

Role of Kegal Exercise and Prone Position in Enhancing Uterine Involution and Reducing Afterpains among Postnatal Mothers with Twin Delivery. An Interventional Study

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Abstract - This study aimed to assess the effectiveness of Kegel exercises associated with prone positioning to postpartum recovery in mothers who have twin delivery. The results showed that there was moderate adherence among the participants, and led to significant improvement in uterine involution and postpartum afterpains. Descriptive results included improvements in uterine firmness, a gradual decrease in abdominal fullness, a decrease in pelvic discomfort, a normalization of the postpartum bleeding and gradual resolution of uterine cramping pain after the intervention. Correlation analysis showed that there was a positive correlation between adherence to the intervention and uterine involution ($r = 0.334$, $p = 0.009$) and between adherence and reduction in afterpains ($r = 0.327$, $p = 0.011$). The results indicate that the more an exercise is performed and prone positioning is adhered to, the better the postpartum recovery outcome will be. The intervention was shown to be simple, safe, cost-effective and feasible to implement in routine postnatal care, without the need for specialized equipment. It also fostered active involvement of mothers and enhanced their postpartum comfort and wellbeing. The findings also provide further evidence for the generalizability of this intervention to various populations of postnatal mothers. Thus, the study findings suggest that Kegel exercises along with prone positioning are effective non-pharmacological interventions for improving recovery from childbirth and should be incorporated into the routine of postpartum nursing practices to facilitate faster uterine involution, decrease afterpains and better outcome of recovery from childbirth.

Keywords - Kegel exercise, prone position, uterine involution, afterpains, twin delivery, postnatal mothers.

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1. Introduction

The period following childbirth is called the postnatal period (puerperium) and is a very critical period in a woman's life that begins immediately after giving birth and continues for approximately 6 weeks. During this period the mother's body and physiology change in numerous ways as she slowly returns to her pre-pregnancy state. One of the most important process in postpartum period is uterine involution which is the process of gradual decrease in the size and weight of the uterus following the birth (Begum et al., 2025; Francis et al., 2026; Purwati, 2025; Singh et al., 2026). Good uterine involution is necessary to prevent postpartum complications, to assist the mother to get better and keep her reproductive function. After pains are one of the common after effects which are experienced by postnatal mothers apart from the process of uterine

involution, which occur as a result of prolonged uterine contractions. The expectations of women's postpartum recovery are more likely to be complicated for those who delivered twins. The uterus grows and stretches larger, as there are two babies, in a twin pregnancy than in a singleton pregnancy. This will increase its time and effort to return to its original form. When the uterus is over-distended, it may result in a delayed involution, in a greater bleeding loss and in heavier after pains. Moreover, mothers of twins may also have increased physical and emotional responsibilities for the care of two newborns, further emphasizing the importance of many aspects of postpartum recovery. Hence, any intervention that helps to promote uterine involution and to decrease after pains can play a significant role in the care of the mothers within this category (HosseiniHaji et al., 2025; Mei & Rahayu, 2024; Zhou et al., 2025).

Postpartum care centers on monitoring uterine involution, checking the flow of the vagina, pain management and comfort of the mother. The most common means of managing postpartum pain is through pharmacological means, however, the use of non-pharmacological means is emerging as an alternative to pharmacological treatment which is safe, inexpensive, and may become part of the standard care of the postpartum woman. These interventions can be added to the usual medical care and are potentially helpful without causing any harm to children and may be useful to improve recovery for mothers. A number of non-pharmacological interventions are available, and Kegel exercises and prone positioning have been noted as potential interventions for postpartum rehabilitation.

Kegel exercises are a set of exercises that were created by a gynecologist and which consist of repeated contractions and relaxation of the pelvic floor muscles. These exercises are popular because they tone the pelvic floor, strengthen the pelvic muscles, enhance blood flow to the pelvic organs and help them stay healthy. The pelvic floor muscles have to take a lot of strain and elongation over the course of pregnancy and childbirth, particularly if the twins. Kegel exercises may be beneficial after childbirth to strengthen muscles, improve blood flow to the pelvic region and help tissues grow back. Additional benefits of increased blood flow and muscle stimulation could also help promote uterine healing and postpartum health. So, Kegel exercises are included in postpartum rehabilitation programs and are considered to be an important component of them.

