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The Effect of Postpartum Gymnastics on the Decreased Uterine Fundal Height in Postpartum Mothers

Hasliana Haslan[1], Sulfianti[1]

[1]*Bone Science and Health Institute, Indonesia*

**Corresponding Author: Haliana Haslan*
Email: ahasliana@gmail.com

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Abstract

Postpartum gymnastics is exercise that mothers do after giving birth which aims to maintain and increase maternal circulation during the puerperium, as well as to help uterine involution. The purpose of this study was to determine whether there was an effect of postpartum exercise on the decrease in uterine fundal height. The type of research used in this study was quasi-experimental with a pre-test post-test control group design, to analyze the effect and differences in fundal height reduction between the intervention group and the control group. So it was determined the number of samples that met the criteria as many as 20 people. The results showed that based on the results of the mean difference test, there was a significant difference in the decrease in uterine fundal height between pre and post in the postpartum exercise group and not in the postpartum exercise group with p-value <0.05 so it can be concluded that there is an effect of postpartum exercise on the decrease in uterine fundal height. on post-partum mothers. There is an effect of postpartum exercise on the decrease in uterine fundal height in postpartum women in the Ulaweng Health Center Work Area.

Introduction

The postpartum phase begins immediately after the birth of the placenta and concludes when the uterine organs revert to their pre-pregnancy form. The process of regaining health during the postpartum period is critical for women after delivery, since bodily changes, particularly to the reproductive organs, occur throughout pregnancy and childbirth (Ambarwati, 2013). The World Health Organization (WHO) reported that the global maternal mortality rate was 216 (2.16 percent) per 100,000 live births in 2015, or an estimated 303,000 (3.030 percent) maternal deaths, with the highest rate in developing nations at 302,000 (3.020 percent) maternal deaths. The maternal death rate in underdeveloped nations is 20 times that of developed countries, at 239 (2.39 percent) per 100,000 live births, compared to 12 per 100,000 live births in developed countries in 2015.

Indonesia's maternal mortality rate was 305 (3.05 percent) per 100,000 in 2018, according to the Asean Statistical Report Millennium Development Goals 2018. This result is still higher than the ASEAN average of 197 (1.97 percent) maternal deaths per 100,000 people and is also the second highest in Southeast Asia after Laos. In Indonesia, the maternal mortality rate was 390 per 100,000 live births in 2016, 373 per 100,000 live births in 2017, and 334 per 100,000 live births in 2018. (Riskesdas, 2019, accessed on 22 March 2020). According to statistics from South Sulawesi Province's Health Office, maternal fatalities occurred at a rate of 118 per 100,000 live births in 2018, including as many as 59 maternal deaths (51.30 percent). Meanwhile, maternal fatalities were recorded at (72.41 percent) or 138 per 100,000 live births in 2019, which includes 54 maternal deaths (39.13 percent).

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The Bone District Health Office provided the data. In 2017, the number of postpartum moms was around 13,051; in 2018, it climbed to 13,087; and continuing to grow significantly in 2019, reaching 12,826 postpartum women. While data collected in the Ulaweng Health Center's operating region in 2017 indicated that there were 171 postpartum moms. The next year, 2018, the number of postpartum moms was 194, and the following year, 2019, the number of postpartum women was 193. The term "involution" refers to the process through which the uterus recovers to its pre-pregnancy weight of around 60 grams. This procedure starts soon upon placental delivery as a result of smooth muscle contractions. Sub-involution occurs when uterine involution fails to revert to a non-pregnant condition (Rohmawati et al., 2019). Sub involution is characterized by fresh crimson lochia, a gradual fall in the uterine fundus, and flaccid muscular tone leading in bleeding. Postpartum hemorrhage occurs when more than 500 mL of blood is lost via the birth canal after the third stage of labor (Anggraini, 2010).

Bleeding from the area where the placenta was implanted, rips in the delivery canal, and surrounding tissue is a leading cause of maternal mortality (Kainer & Hasbargen2008). Bleeding is a leading cause of maternal mortality during the perinatal period, accounting for around 5%-15% of all births. 50-60% of postpartum bleeding is caused by weakening or a lack of uterine contractions. Postpartum exercise is one of the activities that may be utilized to decrease uterine fundal height (Kusparlina & Sundari, 2019). Postpartum gymnastics is exercise performed by women after childbirth with the goal of maintaining and increasing maternal circulation during the puerperium and assisting uterine involution (Purwati, 2019). The authors are interested in performing study with the title "The Effect of Postpartum Gymnastics on the Decrease in Uterine Fundal Height in the Working Area of UPT Puskesmas Ulaweng Kab. Bones" based on the data and findings of prior studies.

