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THE RELATIONSHIP BETWEEN POSTPARTUM EXERCISES AND DECREASED UTERINE FUNDAL LEVEL IN POSTPARTUM MOTHER

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ABSTRAK

Masa Nifas merupakan masa yang dimulai setelah plasenta lahir dan berakhir ketika alat kandungan kembali seperti keadaan semula. Proses involusi uterus dipengaruhi oleh beberapa faktor, diantaranya senam nifas. Apabila proses involusi terganggu, maka dapat menyebabkan terjadinya subinvolusi uterus. Tujuan penelitian ini untuk mengetahui hubungan senam nifas dengan penurunan tinggi fundus uteri pada ibu nifas hari ke 3. Desain penelitian menggunakan quasy eksperimen kelompok perlakuan dan kontrol. Populasi sebanyak 15 ibu nifas multipara yang melahirkan di TPMB Ida Priyanti dan 15 ibu nifas multipara yang melahirkan di TPMB Sidemiarti. Pengambilan sampel menggunakan teknik *Purposive sampling*. Data dikumpulkan dengan lembar observasi senam nifas dan penurunan TFU dengan jari. Analisa data menggunakan uji *Chi-Square lalu dilanjutkan dengan uji Mann-Whitney.* Hasil penelitian didapatkan ibu nifas yang melakukan senam nifas (40%) mengalami penurunan tinggi fundus uteri cepat dan ibu nifas yang tidak melakukan senam nifas (30%) mengalami keterlambatan penurunan tinggi fundus uteri. Analisis uji Mann-Whitney menunjukkan nilai signifikansi <0,001 berarti senam nifas dapat mempengaruhi penurunan tinggi fundus uteri ibu nifas pada hari ke 3. Senam nifas dapat mempengaruhi penurunan tinggi fundus uteri dikarenakan senam hari ke 3 terdapat latihan pengembalian rahim pada bentuk dan posisi semula dan mengurangi mulas pada ibu nifas.

Kata Kunci : Ibu Nifas; Penurunan Tinggi Fundus Uteri; Senam Nifas

ABSTRACT

The postpartum period begins after the placenta is born and ends when the womb returns to its original state (before pregnancy), which lasts approximately six weeks or 42 days. It is a period of adjustment for the mother to a new role, during which the mother experiences physical and psychological changes. Several factors, including postpartum exercise, influence the uterine involution process. If the involution process is disturbed, it can cause uterine subinvolution. The aim of this research was to determine the relationship between postpartum exercise and a decrease in uterine fundal level in postpartum mothers on the third day. This research uses a quasi-experimental treatment group and a control group. The population was 15 multiparous postpartum mothers who gave birth at TPMB Ida Priyanti and 15 multiparous postpartum mothers who gave birth at TPMB Sidemiarti. Sampling used a purposive sampling technique. Data was collected using postpartum exercise observation sheets, and the uterine fundal level was decreased with the use of the fingers. Data analysis used the Chi-Square test and then continued with the Mann-Whitney test. The research findings are significant, indicating that postpartum mothers who engaged in postpartum exercise (40%) experienced a rapid decrease in uterine fundal level. In contrast, postpartum mothers who did not engage in postpartum exercise (30%) experienced a delay in decreasing uterine fundal levels. The Mann-Whitney test analysis further underscores the importance of these findings, showing a significance value of <0.001. It suggests that postpartum exercise can significantly influence the reduction in uterine fundal height in postpartum mothers on the third day. This research concludes that postpartum exercise can influence a decrease in the level of the uterine fundus because postpartum exercise on the third day includes exercises to return the uterus to its original shape and position and reduce heartburn in postpartum mothers.

Keywords : *Postpartum Exercise; Postpartum Mother; Decreased Level of the Uterine Fundus*
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INTRODUCTION

The postpartum period, also known as Puerperium, is a crucial phase that commences after the birth of the placenta and concludes when the uterine organs revert to their pre-pregnancy state. This period, lasting approximately six weeks or 42 days, marks a significant adjustment for the mother to her new role, accompanied by both physical and psychological changes. During this time, the reproductive organs gradually return to their pre-pregnancy state, with one of the notable changes being involution. Uterine involution is the process of restoring the uterus to its pre-pregnancy condition.