One effective easy method to recover from postpartum is prone laying. Prone position is a technique that requires the person to lie on their abdomen (face down) for a certain amount of time. It is thought to help the uterus settle correctly into position, aid the drainage of lochia and help stimulate the uterus to contract properly. Prone positioning may also be helpful to reduce abdominal pain and pelvic congestion that may happen during the postpartum period and help to make the mother feel better. The intervention of prone positioning is an easy and affordable intervention for postnatal mothers (Wulandari Ratna, 2024). Hence, a perfect service to the health of the postpartum woman, both in the muscles and the uterus could be obtained, if Kegel and prone positioning were combined. Prone positioning may provide mechanical support for the uterine contractions and drainage while Kegel exercises are targeted at the pelvic floor muscles and

circulation. The combination of these interventions can help to speed up uterine involution, minimize discomfort for the mother and improve recovery. These practices have been identified as beneficial but there have been few studies that examined the effectiveness of both practices together for mothers who have given birth to twins which may have a higher risk for delayed uterine recovery and may experience more afterpains. As multiple births become more common, and mothers of multiple births have specific post-partum needs, there is a need for evidence-based strategies that can help enhance recovery outcomes. The potential of Kegel exercises and prone positioning in accelerating uterine involution and minimizing afterpains can offer some useful advice for health care workers involved in the care of mothers. Motivated by this, the present study was undertaken to investigate the role of Kegel and prone position on postpartum mothers who had twin delivery to facilitate faster recovery, comfort and quality of life of the postpartum mothers. The study would contribute to the already available information about postpartum care and support and provide basis for effective and non-pharmacological interventions for maternal health during postpartum.

2. Literature Review

(Damayanty & Juita, 2025) The aim of this descriptive qualitative case study was to explore Kegel exercises as an approach to reduce acute perineal pain in a postpartum woman with perineal rupture. The intervention was delivered as three days in a row, while the nurses were present and the data were gathered via interviews, observations and pain assessments. Intensity of pain and behavior around pain point reduced with each passing day of the intervention. Additional improvements reported were: mobility and comfort (emotional, confidence in moving and comfort of wound.) The researchers found that Kegels could be used as part of a nursing care program to help reduce perineal pain and to facilitate early recovery after the birth and were thus included in the program.

(Mei & Rahayu, 2024) A true experimental study on comparison of effectiveness of kegal exercise and prone positioning in reducing after pain and involution of the uterus in primi postnatal mothers has been conducted. The sample was purposively selected; 60 participants were assessed in the postnatal wards and their pain level was taken using a visual analogue pain scale and fundal height was measured. The outcomes of this intervention were of

significant importance in relation to pain and uterine involution in comparison to the control conditions. A correlation was found between Kegel exercises and prone positioning, highlighting their effectiveness together in the recovery process after giving birth. The researchers stressed the need for continued education and provision of postpartum exercise programmes to improve health outcomes of moms.

(Swati Jaiswal, 2024) The efficacy of the kegal exercises and prone positioning for uterine involution and pain relief was evaluated in 60 postnatal mothers in a pre-experimental study. Following baseline, a series of three day of Kegel exercise and prone positioning was given to the participants. The fundal height and pain at post test were significantly decreased when compared with their pre test levels. Both interventions were effective and statistical analysis showed this to be the case. For other factors, there were no statistically significant differences between age and education level. The researchers concluded the non-pharmacological interventions have a positive impact on the postpartum recovery.

(Subramanian et al., 2023) The efficacy of the kegal exercises and prone positioning for uterine involution and pain relief was evaluated in 60 postnatal mothers in a pre-experimental study. Following baseline, a series of three day of Kegel exercise and prone positioning was given to the participants. At post test, the fundal height and pain scores were markedly reduced from their pre test scores. Both interventions were effective and statistical analysis showed this to be the case. Age and education level were statistically significant while other factors were not. The researchers found that there is a positive effect of non-pharmacological interventions on the postpartum recovery.

