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The Effect of Postpartum Exercises on Uterine Involution in Postpartum Mothers in Sei Serindan Village, Sei Kepayang Barat District, Asahan Regency

Rostina Afrida Pohan
Midwifery Department, STIKes Sakinah Husada Tanjungbalai, Indonesia

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Corresponding Author:

Rostina Afrida Pohan
STIKes Sakinah Husada Tanjungbalai, Indonesia, Indonesia. email: pohanrose@gmail.com

ABSTRACT

Uterine involution is the process of the uterus returning to its pre-pregnancy shape. Postpartum exercise is a form of muscle training and is very good for postpartum mothers. The shrinkage of the first parity post partum uterus was faster than the second parity post partum in mothers in Sei Serindan village, Sei Kepayang Barat sub-district. The research method is quasi-experimental with pre-test and post-test design. The population of this study was 30 postpartum mothers who gave birth in Sei Serindan Village, West Sei Kepayang District from February to June 2023. The sample size was 30 people using the total sampling technique. Statistical analysis with Independent T test. The results of the study were uterine involution of postpartum women who did not exercise, the average height on the seventh day was 6.93 cm, on the twelfth day the average height was 3.00 cm. Uterine involution of postpartum mothers who did exercise on the seventh day was 4.73 cm high on the seventh day, and 0.33 cm on the twelfth day. There is an effect of postpartum exercise on uterine involution of postpartum mothers with independent t test values with sig: 0.000 <0.05. There is a difference in the effect of mothers who do postpartum exercise and those who do not exercise with a decrease in uterine involution of 2,200 cm on the seventh day and 2,267 cm on the twelfth day. The conclusion of the study is that there is an effect of postpartum exercise on uterine involution of postpartum mothers

Keywords: *Exercise, Involution, Postpartum, Uterine*

1. INTRODUCTION

One indicator of social welfare in a country is the low maternal mortality rate (MMR). It's just that so far cases of maternal mortality in Indonesia still tend to be high compared to neighboring countries. The Indonesian Ministry of Health (Kemenkes) records that the maternal mortality rate in 2022 is around 183 per 100 thousand births. This condition is much different compared to Malaysia with an MMR of 20 per 100 thousand births. The maternal mortality rate in North Sumatra (North Sumatra) throughout 2022 will reach 131 cases and the newborn mortality rate will be 610 cases. This figure has decreased compared to 2021, namely the number of maternal deaths was 248 and the number of infant deaths was recorded 633 cases. Medan ranks third with a total of 6.87% or there are 9 cases. In Labuhanbatu, 10 cases were recorded and in Deliserdang 16 cases. [6]-[7], most of the causes of maternal death during the postpartum period are caused by complications that occur during pregnancy or some time after giving birth. Mostly, these complications develop during pregnancy although some are preventable and treatable.

The postpartum period is the period that begins after the birth of the placenta and ends when the uterine devices return to their pre-pregnancy state. The postpartum period lasts for approximately 6 weeks or 40

days [18]. Uterine involution is the process of the uterus returning to its pre-pregnancy shape. If the uterine involution process cannot run normally, it can result in post partum bleeding in the first 24 hours or bleeding that occurs after 24 hours and a longer postpartum period. There are several ways you can do to help the postpartum recovery process, one of which is by doing postpartum exercises. Postpartum exercise movements that are carried out routinely and regularly will help the body recover the muscles that are tense and stretched during pregnancy and childbirth so that they are tight again.

Based on the initial survey, an explanation was obtained from the village midwife that postpartum exercise had been informed to postpartum mothers. However, direct practice has never been carried out and information is often given to postpartum mothers regarding how to care for babies, breastfeeding, maintaining hygiene during the postpartum period and the need to immediately contact the nearest health worker if you experience a postpartum hemorrhage.

While interviews with 6 mothers who had babies around the age of 2-3 months in Sei Serindan village regarding postpartum exercise, it was concluded that all mothers said they did not know about postpartum exercise and had never done it. Then 4 mothers said there was a difference in the speed at which the lump (uterus) disappeared during the postpartum period of the first and second child, the first child was slower. In the first child, the mother said she was afraid to carry out daily activities, while during the postpartum period for the second child, they immediately carried out daily activities such as washing, cooking, and bathing the child. Whereas 2 mothers of toddlers said they paid little attention to the disappearance of the lump (uterus) in the stomach, but there was a difference in the condition of the dirt (lokhea) that came out, namely the first child took longer to clean than the second child.

Based on the description above, researchers are interested in conducting research on the effect of postpartum exercise on uterine involution in mothers during the postpartum period in the village of Sei Serindan Village, West Sei Kepayang District, Asahan Regency in 2022

2. METHOD

The method used in this study used a *quasi-experimental research design* with *pre-test and post-test types design.* The type of *pre-test and post-test design* with the selection of the experimental group and the control group begins with pre-test measurements and after treatment to the experimental group, both *post-test measurements are carried out.* The experimental/treatment group was given postpartum exercise, and the control group was not given.