The Maternal Mortality Rate (MMR) is a vital target of the global Sustainable Development Goals (SDGs), aiming to reduce it to 70 per 100,000 live births by 2030. However, the current MMR in ASEAN stands at 235 per 100,000 live births (ASEAN Secretariat, 2020). In Indonesia, the number of maternal deaths recorded in 2020 was 4,627, marking an 8.92% increase from the previous year (Ministry of Health of the Republic of Indonesia, 2021). These figures highlight the pressing need for interventions to reduce maternal mortality rates.

Bleeding caused during the postpartum period, one of which is bleeding caused by the slight decrease in uterine involution, returns to its original shape. The slight decrease in uterine involution is caused by several things, namely the continuous contraction and retraction of the myometrial muscle, which puts pressure on the blood vessels where the placenta is attached (Rahmadaniah, 2020).

Several factors influence the decrease in uterine fundal level in postpartum mothers, namely postpartum exercise, early mobilization, nutrition, frequency of breastfeeding, psychology, age, and parity factors. One factor that can influence the process of reducing the level of the uterine fundus is doing postpartum exercises. Postpartum exercise is defined as a form of early ambulation for postpartum mothers whose aim is to facilitate the involution process. The benefits of postpartum exercise include helping to heal the traumatized uterus, stomach, and hip muscles and speeding up the return of these parts to their standard shape, helping to normalize joints that have become loose due to pregnancy and childbirth, and preventing further weakening and stretching (Zubaidah et al., 2021).

Midwives can make efforts to reduce morbidity rates during the postpartum period and accelerate uterine

involution by teaching postpartum mothers postpartum exercise movements. These movements aim to stimulate the uterine muscles to function optimally so that postpartum bleeding will not occur and the uterus will be restored to its original position. Before doing postpartum exercises, warm up first, such as breathing exercises and moving your legs and arms in a relaxed manner.

From this background, researchers are interested in researching "The relationship between postpartum exercise and a decrease in the level of the uterine fundus in postpartum mothers on the third day.

METHODS

The type of research used in this research is quantitative research, with a quasi-experimental research design. In this study, researchers used two groups, namely the treatment group in the form of postpartum exercise and measuring the level of the uterine fundus at TPMB I. For the control group, postpartum exercise was not carried out; only the height of the uterine fundus at TPMB S was measured. This research was carried out in May-June 2023. The population was 55 people at TPMB I and intervention was carried out on postpartum mothers on days one to three, including 5 SC, five primi, and 15 multiparas, while TPMB S For the control group, postpartum exercise was not carried out; only the height of the uterine fundus on days one to three, consists of 7 SC, one grande-multi, seven primi, and 15 multiparas. The number of samples in this study were all postpartum mothers who gave birth at TPMB I who met the inclusion criteria 15 people and postpartum exercise intervention will be carried out on days one to three, and the number of control group samples at TPMB S who met the inclusion criteria 15 people only measure the uterine fundal height on the first to third day. Sampling used purposive sampling. The research instrument uses an observation sheet. The analysis used is univariate analysis, which is used to obtain frequency distributions and bivariate analysis. This research has received ethical approval from No. 705/VII/KEPK POLKESMA/2023.

RESULTS

This research was carried out at TPMB I and TPMB S Tumpang sub-district, Malang Regency, in May-June 2023. The results of research regarding the relationship between postpartum exercise and a decrease in uterine fundal level in postpartum mothers on the third day at TPMB I and TPMB S, Malang Regency in 2023, using a purposive sampling

technique, were obtained from a sample of 30 people, including 15 people in the treatment group and 15 people in the control group because researchers only studied multiparas postpartum mothers who gave birth normally.

Table 1 Age Frequency Distribution of Postpartum Mothers at TPMB Ida Priyanti and TPMB Sidemiarti in 2023

Age	Treatment Group		Control Group	
	f	%	f	%
20-35 years	12	80	13	86.7
≥ 35 years	3	20	2	13.3
TOTAL	15	100	15	100

Table 1 shows that almost all respondents in the treatment group were aged 20-35 (80%), and almost all respondents in the control group were aged 20-35 (86.7%).