(Jaiswal & Manu, 2023) The postpartum and uterine involution in relation to afterpains is an important component of maternal care after childbirth, which was discussed by Jaiswal & Manu (2023). Women are likely to have some discomfort in the body and uterine contractions after giving birth, which can impact well-being and recovery. Interventions were identified to facilitate the involution process and minimize discomfort to the mother, as well as through literature. Kegel exercises and other postpartum rehabilitation techniques were found to be effective in the prevention of complications, reduction of pain and improvement of the recovery process. The findings highlighted the need for implemented postpartum exercise program in postpartum care in order to improve the physical

comfort and reproductive outcomes in daily postpartum care.

Table 2.1 Literature Summary

Author/Year	Method	Results	Research Gap
(Subramanian et al., 2023)	Pre-experimental research design with 60 postnatal mothers selected through purposive sampling. Numerical Pain Rating Scale and Clinical Proforma were used to assess pain and uterine involution before and after Kegel exercises and prone positioning.	Significant reductions in pain scores and fundal height were observed after three days of intervention, indicating improvement in uterine involution and postpartum pain relief.	The study included general postnatal mothers and had a relatively small sample size. Specific evidence regarding mothers with twin delivery was not explored.
(Sankhla, 2022)	Quasi-experimental two-group pretest-posttest design. Numerical Pain Rating Scale and fundal height measurements were used to assess afterpains and uterine	Kegel exercises and prone positioning significantly reduced afterpains ($t = 15.12$, $p = 0.00$) and improved uterine involution ($t = 9.54$, $p = 0.001$) among postnatal mothers.	The study did not specifically focus on mothers with twin delivery, who may experience greater uterine distension and postpartum discomfort than

Role of Kegal Exercise and Prone Position in Enhancing Uterine Involution and Reducing Afterpains among Postnatal Mothers with Twin Delivery. An Interventional Study

	involution.		mothers with singleton births.
(Somya Ajaykumar Gautam et al., 2022)	Literature-based study discussing postpartum recovery, afterpains, and nursing interventions for maternal care.	The study emphasized that postpartum exercises and nursing education are effective in reducing maternal discomfort and supporting uterine involution.	The study was conceptual in nature and did not provide primary empirical evidence or evaluate the combined effect of Kegel exercises and prone positioning in a specific population.
(Nirmal, 2022)	Experimental study involving 30 postnatal mothers selected through non-probability sampling. Kegel exercises were administered for seven days, and pain was assessed using the Numerical Pain Rating	The findings demonstrated a positive effect of Kegel exercises on reducing pain levels among postnatal mothers.	The study focused only on pain reduction and did not evaluate uterine involution or the combined effect of Kegel exercises and prone positioning, particularly among mothers

	Scale.		with twin delivery.
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From the literature reviewed, it was observed that Kegel exercise and prone positioning are effective interventions in the management of uterine involution and to minimize the pain associated with postpartum period. However most studies have been conducted in general postnatal populations with relatively small numbers of subjects and/or on one outcome such as pain-relieving. Little information exists on the effectiveness of a combination of Kegel exercises and prone positioning in the postpartum period in women with twins who are at higher risk of having delayed uterus involution and afterpains. Therefore, it was the aim of the present study to fill this gap and to provide evidence on the effectiveness of these interventions on the postpartum recovery of mothers with twin delivery.

3. Methodology

The present study was an interventional quantitative research to investigate the effect of Kegel exercises and prone position on improvement of the uterine involution and reduction of afterpains in mothers who gave birth to twins.

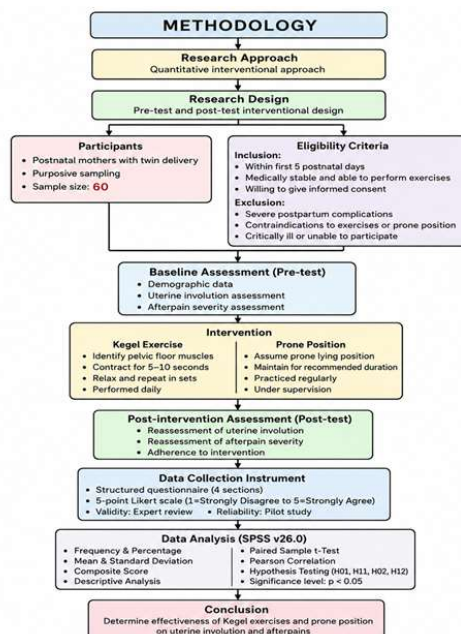


Figure 1 Proposed Flowchart

3.1 Research Design

The pre-test and post-test interventional design was used. Pre- and post-intervention evaluations of uterine involution and afterpain were performed in

order to assess baseline levels of these two issues prior to the intervention, and after the intervention, which included the use of Kegel exercises and the use of the prone position.

