Omni Health Journal
e-ISSN: 3047 - 6216
Volume 2 Issue 4: page 97-101, October 2025
DOI: 10.65277/ohj.v2i4.118

Original Research

The Effect of Postpartum Exercise on Uterine Involution among Postpartum Mothers on the Third Day

Dewi S[1*], Sumarmi[2], Anita Kartini H[1], Ernawati[1], Riska Nuryana[3], Hermadin[4], Marhaeni Ulfa[5]

[1]Diploma Midwifery Study Program, Stikes Tanawali Takalar, Takalar, Indonesia
[2]Department of Nursing, Faculty of Medicine and Health Sciences, Universitas Islam Negeri Alauddin Makassar, Indonesia
[3]Medical Study Program, Faculty of Medicine, Universitas Negeri Gorontalo, Indonesia
[4]Nursing Study Program, Stikes Tanawali Takalar, Takalar, Indonesia
[5]Undergraduate Midwifery Study Program, Stikes Tanawali Takalar, Takalar, Indonesia

Article Info

Article History:
Received: 2025-07-07
Revised: 2025-07-19
Accepted: 2025-10-31

*Corresponding Author:
Dewi S, Diploma Midwifery Study Program, Stikes Tanawali Takalar
Email: dewi.wiwi@gmail.com

Abstract

Background: Six weeks or forty-two days after childbirth is known as the postpartum phase (peueperium), during which the reproductive organs gradually recover similar to those that occurred before pregnancy.
Objective: The description of postpartum gymnastics is known to decrease TFU on the third day.
Methods: Quasy Experimental, Total population of 43 postpartum mothers, total sample of 30 mothers taken by accidental sampling technique.
Results: Postpartum mothers who had participated in the gymnastics group and those who did not participated had the same results in terms of normal uterine involution, as many as 15 respondents (50.0%) each.
Conclusion: Postpartum exercises performed regularly in accordance with the recommended method can strengthen the contraction of the uterine muscles. This causes ischemia by pressuring blood vessels, thereby reducing blood flow to the uterus and accelerating the shrinkage of uterine tissue.

Keywords: Post partum mothers; post partum exercises; uterine lowering

Introduction

The postpartum period (puerperium) is the stage following childbirth that lasts up to six weeks or forty-two days. During this time, the reproductive organs gradually return to their pre-pregnancy condition. Uterine involution refers to the physiological process through which the uterus decreases in size and regains its natural shape after delivery (Ariani et al., 2023). According to WHO research, there are 223 maternal deaths for every one hundred thousand live births worldwide. The United Nations Sustainable Development Goals (SDGs) aim to reduce the global maternal mortality rate from 339 in 2000 to fewer than 70 by 2030; however, this target remains far from being achieved. It is estimated that half of maternal deaths during the postpartum period occur within the first 24 hours after childbirth, mostly due to postpartum hemorrhage. Furthermore, 60% of all maternal deaths during pregnancy are estimated to occur after delivery, and one of the contributing factors to postpartum hemorrhage is the failure of uterine involution (BPS, 2024).

According to the Directorate General of Public Health, as reported in Indonesia's Health Profile (Ministry of Health of the Republic of Indonesia, 2022), there were 4,554,868 postpartum mothers in Indonesia in 2019. In 2020, this number increased to 4,984,432, with 78.88% having access to postpartum health services. Complete postpartum visits (KF3) were highest in DKI Jakarta Province, followed by West Java and North Kalimantan, while Papua, West Papua, and Central Java had the lowest rates. Sixty-two percent of Indonesia's 34 provinces achieved at least 80% coverage of postpartum visits, with overall improvements of 60% in 2019 compared to 2018. In 2020, among 155,636 postpartum mothers, 28.9% experienced postpartum complications, and 90.88% achieved postpartum visit (KF3) coverage. In the same year, district-level coverage reached 101.05%. Postpartum care includes the evaluation of lochia and other vaginal discharges, breast health assessment, counseling on exclusive breastfeeding, and health education related to maternal well-being. In addition, monitoring of vital signs such as body temperature, respiration, pulse, and blood pressure is routinely conducted (South Sulawesi Provincial Health Office, 2023).