Table 2 Frequency Distribution of Postpartum Mothers' Education at TPMB Ida Priyanti and TPMB Sidemiarti in 2023

Education	Treatment Group		Control Group	
	f	%	f	%
Elementary School	3	20	3	20
Junior High School	2	13.3	3	20
Senior High School	9	60	9	60
Bachelor Degree	1	6,7	0	0
TOTAL	15	100	15	100

Based on Table 2, it is known that most of the respondents in the treatment group had a high school education (60%), and most of the control group respondents had a high school education (60%).

Table 3 Frequency Distribution of Postpartum Mothers' Occupation at TPMB Ida Priyanti and TPMB Sidemiarti in 2023

Work	Treatment Group		Control Group	
	f	%	f	%
Housewife	11	73.3	7	46.6
Farmer	0	0	2	13.3
Private Office	2	13.3	3	20
Self-employed	0	0	3	20
Teacher	2	13.3	0	0
Total	15	100	15	100

Table 3 shows that most of the treatment group respondents (73.3%) worked as housewives, and almost half of the control group respondents (46.6%) worked as housewives

Table 4 Cross Tabulation of Decrease in Uterine Fundal Level (UFL) for Postpartum Mothers on 3rd Day at TPMB Ida Priyanti and TPMB Sidemiarti in 2023

Reduction of UFL on 3rd Day	Treatment Group		Control Group		Total	
	f	%	*f*	%	*f*	%
Slow	0	0	9	60	9	30
Normal	3	20	5	33.3	8	26.7
Fast	12	80	1	6,7	13	43.3
Total	15	100	15	100	30	100

Based on Table 4, it is known that almost all respondents (80%) of postpartum mothers who did postpartum exercise experienced a rapid decrease in uterine fundal level. For postpartum mothers who did not do postpartum exercise, almost half of the respondents (60%) of postpartum mothers experienced a delay in decreasing fundal uterus level.

Because the result of the Chi-square test does not meet the Chi-square test requirements, the researchers

continued with the Mann-Whitney test because the variables were on an ordinal categorical scale.

Table 5 Mann-Whitney Test Results

		N	*Mean Rank*	*Sum of Ranks*
Decreased UFL	Postpartum Exercise	15	21.90	328.50
	No postpartum exercise	15	9.10	136.50
	Total	30		

Based on table 5, it is known that the significance value shows <0.001, so statistically, there is a relationship between postpartum exercise and a decrease in uterine fundal level. The Mann-Whitney test compares the rankings between groups. Those who did postpartum exercise had a higher rating than those who did not do postpartum exercise (21.90 vs 9.10).

DISCUSSION

Characteristics of Respondents Based on Age

These research findings are significant as they reveal that almost all of the mother's characteristics, particularly age, were consistent. In the treatment group, 12 respondents (80%), and in the control group, 13 respondents (86.7%) were aged between 20-35 years. This age bracket is crucial as it is directly related to the mother's level of developmental maturity and experience. For instance, adolescent mothers, due to their age, can experience higher health risks, developmental conflicts, and role conflicts related to parenting.

The respondent's age plays a pivotal role in determining their physiological and psychological status during pregnancy until just before delivery. At the ideal age range of 20-35 years, a subjective maturity occurs, significantly influencing the respondent's health status. It is a positive aspect as it aligns with Notoatmodjo (2018) findings that age can influence a person's level of knowledge. The older they are, the wiser they become, accumulating more information and experiences, thereby increasing their knowledge.

The researcher's opinion on age can make a difference in research results because age can make matters difficult and more manageable for respondents. After all, it can determine the level of maturity in logical thinking. Usually, respondents do postpartum exercise because of their scientific and logical reach in responding to healthy needs during the postpartum period. Ideally, the older the mother is, the more mature and logical thinking she will give to form positive behavior for doing postpartum exercise.

Characteristics of Respondents Based on Education

Our research findings reveal a robust correlation between education and maternal health. The majority of mothers in both the treatment and control groups had a high school education. This education empowers mothers to pay more attention to health problems, not just for themselves but also for their families. It equips them with the knowledge and understanding needed for self-care and children's health and helps them adapt to their essential roles, making it easier for them to navigate the world around them.

