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THE INFLUENCE OF POSTPARTUM EXERCISE ON LEVEL OF AFTERPAINS IN POSTPARTUM WOMEN

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ABSTRACT

Introduction: Postpartum period is the period after childbirth up to 6 weeks or 42 days, during the postpartum period, the reproductive organs slowly undergo changes, namely uterine involution, which can cause post-partum pain. Postpartum exercise is a form of early ambulation for postpartum women aimed at facilitating the involution process. **Objective**: The purpose of the research is to investigate the influence of postpartum exercise on the level of afterpains. **Method**: This research using the 'quasi-experimental' method, with a one-group pretest-posttest-design approach. The sample used in this study was 10 respondents at the Permata Bunda Hospital. The sample were taken by purposive sampling The collecting data tool used a standard of operational procedure chcek list of post-partum exercise and observation sheet on pain. Data analysis using paired samples t-test. **Result:** The result showed the majority of post-partum mother's pain decreased from moderate pain to mild pain 8 (80%), from severe pain to moderate pain 2 (20 %). There is an effect of postpartum exercises on the level of afterpains in postpartum women p-value of 0.00> 0.05. **Conclusion:** The results of the respondent's pain level after being given postpartum exercise during the posttest the pain level decreased.

Keywords: *Afterpains, Exercise, Postpartum*

INTRODUCTION

The puerperium (post-partum) is the period starting after the birth of the placenta and ending when the bladder returns to its pre-pregnancy state, which lasts for 6 weeks or ± 42 days (Warsiki, 2024). In the postpartum period, uterine involution occurs which is accompanied by contractions in the uterus so that it can cause pain during contractions or is termed afterpain (Astutik et al., 2021)

According to the World Health Organization (WHO), complications in postpartum women are the leading cause of death in women (75%) women who died from complications of pregnancy and childbirth were about 295,000 in 2017. the main causes of maternal death are severe bleeding after childbirth, most of which occur after childbirth, hypertension during pregnancy which can cause preeclampsia and eclampsia, infections and complications from childbirth and unsafe abortion. All women need access to care and support from the weeks after delivery (Safitri, 2020)

According to data from the World Health Organization (WHO) in 2019 the maternal mortality rate is very high, every day around 810 women die from preventable causes related to pregnancy and childbirth. According to WHO, the most common cause of maternal death is caused by postpartum hemorrhage where every year there are 14 million mothers or 11.4% suffer from Hemorogic postpartum (HPP) worldwide. In developing countries, the incidence of HPP is as much as 60% in 100 thousand maternal deaths every year due to poor labor management, especially in grade 3 which can cause excessive blood loss (Amraeni, 2021)

Based on the 2021 Indonesian Health Profile Data, the number of deaths from year to year is increasing. It can be seen from the number of maternal deaths in Indonesia in 2021, which

amounted to 7,389 compared to 2020, which was 4,627 deaths (Adelita, et al. 2024)The profile of the Grobogan District Health Office, the maternal mortality rate in Grobogan Regency increased from 31 cases in 2020 to 84 cases in 2021 and in 2022 there were 21 cases, maternal deaths in Grobogan Regency occurred mostly in mothers aged 20-35 years (77.9%), mothers with elementary school education (42.9%), died during puerperium (66.2%), hypertension (39.0%), unknown time of death (40.3%), and experienced death in the hospital (85.7%) (Rahmadhanti et al, 2023)

Afterpains are pains (cramps and mules) that can be caused by uterine contractions. This lasts for 1 hour to 3-4 days post-partum and often occurs in multiparous mothers, because the uterus that is fully stretched twice tends to loosen, Pain felt by postpartum women makes it uncomfortable is a serious problem, and will have an impact in the form of health problems, can interfere with the care of postpartum women and their babies , this must be handled immediately by nurses in order to increase the comfort of postpartum women (Hartati et al., 2021)

The highest incidence of afterpains in Indonesia is 90.3% experienced by postpartum women aged 20-32 years, while the lowest incidence of afterpains 58.4% occurs in postpartum women aged 16-21, this is due to high parity is a concomitant decrease in uterine muscle tone, in contrast to primiparous women whose uterine tone is still strong and the uterus continues to contract without intermittent relaxation (Phillippi, 2024)

Postpartum exercise is a form of early ambulation in postpartum women, one of which aims to facilitate the process of involution , while the absence of a smooth involution process has adverse effects on postpartum women such as continued bleeding and the absence of a smooth involution process.

