

Abstract
Prolonged parturition can result in an emergency for both mother and baby. In mothers, it can cause bleeding, shock, and death, while in infants it can cause fetal distress, asphyxia, and caput. One of the efforts to prevent prolonged labor is to use the Rebozo Relaxation Technique which supports labor so that it can run physiologically. The purpose of this study was to determine the effect of rebozo relaxation on the length of labor in Primiparous mothers. This type of research uses a Quasi-Experimental Design research design with a Non-Equivalent Control Group research design. The sample in this study was 40 respondents divided into 20 people in the control group and 20 in the experimental group. Data collection using T-Test and Mann-Whitney Test. The results of the study obtained a p-value (0.00) <α (0.005). With a frequency of 4-8 times and a duration of 20-45 minutes with an intensity of 85%-95%, the total length of labor in the experimental group averaged 334.50 minutes (5.57 hours) and the non-experimental group averaged 478, 75 minutes (7.79 hours). Suggestion for applying Rebozo Relaxation to Mothers of Inpartum Primigravida Stage I Active Phase to prevent prolonged labor and reduce oxytocin injection for primigravida.

1. Introduction

Maternal Mortality Rate (MMR) is a measure of health status in a country which from time to time can provide an overview of the development of public health status and as an indicator in assessing the success of health services and other health development programs. Maternal mortality and morbidity. Maternal and postpartum mothers are still a big problem, especially in developing countries, including Indonesia (Achadi, 2010; Sukfitrianty et al., 2016; Widoyo, 2017; Batubara, Mahayani, & Al Faiq Agma, 2019).

World Health Organization (WHO) states that the death of a mother is the death of a woman while pregnant or within 40 days after the termination of pregnancy due to any cause, regardless of the age of the pregnancy and the actions taken to terminate the pregnancy (Qudus & Regariana, 2019; Munafiah, Astuti, Parada, & Demu, 2020). According to a data report from WHO (2015) noted that every day in 2015 there were 830 mothers who died due to complications of pregnancy and childbirth. WHO also noted that the MMR in Indonesia (2015) was 126/100,000 live births. This figure is still quite high when compared to neighboring countries in the ASEAN region (Batubara et al., 2019).

According to the Ministry of Health (2017) stated that there were 1,712 cases of maternal death during childbirth that occurred until the first semester of 2017. This figure is still far from achieving the 2030 Sustainable Development Goals (SDG's) target agenda, which is 70/100,000 live births.

The MMR reported in North Sumatra in 2012 was 106/100,000 live births and in 2014 the maternal mortality rate was 187 out of 228,947 live births (North Sumatra Health Office). According to the Health Profile of Deli Serdang Regency (2017), it states that the number of MMR is 15 cases/44,656 live births. If converted to 100,000, then in Deli Serdang district in 2017 it was reported that there were 33-34 maternal deaths per 100,000 live births with a percentage of 50% in maternity mothers.

There are two factors that cause maternal death, namely direct and indirect factors. The direct factor of a mother's death is the result of pregnancy, childbirth, or the puerperium and any intervention or inappropriate handling of complications suffered by the mother, such as bleeding, sepsis, hypertension in pregnancy, obstructed labor, complications of unsafe abortion and other causes. other. While the indirect death of a mother is the result of a pre-existing disease or disease that arose during pregnancy that could affect her pregnancy, such as malaria, anemia, HIV/AIDS, and cardiovascular disease. (Citaningtyas & Bukhori, 2015;Kurniati et al, 2016; Nur & Arifuddin, 2017; Rahman et al,. 2017; (Hardianti & Mairo, 2018).

During labor, if there is weakness in uterine contractions, there will be an elongated cervical dilatation. The prolonged cervical dilatation phase is caused by the weakness of the uterine muscles to contract. In addition, the elongated cervical opening is also caused by the strength of the mother's pushing, fetal factors, birth canal factors, maternal psychological factors, namely the level of anxiety and fear in facing childbirth. And if there is an elongated cervical opening, it will result in an extension of time in the first stage, which is called the elongated first stage. This incident is a contributor to maternal and infant mortality.

According to the 2012 IDHS, it was noted that 38.2% prolonged labor was the main cause of maternal and perinatal death, followed by bleeding 35.26% and eclampsia 16.44%. The survey results obtained stated that prolonged parturition could result in an emergency for both mother and baby. In the mother it can cause bleeding, shock and death, while in the baby it can cause fetal distress, asphyxia and caput.