Education has the transformative power to eliminate negative views on childbirth issues and the role of mothers. It provides the fundamental primary education that supports the delivery and reception of new information. More importantly, it instills a positive understanding that can reshape the respondent's concept of personality. The accumulation of knowledge through education can lead to the formation of healthy behavior, thereby improving the physiological and psychological health of respondents.

As Notoatmodjo (2014) asserts, education is a crucial tool for instilling understanding and purpose, fostering positive understanding, attitudes, and actions in society. It is not just about imparting knowledge but about effecting positive changes in human behavior and attitudes by mitigating negative behavioral and socio-cultural factors. It underscores the importance of education in shaping a healthier future for mothers and their families.

The researcher's opinion on the level of education of respondents creates an urge to obtain information and do something that can maintain a healthy status by speeding up recovery during postpartum. On the other hand, respondents with low education will likely be reluctant to look for, get, or do something new, so they will assume that postpartum exercise is not beneficial for postpartum health.

Characteristics of Respondents Based on Occupation

Our research findings reveal significant insights into the work characteristics of postpartum mothers. The majority of the treatment group, 11 respondents (73.3%), and nearly half of the control group, seven respondents (46.6%), were engaged in housework. The nature of work is a direct result of past and current compensation, with education and personality traits playing a pivotal role in job determination.

The potential for changing jobs is possible because of the respondents' adaptive process to the conditions they are experiencing. Prosperous work will make it easier for respondents to search for, receive, and understand messages originating from subjects and objects.

The research opinion of respondents' work is an economic characteristic based on sociodemographic studies; respondents with non-formal sector employment status find it more challenging to maintain and develop healthy behavior due to stressful conditions. Neglect of health forms a routine inability for respondents to resolve health problems during postpartum with the inability of respondents to do postpartum exercises. In contrast, respondents with formal sector jobs find it easier to maintain and develop healthy behavior due to the fulfillment of welfare.

The relationship between postpartum exercise and a decrease in uterine fundal level in postpartum mothers on 3rd day in TPMB Malang Regency.

Based on the research results, there were no postpartum mother respondents who experienced a delay in decreasing the level of the uterine fundus. A small percentage of respondents, 3 (20%) postpartum mothers, experienced a decrease in fundal level to normal, and almost all 12 people (80%) postpartum mothers experienced a decreased level of the uterine fundus quickly.

After giving birth, a mother's body will enter a recovery period and slowly return to its original condition. In theory, if a birthing mother ambulates, it can facilitate uterine involution (the return of the uterus to its original shape). One of the activities recommended for mothers to do after giving birth is postpartum exercise, namely the first day's rib-breathing exercises and ankle movement exercises; the second day's exercises are abdominal, leg, and chest muscle exercises, and finally, the third day's exercises namely, exercises to return the uterus to its original shape and position, as well as excellent and light posture exercises (Rini, 2017).

The results of this study are the same as research conducted by Syaflindawati (2017) regarding the relationship between postpartum exercise and reduced uterine involution in postpartum mothers on 1st-3rd days at RSIA CICIK Padang, where it was found that 65.1% of postpartum mothers did postpartum exercise.

Postpartum exercise researchers believe it influences the reduction in uterine fundal level. This can be seen in the process of decreasing the uterine fundal level of mothers who do postpartum

exercise more quickly than those who do not. In mothers who do postpartum exercises, the lochea expels smoothly, so the process of decreasing the level of the uterine fundus runs normally.

The decrease in uterine fundal height is also supported by the age of postpartum mothers, where postpartum mothers who experience a rapid decrease in uterine fundal height are, on average, no more than 35 years old and not less than 20 years old. It is supported by the theory of Walyani and Purwoastuti (2017), where mothers who are over 35 years old have reduced muscle elasticity, and complications often occur before and after birth because the elasticity of the uterine muscles has decreased, causing uterine contractions not to be optimal.

Decreased level of the uterine fundus in postpartum mothers on 3rd day who did not do postpartum exercises.

Based on the research results, almost half of the nine people (60%) experienced a slight decrease in uterine fundal height, a small portion of the respondents, five people (33.3%) mothers, experienced an average decrease in uterine fundal level, and a small portion of the respondents, one person (6.7%) postpartum mother, experienced a rapid decrease in uterine fundal height at TPMB S Malang Regency In theory, if a birthing mother ambulates, it can facilitate uterine involution (the return of the uterus to its original shape).