Data from the South Sulawesi Provincial Health Office show a decrease in maternal deaths, with 121 cases in 2022 compared to 475 in 2021. In 2020, 57.24% of maternal deaths occurred during the postpartum period, compared with 17.38% during childbirth and 25.42% during pregnancy. Moreover, 22.60% of these deaths were due to bleeding (South Sulawesi Provincial Dinkes, 2023). According to the Bantaeng Health Office, the maternal mortality rate (MMR) in 2023 was 118 per 100,000 live births, of which postpartum deaths accounted for 66.67% and bleeding for 22.2% of all deaths. A study by Lucy Pratiwi (2023), titled The Effect of Postpartum Gymnastics on Uterine Involution in Postpartum Primigravida Mothers at NMC Clinics in 2023, found that uterine involution among postpartum primigravida mothers was significantly influenced by postpartum gymnastics ($p < 0.05$). The research concluded that uterine involution occurs more rapidly in postpartum mothers who consistently perform postpartum exercises compared to those who do not.

Based on these data, maternal health during the postpartum period remains a critical public health concern. Postpartum hemorrhage, often associated with delayed uterine involution, continues to be a major cause of maternal mortality. Therefore, it is necessary to further study interventions such as postpartum exercise that may accelerate uterine involution and reduce the risk of complications. This study aims to determine the effect of postpartum exercise on uterine involution among postpartum mothers on the third day.

Methods

Study Design

This study employed a quasi-experimental research design with a pre–post descriptive survey approach. The study consisted of two groups: an intervention group that performed postpartum exercise for 10 days and a control group that did not receive the intervention. This design was chosen to assess the effect of postpartum exercise on uterine involution among postpartum mothers.

Samples

The population in this study included all postpartum mothers in the Puskesmas working area, totaling 43 individuals. Sampling was conducted using an accidental sampling technique, and a total of 30 postpartum mothers were selected as respondents. Participants were included if they were within the postpartum period, were physically able to perform postpartum exercises, and provided informed consent.

Instruments

The primary research instrument was a structured questionnaire specifically developed to measure mothers' knowledge and experiences related to postpartum exercise. The questionnaire consisted of questions about the frequency and type of exercise performed and observations regarding uterine changes. In addition, direct measurement of uterine fundal height (TFU) was conducted as the main parameter to evaluate uterine involution.

Data Collection

Data collection was conducted through a descriptive survey approach combined with a quasi-experimental design. The research took place within the Puskesmas working area. Using the accidental sampling technique, 30 postpartum mothers were selected from the total population of 43. Data were collected through direct observation and interviews using the questionnaire, allowing the researchers to obtain accurate information regarding postpartum exercise practices and uterine involution conditions. TFU measurements were taken daily for 10 days to monitor uterine decline.

Data Analysis

Data were analyzed using both descriptive and inferential statistical methods. Descriptive analysis was performed to summarize respondent characteristics and TFU measurement results, which were presented in frequency distribution tables showing the percentage of uterine decline among mothers who performed postpartum exercises compared to those who did not. To test the effect of postpartum exercise on uterine involution, the Chi-Square test was applied with a significance level of $p < 0.05$. This statistical test was used to determine whether there was a significant difference in uterine involution outcomes between the intervention and control groups.

Ethical Considerations

Ethical approval for this study was obtained from the Health Research Ethics Committee of Stikes Tanawali Takalar, under the issued research permit. Prior to data collection, permission was obtained from local health authorities, and all participants were informed about the objectives, procedures, and benefits of the study. Participation was voluntary, and respondents were assured of anonymity and confidentiality throughout the research process.

Results

Based on Table 1, out of 30 respondents, 15 people (50%) were over 35 years old, 13 people (43.3%) were between 20 and 30 years old, and the percentage of least 20 years old was two respondents (6.7%).

Table 1 Respondents by Age

Age	n	%
< 20 years old	2	6,7
20-35 years old	13	43,3
> 35 years old	15	50,0
Sum	30	100

Source: SPSS Processed Data, 2024

Table 2 as many as ten (33.3%) respondents had a junior high school education, fourteen (46.6%) respondents had a high school education, and four respondents graduated from elementary school (13.3%), and at least two (6.8%) respondents with a university degree.

Table 2 Respondents Based on Education

Education	n	%
SD	4	13,3
JUNIOR	10	33,3
SMA	14	46,6
S1	2	6,8
Sum	30	100

Source: SPSS Processed Data, 2024

Table 3 states that of all respondents, more than half have multipara parity, 18 (60.0%) respondents, and the lowest have primipara parity, 12 (40.0%) respondents.