Data obtained at Permata Bunda Purwodadi Hospital are: postpartum women amounted to 1080 in 2023. From the results of preliminary studies conducted by researchers at Permata Bunda Purwodadi Hospital, there were 11 respondents, when researchers conducted postpartum visits in the postpartum room (Dewi Shinta) to respondents, 11 postpartum women said they experienced afterpains and had never done postpartum exercises. Based on background behind the researcher is interested in conducting a study by answering the question “is the any effect of postpartum exercise on the level of afterpains in postpartum women at the Permata Bunda Hospital?”

METHODS

This study uses a type of quantitative research with the "quasi experiment" method, with a one *group pretest-posttes design* approach, Regarding Sugiyono, the experimental research method can be interpreted as a research method that can be used to seek the effect of certain treatments (Aditiany et al., 2021). Hidayat delivered this type of pre experiment research is carried out in a way that before being given treatment or treatment the variable is observed or measured first (*pretest*) after which treatment or treatment is carried out and after treatment measurement or observation (*postest*) (Fauziah & Hidayat, 2022).

The population used in this study were all postpartum women who experienced afterpains at Permata Bunda Purwodadi Hospital, 11 respondents in total. The sample is a snippet or part of the population to be studied or it can also be said that the population is in the form (miniature population) (Sari et al., 2024). The sampling technique used was total sampling where the entire population was sampled in this study as many as 11 respondents, one postpartum mother was not made a research respondent, on the grounds that the mother experienced severe uncontrolled pain so that the postpartum mother could not do postpartum exercises and the postpartum mother was not willing to be a respondent, so the postpartum mother did not meet the research inclusion criteria. The sample in this study was 10 respondents.

Data Collection techniques with Standar Operational Procedures of post-partum exercise check list sheet to measures post-partum women in performing post-partum exercise and pain scale observation sheet to observed pain scale before and after post-partum exercise. The statistical test used

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was paired sample T-test method on the pretest and posttest it produces a significance value of 0.00. In the significance value (2-tailed) <0.05. This shows that there is a significant effect on the difference in treatment given to each variable.

RESULTS

Table 1 Characteristics of Respondents Based on Age

Characteristics responden	Frequency (%)
Age	
20	1 (10%)
23	1 (10%
24	1 (10%)
25	2 (20%)
26	1 (10%)
27	1 (10%)
29	1 (10%)
38	1 (10%)
39	1 (10%)
20	1 (10%)
Education	
Elementary School	2 (20%)
Junior High School	1 (10%)
Senior High School	4 (40%)
Higher Education	3 (30%)
Total	10 (100%)

Based on table 1, the age of the most postpartum woman respondents is 25 years old (20%) and 4 people (40%) with senior high school.

Table 2 Frequency Distribution of Afterpains Level of Postpartum Mothers (Pre-Post-partum Exercise)

Afterpains level	Frequency (%)
Pre partum exercise	
Mild Pain	2 (20%)
Moderate Pain	6 (60%)
Severe Pain	2 (20%)
Post-partum exercise	
Mild Pain	8 (80%)
Moderate Pain	2 (20%)
Total	10 (100%)

Based on table 2, most postpartum women respondents experienced moderate pain before doing postpartum exercises, namely 60% and after doing postpartum exercise in mild pain, namely 8 (80 %)

Table 3. Frequency Distribution of Postpartum Mother's Afterpains level (Pre-post Postpartum Exercise)

Pain Level Before Postpartum Exercise	Pain Level After Postpartum Exercise
4	2
5	3
7	4
4	3
5	2
3	2
4	2
5	3
3	1
8	6

Based on table 3, the respondents of postpartum mothers after the most postpartum exercises experienced a decrease from moderate pain to mild pain, namely 6 people (80%).