The population of this study were all postpartum mothers in the village of Sei Serindan. The number of mothers who gave birth (childbirth) from February to June 2023 was 30 people. Sampling used a *total sampling technique* with the provision that it met the inclusion criteria, namely postpartum mothers who gave birth normally and had no comorbidities and births assisted by health personnel. Analysis of the research data consisted of univariate analysis and bivariate analysis with the *independent T statistical test.*

3. RESULTS AND DISCUSSION

1. Uterine involution of postpartum mothers doing postpartum exercise (experimental group)

Table 1. TFU distribution of postpartum women who do postpartum exercise in Sei Serindan village in February – June 2023

No Resp	Pre-test (cm)	Post test 1 (cm)	Post test 2 (cm)
1	15	6	0
2	17	5	0
3	15	4	1
4	14	3	0
5	16	6	2
6	16	5	0
7	16	5	0
8	14	4	0
9	16	6	2
10	16	3	0

11	14	4	0
12	16	5	0
13	15	5	0
14	17	5	0
15	15	5	0
Average	15,46	4.73	0.33

Based on the table above TFU pre test (first day) postpartum mothers who do postpartum exercise are the highest 17 cm and the lowest 14 cm with an average of 15.46 cm. TFU after the first test (seventh day) is the highest 6 cm and the lowest 3 cm with an average of 4.73 cm. Then the TFU after the second test (twelfth day) is the highest 2 cm and the lowest is not palpable with an average of 0.33 cm.

2. Uterine involution of postpartum mothers who do not do postpartum exercise (control group)

Table 2. TFU distribution of postpartum women who did not do postpartum exercise in Sei Serindan village in February - June 2023

No Resp	Pre-test (cm)	Post test1(cm)	Post test 2 (cm)
1	16	7	2
2	14	6	2
3	16	7	3
4	15	8	3
5	17	8	3
6	16	8	4
7	17	7	3
8	15	5	3
9	14	7	3
10	17	7	3
11	15	7	3
12	14	8	3
13	16	6	3
14	17	6	3
15	15	7	4
Average	15.60	6,93	3.00

Based on table 8, the TFU pre test (first day) of postpartum mothers who did not do postpartum exercise was the highest 17 cm and the lowest 14 cm with an average of 15.60 cm. TFU after the first test (seventh day) is the highest 8 cm and the lowest 5 cm with an average of 6.93 cm. Then the TFU after the second test (twelfth day) is the highest 4 cm and the lowest 2 cm with an average of 3.00 cm.

3. Effect of postpartum exercise on uterine involution

independent t test, with a confidence level of 95% or $\alpha = 0.05$. The criterion for testing the results of hypothesis testing is that if a *sig value* <0.05 is obtained, then $H0_{is}$ rejected and Ha_{is} accepted. If a *sig value* > 0.05 is obtained, then H_{0} is accepted and Ha_{is} rejected.

Table 3. Independent T test results

TFU	F	Sig	T - count	T-table	Sig
Pre test	0.462	0.502	0.345	2.045	0.733
Post test 1	0.349	0.560	6,526	2.045	0.000
Post test 2	2,489	0.126	11,479	2.045	0.000

a. Post test 1 (seventh day)
The obtained T value = 6.526 > 2.045 (T-table) with a sig value = 0.000 <0.05 so that the null hypothesis is rejected and the alternative hypothesis is accepted meaning that there is an effect of postpartum exercise on uterine involution.

b. Post test 2 (twelfth day)
The value of T count = 11.479 > 2.045 (T-table) with a sig = 0.000 <0.05 so that the null hypothesis is rejected and the alternative hypothesis is accepted, meaning that there is an effect of postpartum exercise on uterine involution.

4. Analysis of the differences in the effect of mothers who do exercise and mothers who do not do postpartum exercise on uterine involution.

Table 4. The results of the analysis of the difference in the average TFU

Stage	Group	TFU average	Difference
Pre test	Experiment	15.467 cm	0.133cm
	Control	15,600cm	
Post test 1	Experiment	4.733 cm	2,200cm
	Control	6.933 cm	
Post test 2	Experiment	0.333cm	2.267cm
	Control	3,000cm	

Based on the table above, on the pre-test (first day) the difference in the mean TFU of the mother in the experimental group and the control group was 0.133 cm. At post test 1 (day seven) the average TFU difference between the mother in the experimental group and the control group was 2,200 cm. In post-test 2 (twelfth day) the average TFU difference between the mother in the experimental group and the control group was 2.267 cm.