Table 3 Respondents Based on Parity

Parity	n	%
Primipara	12	40,0
Multipara	18	60,0
Sum	30	100

Source: SPSS Processed Data, 2024

Based on Table 4, out of a total of 30 respondents divided into groups that did and did not do postpartum exercises, on the third day there were 15 respondents (50.0%) who did postpartum exercises and experienced normal uterine shrinkage, while 15 other respondents (50.0%) experienced slow uterine shrinkage. On day 7, as many as 15 respondents (50.0%) who performed postpartum exercises experienced normal uterine involution, while the other 15 respondents (50.0%) experienced slow uterine involution even though they had done postpartum exercises.

Table 4 Reduction of the Uterus of Postpartum Mothers

Group	Uterine Decline			
	Usual		Slow	
	n	%	n	%
Day 3				
Do	15	50,0	15	50,0
Not Doing	15	50,0	15	50,0
Day 5				
Do	15	50,0	15	50,0
Not Doing	15	50,0	15	50,0
Day 7				
Do	15	50,0	15	50,0
Not Doing	15	50,0	15	50,0
Sum	30	100	30	100

Source: SPSS Processed Data, 2024

Discussion

In this study, a total of 15 respondents (50.0%) who performed postpartum gymnastics experienced slow uterine involution, while 15 others (50.0%) also experienced normal uterine involution. The same proportion (50.0%) was found among mothers who did not perform postpartum gymnastics. On the seventh day, 15 respondents (50.0%) in the exercise group experienced normal uterine involution, while 15 respondents (50.0%) still showed slow involution. These results indicate that postpartum gymnastics did not produce a measurable difference in uterine involution during the observed period. Uterine involution refers to the physiological process in which the uterus returns to its pre-pregnancy size through the contraction of uterine muscles. The pituitary gland secretes the hormone oxytocin, which aids in hemostasis, compresses blood vessels, and strengthens uterine contractions. This mechanism supports the shrinkage of the uterus, which typically decreases by about 1 to 2 cm of uterine fundal height (TFU) per day. Although the results of this study did not show significant differences between groups, theoretically, uterine contraction and the rate of TFU reduction are influenced by the frequency and consistency of postpartum exercise (Walyani, E. S. & Purwoastuti, 2017).

TFU assessment between the third and tenth days postpartum generally shows a decrease in uterine height as the number of postpartum days increases. This process occurs due to involution, which begins immediately after the expulsion of the placenta (Mastiningsih, P., Agustina, 2019). Regular postpartum exercise can increase the frequency and strength of uterine contractions, helping the uterus return to its normal size more quickly. Each additional daily session of postpartum exercise may accelerate this process by stimulating smooth muscle activity and improving blood flow to uterine tissues (Mastiningsih, P., Agustina, 2019). Performing postpartum exercise as recommended also enhances muscle tone, improves circulation, and supports uterine ischemia through the compression of blood vessels, thereby promoting the reduction of uterine size (Murniati, 2023). The postpartum phase involves physiological adaptations that restore the body to its pre-pregnancy state. Measured through TFU, uterine involution reflects this recovery process. Previous research supports that postpartum women who perform postpartum exercises experience faster uterine involution than those who do not (Ignasensia D, 2023). Similarly, Sari & Firawati (2023) reported that postpartum mothers who received postpartum gymnastics intervention had nine times better physical recovery than those who did not. These findings emphasize that uterine involution is a vital component of postpartum physical rehabilitation and that postpartum exercises significantly aid this recovery. Muscle contraction is stimulated by chemical, electrical, and mechanical action potentials that activate myosin and actin proteins, enabling uterine muscle shortening and promoting the involution process.

The postpartum period is crucial for maternal recovery, during which several physiological changes occur, including uterine involution (Siregar, 2020). One effective intervention to accelerate this process is postpartum exercise, a series of light body movements designed for mothers after childbirth. The purpose is to improve blood circulation, strengthen pelvic floor muscles, and help the uterus regain its normal size and position (Sulistyawati, 2018). The movements stimulate the contraction of abdominal and uterine muscles, facilitating the reduction in uterine fundal height (Purnamasari et al., 2021). Research has consistently shown that mothers who perform postpartum exercises regularly experience faster TFU reduction compared to those who do not (Kusumawati & Nurcahyani, 2022). Furthermore, light physical activity such as postpartum gymnastics also stimulates oxytocin production, enhancing uterine contractions and supporting the lactation process (Rahayu et al., 2020). Although the present study's results were consistent across all measurement days, showing no statistical difference between groups, these findings do not necessarily contradict previous research. The lack of variation may be attributed to the limited sample size, short observation period, or similar physiological conditions among participants. More sensitive measurement tools and longer follow-up durations are recommended to capture gradual changes in uterine involution more accurately.