The results of this research are almost the same as research conducted by Saputri, Gurusinga, and Friska (2020) regarding the effect of postpartum exercise on the uterine involution process in postpartum mothers. The results were ten people (66.6%) in the fast category and five people (33.3%), while there were none in the slow category (0.00%). Meanwhile, nine people (60.6%) did not do postpartum exercise, four people (26.6%) were found to be slow, and two people (13.3%) were fast.

The researcher's opinion, whether the level of the uterine fundus decreases quickly or slowly in postpartum mothers in TPMB I and S, Malang Regency, can be seen from the observation sheet where there is a rapid decrease in uterine fundal level in postpartum mothers who do postpartum exercise and a slight decrease in uterine fundus level in mothers who are not doing postpartum exercises due to lack of activity so that the process of expelling the lochea is not smooth so that the process of decreasing the level of the uterine fundus is also hampered.

Relationship between postpartum exercise and decrease in uterine fundus level in postpartum mother on 3rd day.

The research results found that the proportion of postpartum mothers with a slight decrease in uterine fundal level was more significant in mothers who did not do postpartum exercise (60%) compared to postpartum mothers who did postpartum exercise (0%).

Statistically, the Chi-Square test shows p-value = 0.000 or $p < 0.05$ then, followed by the Mann-Whitney test with a significance value of p-value <0.001, which means that there is a relationship between postpartum exercise and a decrease in TFU in postpartum mothers on the third day in TPMB I and TPMB S Malang Regency.

The results of this research are the same as those of Rati (2020) regarding the benefits of postpartum exercise in terms of postpartum maternal uterine involution. In that study, it was concluded that postpartum exercise reduced the level of the uterine fundus. The decrease in the uterine fundal level was faster in the intervention group compared to the control group.

Postpartum exercises offer a practical and effective way to speed up the decrease in the uterine fundus. By stimulating the uterine muscles to function optimally, these exercises can help prevent postpartum bleeding and return the uterus to its original position. They also aid in the healing of the traumatized uterus, stomach, and hip muscles and expedite the return of these parts to their standard shape. Additionally, they help normalize joints that may have become loose due to pregnancy and childbirth and prevent further weakening and stretching.

Conducted postpartum exercise is a form of early ambulation for postpartum mothers whose aim is to stimulate contraction of the abdominal muscles, which will help reduce the height of the uterine fundus. However, in reality, what is found in postpartum exercise is that it is rarely done because, firstly, they do not know how to do postpartum exercise. Secondly, because they are too happy according to the postpartum stage of taking on all they think about is their child. Thirdly, mothers, after giving birth, are afraid to do much movement, afraid of the stitches coming out and the pain. Suppose the mother has stitches in the perineum. Postpartum exercises should be done within 24 hours after giving birth regularly every day. After 6 hours of everyday labor, the mother can carry out early mobilization, including postpartum exercises.

In the opinion of researchers based on research result and theory (Zubaidah et al., 2021) there is no gap, there is a relationship between postpartum exercise and a decrease in the level of the uterine fundus because doing postpartum exercise will stimulate uterine contractions, so that uterine contractions get better, where increasing the work of the uterine muscles will result in the muscles in the uterus being squeezed, causing the muscle tissue to lack substances. -Substances are needed so that muscle tissue can shrink, the size of the uterus will also decrease, and the release of the lochea becomes smoother, which affects the process of uterine involution.

CONCLUSION

Based on the significant findings of our research, which explored the relationship between postpartum exercise and a decrease in uterine fundal level in postpartum mothers on the third day at TPMB Malang Regency, we can draw the following conclusions:

1. Encouragingly, almost all postpartum mothers who engaged in postpartum exercises on the third day experienced a rapid decrease in uterine fundal level, accounting for 12 people (80%).
2. Almost half of the respondents were postpartum mothers who did not do postpartum exercises on the third day and were experiencing a slow decline: 9 people (60%).
3. There is a relationship between the decrease in uterine fundal level in postpartum mothers on the third day who did postpartum exercises at TPMB I Malang Regency.

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