According to Aprilia in Gustyar & Nouyriana, (2017); Rodríguez-Blanque et al,. (2019); (TD, 2019); Baljon et al., (2020); Siregar et al., (2020); (Hidajatunnikma, Setyawati, & Palin, 2020); (Setyaningsih, 2021); (Dwi Arianti, 2021); (Kamilya Baljon et al., 2022) states that in addition to using a partograph, there are several physiological efforts that can be made to prevent prolonged labor such as pregnancy exercise and deep breathing techniques. Other efforts to prevent prolonged labor such as the Rebozo Relaxation Technique which supports labor so that it can run physiologically. Rebozo helps provide a wider pelvic space for the mother so that it is easier for the baby to descend the pelvis and the delivery process will be faster ((Chasse, 2016); Munafiah et al., 2020; (Damayanti & Fatimah, 2021). The Rebozo technique is a technique that uses a shawl with a gym ball as an additional tool to support or perform certain movements ((Cohen & Thomas, 2015); (Morgan, 2021); (Nguyen, Donovan, & Wright, 2022).

The results of research conducted by Munafiah on the Benefits of the Rebozo Technique on the Advancement of Labor in 2020 were obtained from the results of the Mann-Whitney test that there was a difference in effectiveness between the intervention group (rebozo technique) and the control group (pelvic rocking). So it was concluded that the rebozo technique was more effective against cervical dilatation during the first active phase of labor.

Based on the results of a survey conducted at PMB / Jannah Maternity Clinic, from 30 mothers giving birth, 18 of them experienced prolonged labor. So in connection with this problem, researchers are interested in conducting a study entitled "The Effect of Rebozo Relaxation on the Length of Labor in Primiparous Mothers at PMB Deli Serdang 2021". The purpose of this study was to determine the effect of rebozo relaxation on the length of labor in Primiparous mothers. And applying Rebozo Relaxation to Mothers of Inpartum Primigravida Stage I Active Phase to prevent prolonged labor and reduce oxytocin injection for primigravida.

2. Materials and Methods

The method of research used Quasi Experiment with a Non-Equivalent Control Group research design where there was an experimental group, namely the mother group who was given the rebozo relaxation treatment and those who were not treated as a non-experimental group. The population of the study was all primigravida pregnant women with gestational age in the third trimester (36-40 weeks) who underwent a pregnancy examination at the Deli Serdang Independent Midwife Practice (PMB Jannah, PMB Herlina Tanjung, PMB Yatini, PMB Kurnia Ningsih, PMB Asni Sitio and PMB Linda). The research sample was taken by purposive sampling technique, with inclusion criteria of maternal age 20-35 years, Body Mass Index before normal pregnancy (18.5-24.9 kg/m2), weight gain during normal pregnancy (11.5-16 kg), normal fetal heart rate (120-160 beats/minute) and psychological data in the category of low anxiety level.

3. Result and Discussion

The variables measured in this study were the duration of the active phase of the first stage of labor, the length of the second stage and the total length of labor with the unit of time being minutes. The results can be seen in the table below:

Table 1
of Average, SD, and Range of Research Variables

No	Variable	Experiment		Non Experiment	
		Average (SD)	Range	Average (SD)	Range
1	long time ago I active	387,75 (43,54)	260-400	448,75 (41,64)	390-530
2	long time ago II	27,75 (9,66)	15-50	40,00 (8,27)	25-55
3	Total time childbirth	334,50 (44,35)	265-450	478,75 (82,64)	190-595

Description: SD = Standard deviation
n = 20

From Table 1 it can be seen that the duration of the active phase I in the experimental group averaged 387.75 minutes, the standard deviation was 43.54 with a range of 260 - 400 minutes, while the non-experimental group averaged 448.75 minutes, standard deviation 41.64 with a range of 390 – 530 minutes. The length of second stage in the experimental group averaged 27.75 minutes, standard deviation 9.66 with a range of 15-50 minutes, while the non-experimental group averaged 40.00 minutes, standard deviation 8.27 with a range of 25-55 minutes.

The total length of labor in the experimental group averaged 334.50 minutes, standard deviation 44.32 with a range of 265 – 450 minutes, while the non-experimental group averaged 478.75 minutes, standard deviation 82.64 with a standard deviation of 190 – 595 minutes.