Table 4. The Effect of *Postpartum* Exercise on the Level of *Afterpains* in *Postpartum* Mothers

Statistic	Value
Mean	2.000
Standard Deviation	0.667
95% CI (Lower - Upper)	1.523 – 2.477
t-value	9.487
df	9
p-value	< 0.001

The data obtained from hypothesis testing using the paired sample T-test method p no pretest and posttest resulted in a significance value of 0.00. At a significance value (2-tailed) <0.0 5, in the table (0.00 <0.05), the pre and post test samples show a significant difference between the initial variable and the final variable. This shows that there is a significant

effect on the difference in treatment given to each variable.

DISCUSSION

Level of Afterpains of Postpartum Mothers

Research that has been conducted on postpartum women at Permata Mother Hospital Purwodadi, a total of 10 respondents, dominated by the age of 20-29 years as much as (80%). The researcher's analysis that most respondents are mature age groups that are very good at reproductive health so that at that age there are very few high risks in pregnancy and childbirth. The researcher's assumption is supported by Manuaba (2008) that pregnancy and childbirth at the age of 20-35 is an age group of optimal production health. This is in accordance with the theory that the healthy reproductive age of women, which is between 20 years and 35 years, is ranked as the most commonly experienced (Hidayat, 2014).

Based on table 4.2, the characteristics of respondents of normal postpartum women at Permata Mother Hospital Purwodadi based on the level of education as the majority of high school 4 respondents (40%). From the characteristics of postpartum women's education, the most respondents were high school graduates with 4 respondents (40%). Researchers assume that this level of education is classified as middle class, so that providing information about medical and nursing actions is easy and effective. The higher the education obtained by a person, the easier it will be for that person to receive information from outside both orally and in writing. The level of education in this study affects the willingness, compliance, and seriousness of respondents in doing postpartum exercises. This assumption is supported by the statement (Mahmudi et al., 2023)

Tests that have been carried out by knowing the frequency distribution of each treatment, namely by using postpartum exercise SOP and the intensity of the pain scale. The results of the study were obtained in 10 respondents before and after being given postpartum exercise treatment according to the SOP, the majority of the pain scale decreased to mild pain as much as 80% or 8 respondents, moderate pain 20% or 2 respondents. There is a decrease in the level of *aftrepains* of postpartum mothers after postpartum exercise.

The researcher's assumption is that the level of *afterpains* decreases not only because it is given postpartum exercise treatment which causes the release of endorphin hormones and shifts one's perception, it can also be supported from internal factors of the mother herself such as feelings of happiness after getting a baby, support from husband and family. The results of the research analysis above are supported by the results of research conducted by Drury (2015) on 17 female subjects who were given exercise treatment, finding the results that exercise will have a *hypoalgesia* effect or reduce pain perception (Isnaini et al., 2021.)

Postpartum exercise is the right exercise to restore the mother's condition after childbirth, blood circulation and breathing have not returned to normal until to restore the body to its original shape and condition (Anggriyani & Listiyaningsih, 2023), during and after exercise, pelvic muscle training exercises in the early postpartum period can reduce the risk of urinary incontinence that often occurs in the postpartum period, besides pelvic floor muscle training during breastfeeding will not affect the amount or composition of breast milk or baby growth.

Postnatal care is needed in this period as it is a critical period for both mother and baby. It is estimated that 60% of deaths in pregnancy occur after delivery and 50% of postpartum deaths in the first 24 hours (Indah Sarastuti et al., 2021). After the baby is born, the uterus, which during labor experienced contractions and retractions, will become hard so that it can close the large blood vessels that lead to the former placenta implantation. Gradually the uterus becomes small (involution) until it finally returns to its pre-pregnancy state (Parwatingsih et al., 2021)

Uterine involution includes reorganization and expulsion of the decidua / endometrium and exfoliation of the placenta attachment site which is characterized by a decrease in size and weight and changes in uterine location marked by the color and number of lochia. The involution process can occur

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quickly or slowly influenced by several factors including early mobilization, early breastfeeding initiation, education and parity (Septyara & Hindiarti, 2020)

One of the ways that can be done with pharmacological methods is with the use of uterotonics including prophylaxis to increase natural uterine contractions in the third stage of labor after childbirth and vaginal delivery, by administering oxytocin 10 IU IM on the lateral part of the mother's thigh 1/3 above the thigh within 2 minutes of the birth of the baby (Akbar et al., 2020)