DISCUSSION

1. Uterine involution in postpartum mothers who do postpartum exercise.

Uterine involution on the first day (pre test) in the group of postpartum women who did postpartum exercise (experimental group) had the highest TFU of 17 cm, the lowest was 14 cm and the average was 15.46 cm. Then TFU post test 1 on the seventh day, which is 6 cm high, 3 cm low and 4.73 cm average. TFU post test 2 on the twelfth day, which is 2 cm high and the lowest is not palpable and an average of 0.33 cm.
Involution of the uterus (TFU) on the first day (pre test) in the group of postpartum women who did postpartum exercise in this study was relatively normal. Whereas TFU on the seventh and twelfth day (post test) was lower than the normal standard. According to Taufik (2008) the TFU on the first day after the urine came out was as high as 2 fingers below the center, in one week the TFU was as high as the mid-symphysis center and two weeks after giving birth the TFU was not palpable.

2. Uterine involution in postpartum mothers who did not do postpartum exercise (control group).

Uterine involution on the first day (pre test) in the group of postpartum women who did not do postpartum exercise (control group) had the highest TFU of 17 cm, the lowest was 14 cm and the average was 15.60 cm. Then the TFU post test 1 on the seventh day is the highest 8 cm, the lowest 5 cm and the

average is 6.93 cm. TFU after test 2 on the twelfth day, which is 4 cm high and 2 cm low and 3.00 cm average.

Involution of the uterus (TFU) on the first day (pre-test) in the group of postpartum women who did not do postpartum exercise in this study was relatively normal. While TFU on the seventh and twelfth day (post test) is also relatively the same compared to normal standards. According to Taufik (2008) the TFU on the first day after the urine came out was as high as 2 fingers below the center, in one week the TFU was as high as the mid-symphysis center and two weeks after giving birth the TFU was not palpable.

3. Effect of postpartum exercise on uterine involution in postpartum mothers

The results of this study indicate that there is an effect of postpartum exercise on uterine involution in postpartum mothers. This can be seen from the results of the *independent T test* at post-test 1 (seventh day) obtained a t-count value of 6.526 > 2.045 (T-table) with a sig value = 0.000 <0.05 . This means that on the seventh day of the puerperium there was a difference between the TFU group of postpartum women who did postpartum exercise (experimental group) compared to the TFU of the postpartum women group who did not do postpartum exercise (control group). It is also supported that the average TFU of the experimental group is 4.73 cm, lower than the average TFU of the control group is 6.93 cm.

Then in the post-test 2 (twelfth day) it also confirmed the effect of postpartum exercise on uterine involution in postpartum mothers. This can be seen from the results of the *independent T test* on post-test 2 (twelfth day) obtained a T-count value of 11.479 > > 2.045 (T-table) with a sig = 0.000 <0.05 . This means that on the twelfth day of the puerperium there was a difference between the TFU group of postpartum women who did postpartum exercise (experimental group) compared to the TFU group of postpartum women who did not do postpartum exercise (control group). It is also supported that the average TFU of the experimental group is 0.33 cm lower than the average TFU of the control group is 3.00 cm.

This is in accordance with the objectives of postpartum exercise, namely accelerating healing, preventing complications, restoring and strengthening the back muscles, pelvic floor muscles and abdominal muscles (Indarti, 2006). Thus it was concluded that there was an effect of postpartum exercise on uterine involution in postpartum mothers.

4. Differences in the effect of mothers who do postpartum exercise and do not exercise on uterine involution.

The results of the analysis in this study showed that the average TFU on the seventh day (post test 1) for mothers who did postpartum exercises (4.733 cm) was lower than mothers who did not do postpartum exercises (6.933 cm). The magnitude of the difference is 6.933 – 4.733 cm = 2.200 cm. Then on the twelfth day (post test 2) the difference is 3.000 – 0.333 = 2.267 cm.

This illustrates that postpartum mothers who do gymnastics have a smaller TFU size than those who don't do gymnastics. In postpartum exercise activities, there is a process of contraction of the abdominal and leg muscles which can suppress the uterine wall. Movements that change body position also help expel the lochia in the uterus, making it possible to facilitate the recovery process of the uterine muscles (PPK Carolus, 2008).

4. CONCLUSION

There is an effect of postpartum exercise on uterine involution in postpartum mothers with independent T-test values after test 1 (seventh day) obtained T-count = 6.526 > 2.045 (T-table) with sig = 0.000 <0.05 and post test 2 (twelfth day) obtained a T-count = 11.479 > 2.045 (T-table) with a sig value = 0.000 <0.05. There was a difference in the effect of mothers who did exercise with mothers who did not exercise on uterine inclusion, which was 2,200 cm on the seventh day (post test 1) and 2, 267 cm on the twelfth day (post test 2).

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