Methods

This is a quantitative research technique with a descriptive approach. Random sampling was used, data collection was conducted utilizing research tools, and quantitative/statistical analysis was conducted with the intent of testing the established hypothesis. The study used a quasi-experimental methodology with a pre-test post-test control group design in order to determine the impact and variations in fundal height decrease between the intervention and control groups.

Results and Discussion

Univariate Analysis

Table 1. Distribution of Respondent Frequency by

Characteristic Respondents	Respondent Events				Total	
	Treatment		Control			
	n	%	n	%	n	%
Age						
< 20 Years	1	10	-	-	1	10
20-35 Years	9	90	10	100	19	90
> 35 Years	-	-	-	-	-	-
Sum	10	100	10	100	20	100
Education						
Elementary School	1	10	-	-	1	5
Junior School	1	10	1	10	2	10
High/Vocational School	6	60	8	80	14	70
PT	2	10	1	10	3	15
Sum	10	20	10	10	3	100
Work						
Not Working	9	90	9	90	18	90

Work	1	10	1	10	2	10
Sum	10	100	10	100	20	100

The decrease in fundus height from day one to day 6 in the intervention group and control group can be seen in the table below:

Table 2. Changes in The Height of Fundus Uteri Before and After postpartum gymnastics

Variable	Intervention Group						Control Group					
	Mean	Median	Mood	Std D	Min	Max	Mean	Median	Mood	Stad D	Min	Max
Pre-Test	12,90	13,00	13,00	0,994	11,00	14,00	12,80	13,00	13,00	0,918	11,00	14,00
Post-Test	5,20	5,00	5,00	0,918	4,07	7,00	6,70	7,00	7,00	0,948	5,00	8,00

Bivariate Analysis

Table 3. TFU Decreased Normality Test in Respondents

Fundus Uteri High Lowering (TFU)	*Saphiro Wilk Test*	
	Postpartum Gymnastics	No Postpartum Gymnastics
Pre Test + Post Test	0,001	0,005

Table 4. Wilcoxon TFU Decline in Respondents Doing Postpartum Gymnastics

Fundus Uteri High Lowering (TFU)	*Wilcoxon Test*			
	Mean	Difference in Mean Score	p-value	Information
Pre Test	12,90	7,70	0,001	There's a difference
Post Test	5,20			

Table 5. Wilcoxon Test TFU Decline in Non-Gymnastics Group Postpartum

Fundus Uteri High Lowering (TFU)	*Wilcoxon Test*			
	Mean	Difference in Mean Score	p-value	Information
Pre Test	12,80	6,10	0,005	There's a difference
Post Test	6,70			

Table 6. TFU Decrease Normality Test in Respondents

Fundus Uteri High Lowering (TFU)	*Saphiro Wilk Test*	
	Postpartum Gymnastics	No Postpartum Gymnastics
Pre Test +	0,152	0,149
Post Test	0,149	0,172

Respondent characteristics

Age-From the results of the study in table 1 shows that the age of most of the respondents in the two groups is 20-35 years. In the treatment group the presentation was 9 people (90%) while the control group had 10 people (100%). According to Prawirohardjo (2009) age has an influence on the uterine involution process, the elasticity of the uterine muscle at the age of 35 years and over decreases, with a decrease in muscle stretch it will affect the shrinkage of the uterine muscle after giving birth, and it takes a long time compared to mothers who have strength and flexibility. better muscle stretch.

Tesfa et al. (2022) stated that the age of 20-35 years of age is the most ideal reproductive group from the health aspect, when viewed from the task and human development, that age is early adulthood which is a period of productive age. At the age of more than 35 years, the elasticity of the uterine muscle decreases, complications often occur before and after birth because the elasticity of the uterine muscle has decreased, causing uterine contractions not optimal. Age is closely related to a decrease in uterine fundal height, the older a person is, the less their reproductive function is, which on average is found at the age of more than 35 years and has given birth more than once. In older mothers, involution is much influenced by the aging process, where the aging process increases the amount of fat (Tesfa et al., 2022)