3.2 Objectives

1. To evaluate the effectiveness of Kegel exercise and prone position on uterine involution in postnatal mothers with twin delivery.
2. To evaluate the effect of Kegel exercise and prone position on afterpains in postnatal mom who has twin delivery.

3.3 Hypothesis

- H01: No significant difference in uterine involution was found for postnatal mothers who performed Kegel exercise and prone position after twin delivery.
- H1: Postnatal mothers who were delivered with twins showed a significant improvement in the uterine involution after administration of Kegel exercise and prone position.
- H02: After pain scores of postnatal mothers who received Kegel exercise and prone position after twin delivery were not significantly different.
- H2: Afterpain score is significantly decreased in postnatal mothers with twin delivery after giving Kegel exercise and prone position.

3.4 Study Setting

The study was carried out in selected hospitals of Bikaner which render maternity and postnatal care services to mothers who deliver twins in the postnatal wards.

3.5 Study Population

The present study involved mothers, the target population who had twins admitted to the selected hospitals of Bikaner.

3.6 Sample Size and Sampling Technique

There were 60 postnatal mothers in twin delivery who participated in the study. The sampling technique used to obtain the participants for the study was purposive sampling technique, as the participants needed to meet the criteria for the study.

Inclusion Criteria

- Postnatal mothers within 5 postnatal day of delivery.
- Postnatal mothers who have undergone normal delivery.
- Postnatal mothers who are medically stable.
- Postnatal mothers who are willing to participate in the study.

Exclusion Criteria

- Mothers with severe postpartum complications.

- Mothers who cannot do Kegel exercises or prone positioning.
- Mothers who were too ill or unable to participate in the intervention.

3.7 Variables

Table 3.1 Variable of Study

Type of Variable	Variable
Independent Variable	Kegel exercise and prone position intervention
Dependent Variables	Uterine involution and afterpains severity

3.8 Intervention Procedure

Kegel Exercise

Kegel Exercise During the postnatal period, the participants were asked to do Kegel exercises with the healthcare provider. The following intervention procedure was used:

- Participants received instructions to locate and properly contract the PF muscles.
- Each contraction lasted about 5-10 seconds followed by the same number of seconds of relaxation.
- The activity was repeated three times daily for three sessions with 10 repetitions per session.
- The healthcare provider showed the correct technique and controlled the participants to check proper exercise technique and follow the exercise protocol.

Prone Position

- Steps taken to position mother's prone (on their bellies) as tolerated.
- It was held for the suggested period with supervision.
- Prone positioning was practiced regularly during the intervention period.

3.8.1 Assessment of Intervention Adherence

Intervention adherence was evaluated based on 5 self-reported questionnaire items (Questions 1-5) which included asking participants about compliance with the prescribed Kegel exercises and prone positioning. The items examined participants' ability to do the Kegel exercises as directed, to properly engage and relax the correct muscles (pelvic floor muscles), to hold the suggested length of the exercise, to hold the prone position as instructed by the healthcare provider, and to consistently complete the Kegel and prone exercises as advised. A 5-point Likert scale was used to measure each item (1 = Strongly Disagree to 5 = Strongly Agree). Higher scores represented higher compliance with the

recommended intervention. The overall intervention adherence score was derived by computing the mean adherence score for the five adherence items and was then analyzed descriptively and correlated.

3.9 Data Collection Instrument

A structured questionnaire was used for the collection of data from the postpartum women in this study. The questionnaire aimed to collect data on the participants' demographic data, intervention compliance, and postpartum recovery results. It was broken down into the following 4 parts: Demographic Details:

Section A: Age, Educational Qualification, Occupation, Type of Delivery and Postnatal day at assessment

Section B: Intervention adherence with five items (Question 1-5) with participants' adherence to prescribed Kegal exercises and prone positioning.

Section C: Uterine Involution Assessment.