Research Variable Normality Test

The results of the measurement of the research variables were tested for normality using the Shapiro-Wilk test. Variables that were tested for normality included the variable length of the first active phase, the length of the second stage, and the total length of labor.

Table 2
Effect of Rebozo Relaxation Normality Test

No	Variable	Shapiro- Wilk value p	
		Experiment	Non Experiment
1	long time ago I	0,136	0,208
2	long time ago II	0,069	0,325
3	Total time childbirth	0,396	0,00

From the results of the normality test, it was found that for the first and second stage variables, the p value > (0.005) both in the experimental group and the non-experimental group, so it can be concluded that the data is normally distributed so that to determine the effect of Rebozo Relaxation on the length of the first and second stages, it is carried out analysis with the T-Test test, namely the independent sample T-Test. Meanwhile, for the variable total length of labor in the non-experimental group, the data were not normally distributed where the p value (0.00) < (0.005) so that the analysis was carried out using the *Mann Whitney*.

Test T-Test

To determine the effect of Rebozo relaxation on long time ago I long time ago II delivery, a T-Test test is carried out as shown in table 3 below:

Table 3
Effects of Rebozo Relaxation on Stage I and Stage II of Labor

Eksperimen	Mean	Std.Deviation	Levenen's Test		t-Test
			F	Sig	Sig. (2-tailed
Stage I					
Eksperimen	307,75	43,543	0,069	0,794	0,000
Non Eksperimen	448,75	41,640			
Stage II					
Eksperimen	27,75	9,662	0,277	0,602	0,000
Non Eksperimen	40,80	8,272			

In the table above, it can be concluded that there is a significant effect between Rebozo relaxation and the length of the first and second stage of labor, where from the results of the T-test, the p-value (0.00) < (0.005) and based on Levenen's test, the p-value (0.794) is obtained.)>α (0.005) in the first stage and p-value (0.602) >α (0.005) in the second stage. This means that the results of the assumption of the same variance or relatively homogeneous data in the first and second stages of labor are obtained, both in the experimental and non-experimental groups.

Mann-Whitney U-Test

To determine the effect of rebozo relaxation on the total length of labor, the Mann-Whitney U-Test was carried out as shown in table 4 below:

Table 4
Effects of Rebozo Relaxation on Total Length of Labor

Treatment	Mean	Std.Deviation	Mann-Whitney U-Test
Total Old Childbirth			
Experiment	334,50	44,334	0,000
Non Experiment	478,75	82,635	

In the table, it is known from the results of the Mann Whitney test that p value (0.00) < (0.005), meaning that there is an effect of rebozo relaxation on the total length of labor.

The Effect of Rebozo Relaxation on the Length of Labor in the First Stage of Primigravida Mothers

Subjects who met the inclusion criteria were 40 people, 20 people in the experimental group and 20 people indices of physical activity and psychological state of research subjects in both groups showed a homogeneous value, namely an average of 6.14 with a range of 4.9-8.5. The length of the first stage starts from the active phase, the length of the second stage and the baby's weight after birth are taken from the medical record in the partograph sheet. In the experimental group, rebozo relaxation was carried out at 36-40 weeks of gestation for primigravida mothers, after observing using a partograph with a frequency of 4-8 times and a duration of 6-12 minutes, the average length of the first stage was 387.75 minutes (6, 45 hours) and, while in the non-experimental group the average was 448.75 minutes (7.48 hours). From these results it can be said that with rebozo relaxation it will shorten the length of the labor process, in other words, if the maximum relaxation technique is achieved, the pain associated with the length of labor will be reduced by 1 hour and 20 minutes. This study is in line with Friedman's theory, the average duration of the first stage of the active phase in nulliparas is 6 hours with a maximum value of 11.7 hours. According to Friedman, the average and minimum length of labor in the active phase of the first stage of labor in the study subjects were the same value. A different study, Ijaiya et al.18 examined 238 maternity mothers aged 16-38 years in Nigeria with a prospective observational method, the result was that the average length of labor in nulliparas was 11.23 hours.