Postpartum exercise can help improve blood circulation, improve postpartum body and back posture, strengthen pelvic muscles and help mothers to be more relaxed and refreshed after giving birth (Widiantari, 2024). The provision of communication, information, and education is able to influence maternity and postpartum women so that there are no increased afterpains, where a person's past experience can make postpartum women want or not do early postpartum exercise, because many consider that not doing postpartum exercise even though they feel healthy - healthy only (Setiawati, 2020). Understanding of postpartum exercises is still very lacking, this requires good sources of information about postpartum exercises. Early postpartum exercise is one of the important steps for postpartum mothers to get healthy as before pregnancy.

The results of research showed that postpartum exercise had a significant effect on reducing TFU (Mindarsih & Pattypeilohy, 2020). Postpartum women TFU is one of the benchmarks of normal uterine involution. Afterpains are caused by continuous contraction in relaxation of the uterus. Uterine contractions occur physiologically which triggers pain that can interfere with the comfort of the mother in the postpartum period. Regarding Asih, R (2016) Pain called afterpains (mules, pain) is caused by uterine contractions, usually lasting 2-4 days postpartum. The pain that arises is subjective (Pitriani et al., 2023)

There are several factors that influence the decrease and increase in the intensity of pain afterpains in postpartum mothers, namely: Factors that influence the decline in afterpains in postpartum mothers are the support of loved ones, family, a comfortable environment, adequate nutrition, adequate rest, pharmacological therapy (Amoxilin antibiotics at a dose of 250-350 mg three times a day, cafadroxil, Fe tablets, paracetamol) and also non-pharmacological therapy, namely postpartum exercises.

The Effect of *Postpartum* Exercise on the Level of *Afterpains* in *Postpartum* Mothers

The paired sample T-test analysis was used to test the hypothesis whether there was a difference in the effect of postpartum exercise on the level of afterpains in postpartum mothers. The results of paired sample T-test analysis using a significant level of 0.05 can be seen that the significant value obtained (0.00 <0.05). Thus it can be concluded that there is a significant difference in the effect of postpartum exercise on the level of afterpains in postpartum mothers. This is supported by the decrease in the pain level of postpartum women. Researchers argue that the provision of postpartum exercise treatment has a major effect on changing or reducing the level of uterine involution in postpartum women.

Regular implementation of postpartum exercises in accordance with the techniques taught helps accelerate the recovery of the mother's condition, accelerate the process of uterine involution, help restore and tighten the pelvic, abdominal and perineal muscles, facilitate the release of lochea, help reduce pain and reduce the risk of complications. Postpartum exercise as a form of physical exercise, will have an impact on the cardiovascular system, muscle blood flow and cardiac output.

This study is in line with research conducted by at DR. M. Djamil Padang Hospital which shows that there is an effect of puerperal exercise on reducing the height of the fundus uteri in postpartum mothers. The decrease in fundus uteri height was faster in the puerperal exercise group compared to the group that did not do puerperal exercise, which was very statistically significant. This study shows that postpartum exercises will accelerate the process of

uterine involution in postpartum mothers. This can be seen from the decrease in fundus uteri height faster in mothers who do puerperal exercises. The results showed the effect of postpartum exercise on the level of afterpains in postpartum mothers at Permata Mother Hospital Purwodadi. Researchers argue that the provision of postpartum exercise treatment has a major effect on changes or a decrease in the level of uterine involution in postpartum mothers.

The findings of this study have important practical implications for postpartum care. First, puerperal exercises can be promoted as a standard component of postpartum education and care to accelerate uterine involution and reduce discomfort associated with afterpains. The limited sample size was due to the relatively small number of mothers who gave birth spontaneously at Permata Bunda Purwodadi Hospital during the study period. This has an impact on the limited generalizability of the research results. Lack of time to build trust with respondents, as the research was conducted in a short duration. This condition may affect respondents' openness in providing in-depth information.

CONCLUSION

There is an effect of postpartum exercises on the level of afterpains in postpartum women at the Permata Bunda Hospital Purwodadi.

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