This study was limited by the small sample size and short observation period of seven days, which may have reduced the ability to detect meaningful differences in uterine involution between groups. Additionally, TFU reduction was categorized qualitatively (normal or slow) without precise centimeter measurements, which could affect data sensitivity. Future studies should employ larger samples, longer follow-up, and more accurate quantitative measurements of TFU.

Conclusion

This study examined the effect of postpartum exercise on uterine involution among postpartum mothers. The results showed that of the 30 respondents, 15 (50.0%) who performed postpartum exercises experienced normal uterine involution, while the remaining 15 (50.0%) who did not perform exercises experienced slow uterine involution. These findings indicate that postpartum exercise did not show a significant difference in uterine involution within the short observation period. However, the results

contribute to a better understanding of the potential role of postpartum exercise in supporting maternal recovery. Regular postpartum exercise may still provide physiological benefits, such as improving circulation, strengthening uterine muscles, and enhancing overall postpartum well-being.

References

Ariani, P., et al. (2023). *Physiology of postpartum period*. The Nuances of Brilliant Dawn.

Badan Pusat Statistik (BPS). (2024). *Maternal and infant mortality rates*. https://www.bps.go.id

Dinas Kesehatan Provinsi Sulawesi Selatan. (2023). *Health profile of South Sulawesi Province 2022*.

Ignation, D. H. Y. (2023). *Postpartum and breastfeeding midwifery care*. Rena Cipta Mandiri.

Kementerian Kesehatan Republik Indonesia. (2022). *Health profile of the Republic of Indonesia 2022*. Data and Information Center of the Ministry of Health. https://pusdatin.kemkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/Profil-Kesehatan-Indonesia-2019.pdf

Kusumawati, A., & Nurcahyani, S. (2022). Postpartum gymnastics accelerates the decrease in the height of the uterine fundus on the 3rd day postpartum. *Journal of Healthy Midwifery, 8*(1), 27–35.

Luci, P. (2023). The effect of postpartum gymnastics on uterine involution in postpartum primigravida mothers at the NMC Clinic in 2023. *EDU Midwifery Journal (BEMJ), 6*(1).

Mastiningsih, P., & Agustina, Y. C. (2019). *Textbook for midwifery care for postpartum and breastfeeding mothers*. In Media.

Murniati. (2023). *Midwifery care for postpartum and newborn based on local wisdom*. Adanu Abigail.

Purnamasari, L., Utami, R., & Widodo, A. (2021). Postpartum gymnastics as an effort to accelerate uterine involution in postpartum mothers. *Indonesian Journal of Midwives, 7*(2), 75–81.

Rahayu, S., Damayanti, R., & Setyowati, D. (2020). The role of the hormone oxytocin in postpartum gymnastics on the recovery process of the uterus. *Journal of Nursing and Midwifery, 10*(3), 210–217.

Salsa Sasmita Ismail, Mulyadi, M., & Watung, G. I. (2025). The Relationship between Sleep Quality and Physical Fatigue in the Elderly. *Omni Health Journal*, *2*(1), 17-21. https://doi.org/10.65277/ohj.v2i1.79

Sari, L. P., & Firawati, F. (2023). The application of postpartum gymnastics as an effort in the process of uterine involution in postpartum mothers. *Community Development Journal: Journal of Community Service, 4*(5), 11026–11030.

Siregar, L. (2020). The process of uterine involution in the postpartum period and influencing factors. *Scientific Journal of Midwifery, 10*(1), 33–40.

Sugeha, K. A. P. ., Watung, G. I., & Novitasari, D. (2025). The Relationship of Parenting with Physical Independence in Preschool Children. *Omni Health Journal*, *2*(1), 22-27. https://doi.org/10.65277/ohj.v2i1.80

Sulistyawati, A. (2018). *Postpartum midwifery care*. Nuha Medika.

Syahrir, A., Aditya Nihali, M. R., Apriana, R., Agung Ayu , G., & Ariani, P. P. (2025). Implementation of Screen Time Danger Education to Increase Mothers' Knowledge about Screen Time in Children Aged 2-5 Years. *Omni Health Journal*, *2*(2), 28-32. https://doi.org/10.65277/ohj.v2i2.50

Walyani, E. S., & Purwoastuti, T. E. (2017). *Midwifery care during postpartum and breastfeeding*. New Library Press.