Education-From the results of the study in table 1, it can be seen that the education of the respondents in the two groups was mostly high school/equivalent, namely in the treatment group 6 people (60%), and the control group 8 people (80%). The level of education is a level in the completion of the formal learning process. The higher the level of education a person is expected to have better knowledge and behavior. because with higher education, more information and knowledge will be obtained, so that changes in behavior for the better are expected to occur. In this study, the educational characteristics of the respondents were mostly high school graduates, so that the mother's knowledge was sufficient. A person's level of knowledge is influenced by education, where the higher a person's level of education, the higher the knowledge possessed, because someone with a higher level of education will more easily receive and understand the information provided. In addition, because of the attention and awareness of the respondents to listen to the information provided by the researcher.

Work-From the results of table 1, it can be seen that the job characteristics of respondents from the control group and mostly in the category of mothers who do not work with a percentage of 90%. In this study, most of the respondents worked as housewives (IRT), thus respondents were more likely to carry out daily activities so as to accelerate the occurrence of uterine involution. A decrease in TFU can occur properly if the contractions in the uterus are good and continuous. Uterine contractions can be increased by the presence of puerperal exercise. Where this occurs from an increase in calcium ions in the extra cells that bind to komudulin, after this komudulin and potassium binds it will increase myosin kinase and phosphorylase occurs on the myosin head which binds to actin so that there is periodic muscle pull so that uterine contractions occur continuously.

Effect of Postpartum gymnastics on the decline of Fundus Uteri Height (TFU)

According to the study's findings, the Independent T-test revealed that the post-test value for the decrease in uterine fundal height was 5.20 in the postpartum exercise group and 6.60 in the non-partum exercise group, with a p-value of 0.002 0.05 indicating that Ho was rejected and Ha was accepted, indicating a significant difference. The average reduction in uterine fundal height between the two groups indicates a significant difference between the postpartum exercise and postpartum groups. This suggests that implementing puerperal gymnastics has a significant effect on the reduction in the height of the uterine fundus.

This is consistent with Munayarokh's (2015) study, which shown that there were variations in TFU six hours postpartum between those who exercised and those that did not. Thus, it may be inferred that postpartum exercise has an influence on the reduction in uterine fundal height in postpartum women. This study also supports Rahmawati (2020) research, which found a significant difference in the reduction in uterine fundal height between pre- and post-tests in the postpartum exercise and early mobilization groups compared to the control group.

This study is also supported by Widyastuti's (2013) research, which indicates that there is a significant difference in the rate of TFU reduction in primiparous postpartum women who exercise versus those who do not exercise, indicating that postpartum exercise has an effect on the rate of TFU reduction in postpartum women. By doing postpartum gymnastics, you may strengthen and tighten the abdominal muscles, which will indirectly encourage the uterine muscles to work properly and prevent postpartum bleeding. This study also supports the hypothesis that an exercise program during postpartum might help strengthen muscles that have been overworked throughout pregnancy and delivery, as well as enhance postpartum moms' health and fitness. The result of this investigation is that an exercise program conducted during puerperium will repair practically all of the body's organs, and this involution process is most visibly seen in the uterine apparatus (Andriyani et al., 2017).

Postpartum exercise done on postpartum moms improved physical recovery ninefold as compared to women who did not get postpartum exercise intervention (Mascarenhas, 2017).

Physical activity in the form of postpartum gymnastics has a positive effect on the physical rehabilitation of postpartum moms. As shown by the reduction in uterine fundal height, physical healing involves uterine involution (Surtiati & Nawati, 2010). It is possible to repair the uterus's suppleness and rigidity by doing puerperal gymnastics (Sukaryati, 2011). Puerperal activity stimulates uterine contractions, hastening the reduction in uterine fundal height. Giving postpartum gymnastics has an influence on the rate at which the uterine fundus in postpartum women decreases in height. As a result, women who engage in postpartum exercise see a quicker decline in uterine fundus height (TFU) than those who do not.

Conclusion

It is desired that health professionals may expand outreach to the population, particularly postpartum moms, in order to assess the impact of postpartum exercise on uterine fundal height reduction and to apply postpartum exercise to postpartum mothers. The community is encouraged to participate in health counseling to get understanding about postpartum gymnastics and to become familiar with the motions and processes for implementing postpartum gymnastics. It is anticipated that it will undertake research on the impact of postpartum exercise using a bigger sample size and a greater variety of factors.

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