Section D: After pain Assessment.

After pain Assessment was done by using the numerical pain scale. The standardized response format allowed the systematic assessment of participants' compliance with the Kegal exercises, evolution of uterine involution and decrease in postpartum after pain to enable a quantitative analysis of the study objectives.

3.10 Validity and Reliability

To validate the contents, experts in the area of obstetrics, gynecology and nursing have reviewed the content of the questionnaire. A pilot study was conducted to check the reliability for the instrument and appropriate reliability coefficient was obtained before the main study.

3.11 Data Collection Procedure

1. Ethical approval was obtained from the institutional ethics committee.
2. The hospital authorities' permission was obtained.
3. Eligible mothers were informed of the purpose of the study and informed consent was obtained.
4. Baseline (pre intervention) measures were obtained.
5. Kegal exercises and prone positioning was supervised and demonstrated.
6. The participants were trained in the intervention for the indicated period after giving birth.

3.12 Data Analysis Tools and Techniques

The student will identify tools and techniques used in data analysis. All the collected data was coded, entered and analyzed with the Statistical Package for Social Sciences (SPSS) version 26.0. The study has been done in selected hospitals of Bikaner. To accomplish the study's aims and to test the

hypotheses, descriptive and inferential statistical techniques were used. A p-value of < 0.05 was deemed as statistically significant. Data collection tools included:

- Demographic variables/characteristics.
- Numerical Pain Scale (NPS) to assess after pain.
- Parameters to evaluate uterine involution such as fundal height, lochia quantity and consistency of the uterus.

The types of data analysis techniques used were:

A. Frequency and Percentage Distribution

- Used to describe and compare the demographic data of the postnatal mothers, such as their age, educational qualification, occupation, type of delivery and the time they spent at assessment postnatally.

B. Mean and Standard Deviation

- Used to assess participants' level of adherence to the prescribed Kegal exercises and prone positioning based on the mean scores of the five adherence items (Questions 1–5).
- Summarized uterine involution and afterpain scores by calculating their central tendency and variability of responses.

C. Composite Score Calculation

- The intervention adherence score was the average of the five adherence items (Questions 1-5), composite scores for the uterine involution and afterpain reduction were obtained by computing the average of the relevant questionnaire items. The composite scores were used for the Pearson correlation analysis.

D. Descriptive Statistical Analysis

- Used to evaluate the attitude and experience of the participants regarding the uterine involution and alleviation of after pain after the procedure.

E. Paired Sample t-Test

- To compare the uterine involution score of mothers who delivered twins with pretest and posttest scores.
- To compare pretest and posttest afterpain scores in order to assess the effectiveness of using kegal exercises and prone positioning.

F. Hypothesis Testing

- A Paired Sample t-test was conducted to test for changes in uterine involution before and after the intervention for H01 and H1.
- To assess the changes in afterpain score before/after intervention, two tests were used H02 and H2, and were both tested with Paired Sample t-test.

G. Level of Significance

- All statistical tests were done at 95% confidence level.
- A p-value less than 0.05 ($p < 0.05$) was considered statistically significant for accepting or rejecting the null hypotheses.

3.13 Ethical Considerations

All participation was voluntary and participants were able to withdraw at any time.

Confidentiality and anonymity of information obtained was maintained.

The intervention was carried out under the guidance of professionals to ensure the safety of the participants.

4. Data Analysis & Interpretation

4.1 Introduction

A descriptive and inferential statistical method was employed for the data analysis to determine the role of the Kegel exercise and prone positioning with the postnatal mothers. Descriptive data showed moderate compliance with the recommended intervention and its corresponding benefits for uterine involution, postpartum recovery and after pain. Furthermore, correlation analysis showed a statistically significant positive correlation between adherence to the intervention and uterine involution and afterpain reduction, indicating that adherence to the intervention was associated with better postpartum outcomes. The demographic profile showed a wide age, educational qualification and occupation spread, type of delivery, and postnatal day at assessment with a good quality representation of the study population.