The Effect of Rebozo Relaxation on the Length of Labor in the Second Stage of Primigravida Mothers

After rebozo relaxation was carried out at 30-40 weeks of gestation for primigravida mothers, with a frequency of 4-8 times with a duration of 20-45 minutes with an intensity of 85%-95%, the length of the second stage in the experimental group averaged 27.75 minutes and the non-experimental group an average of 40.00 minutes. There was a time difference where in the experimental group the time was shorter with a time difference of 12.25 minutes. This time is quite important in anticipating the occurrence of bleeding which is also one of the main causes of maternal death. Meanwhile, according to Friedman, the average length of the second stage of labor is 46 minutes. Stage II in nulliparas is limited to 2 hours

In this study, the length of the second stage is shorter than Friedman's theory, this is related to the strength of uterine muscle activity to contract (Bangun, Hutabarat, & Gultom, 2015); (Puspitasari, 2019), conducted an observational study on nulliparous mothers of 35-37 mg gestational age to see the relationship between rebozo relaxation and labor duration. The descriptive results are the average length of the first stage of labor, which is assessed from dilatation of 3 cm to complete dilatation, the average duration; 569 minutes, the average length of the second stage of 45 minutes, and the total length of labor an average of 583 minutes. This study differs because of the different sample criteria, sample size and gestational age, research results (Bloch, 2004); (Thiel, 2010); (Sekhon Inderjit Singh, Lal, Majeed, & Pawa, 2021). Which compares the length of labor between ethnic Kosovars and whites (Caucasians) in London. It shows that the duration of labor in Kosovo ethnic is shorter, namely 5.52 hours, while in Caucasian ethnic it is 7.13 hours (P = 0.015).

The Effect of Rebozo Relaxation on the Total Length of Labor for Primigravida Mothers

After rebozo relaxation was carried out on primigravida mothers, 36-40 weeks of gestation, with a frequency of 4-8 times and a duration of 20-45 minutes with an intensity of 85%-95%, the total length of labor in the experimental group was an average of 334.50 minutes (5 .57 hours) and the non-experimental group averaged 478.75 minutes (7.79 hours), it can be concluded that the total time for primigravida mothers who did rebozo relaxation was much less than the total time for primigravida mothers who did not relax, with time difference 2 hours 22 minutes. (Oktavia, Gandamiharja, & Akbar, 2013); (Bangun et al., 2015); (Sariati, 2016); (Herinawati, Hindriati, & Novilda, 2019); (Herinawati et al., 2019), In other words, this time is closely related to the decreased level of maternal and family anxiety hours and in inactive women 12.6 hours. The total length of labor in active women is 13.4 hours and in inactive women is 14.6 hours.

The results of this study are in accordance with the research of (Abedian, Navaee, Sani, & Ebrahimzadeh, 2017); (TAMA, 2019); (Cintania, 2020); (Fitriasnani & Nikmah, 2020), who examined 20 primigravida pregnant women, aged 25-35 years, grouped into 2, namely women who were not trained. Physical fitness was assessed at 2-4 weeks of gestation and 34-36 weeks, then observed the length of labor. The result is that women who are trained have a shorter first stage of labor than pregnant women who are not trained, namely 11 hours 18 minutes with a span of 3 hours-15 hours 20 minutes, while women who are not trained 13 hours 58.8 minutes with 4-48 hours.

4. Conclusion

Based on the T-Test test in the experimental group and the non-experimental group, the results of the assumption of the same variance or relatively homogeneous data were obtained because the F-test value (0.069) and p-value (0.794) > (0.005). And from the results of the Independent Sample Test, it is known that the value of p (0.00) <α (0.005), it can be concluded that there is an effect of rebozo relaxation on the duration of the first stage of labor in primigravida mothers.

Based on the T-Test test in the experimental group and the non-experimental group, the results of the assumption of the same variance or relatively homogeneous data were obtained because the Fcount test value (0.277) and p value (0.602)>α (0.005). And from the results of the Independent Sample Test, it is known that the value of p (0.00) <α (0.005), it can be concluded that there is an effect of rebozo relaxation on the duration of the second stage of labor in primigravida mothers.

Based on the results of the Mann Whitney test, the p value (0.00) <α (0.005) was obtained. With a frequency of 4-8 times and a duration of 20-45 minutes with an intensity of 85%-95%, the total length of labor in the experimental group averaged 334.50 minutes (5.57 hours) and the non-experimental group averaged 478, 75 minutes (7.79 hours). From the results of the Mann Whitney test, it can be concluded that there is an effect of rebozo relaxation on the total length of labor in primigravida mothers.

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