Descriptives

Table 4. 1 Descriptive statistics summarize participants' adherence and performance across prescribed exercise practices.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Q1. I perform Kegel exercises according to the instructions provided.	60	1	5	3.02	1.000

Q2. I am able to correctly contract and relax my pelvic floor muscles during Kegel exercises.	60	1	5	2.92	.979
Q3. I maintain the recommended duration while performing Kegel exercises.	60	1	4	2.58	.907
Q4. I maintain the prone position as instructed by the healthcare provider.	60	1	4	2.73	.954
Q5. I regularly follow both Kegel exercises and prone positioning as advised.	60	1	5	2.80	.971
Valid N (listwise)	60				

Descriptive statistics show the level of adherence to Kegel and prone positioning exercises in the postpartum period. The responses of 60 participants were used to assess all five items. The average scores ranged from a moderate level of compliance with the

recommended intervention practices of 2.58 to 3.02. Maintaining the recommended exercise duration was the lowest mean score (Mean = 2.58, SD = 0.907), and performing Kegel exercises according to the provided instructions had the highest mean score (Mean = 3.02, SD = 1.000). As the standard deviation value was between 0.907 and 1.000, there was moderate variation in the participants' responses, which may suggest a difference in adherence across the study sample.

Adherence to intervention was evaluated by five questionnaire items (Questions 1-5) which evaluated the participants' compliance with the prescribed Kegel exercises and prone positioning. Each of these five items was rated and the scores averaged to produce an overall intervention adherence score. Mean scores indicated greater adherence with the intervention with the higher scores.

Descriptives

Table 4. 2 Descriptive statistics of participants' perceived postpartum recovery following exercise intervention outcomes.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Q6. I feel that my abdomen is gradually becoming flatter after delivery.	60	1	5	2.98	.948
Q7. I notice a gradual reduction in abdominal fullness each day.	60	1	5	3.02	1.000
Q8. My uterus feels firm when assessed by the	60	1	5	2.83	.960

healthcare provider.					
Q9. I have experienced steady improvement in uterine recovery since delivery.	60	1	5	3.03	.974
Q10. My postpartum bleeding pattern appears normal according to healthcare advice.	60	1	5	2.95	1.016
Q11. The amount of postpartum bleeding has gradually decreased.	60	1	5	2.95	.964
Q12. I feel less pelvic heaviness compared with the first day after delivery.	60	1	5	2.95	.982

Q13. My lower abdominal discomfort has decreased over time.	60	1	5	2.93	.954
Q14. I feel that my uterus is returning to its pre-pregnancy condition.	60	1	5	2.92	.962
Q15. The exercises and positioning have helped improve my postpartum recovery.	60	1	5	2.85	.988
Valid N (listwise)	60				

Descriptive statistics are provided of the participants' perceptions of the uterine involution and recovery from postpartum after Kegel exercises and prone positioning. The responses of all 60 participants were analysed. The mean scores for improvements in uterine recovery ranged from 2.83 to 3.03 which reflect a moderate agreement regarding the improvement in uterine recovery. Steady improvement in uterine recovery since delivery (Mean = 3.03, SD = 0.974), and reduction in abdominal fullness (Mean = 3.02, SD = 1.000) were the next highest means. The lowest mean score was for the perception of the exercises and positioning facilitates postpartum recovery (Mean = 2.85, SD = 0.988). The values of standard deviation obtained from 0.948 to 1.016 indicate moderate variation in the answers given by participants reflecting the differences in their experiences of recovery from the study population.

Correlations

Table 4. 3 Correlation analysis between intervention adherence and uterine involution recovery among participants.

Correlations			
		Intervention _Score	Uterine_Involution
Intervention _Score	Pearson Correlation	1	.334**
	Sig. (2-tailed)		.009
	N	60	60
Uterine_Involution	Pearson Correlation	.334**	1
	Sig. (2-tailed)	.009	
	N	60	60
**. Correlation is significant at the 0.01 level (2-tailed).			

The score of the intervention and uterine involution was compared among 60 subjects using correlation analysis. A moderate positive correlation ($r = 0.334$) between adherence to the Kegel exercises and prone positioning, which resulted in better uterine involution, was found. There was a statistically significant ($p = 0.009$, two-tailed) relationship between the two variables with respect to the outcomes of uterine involution, and those with higher intervention scores tended to report better involution outcomes. While the association was moderate, the statistically significant result confirmed the effectiveness of the intervention in helping the uterus to recover after childbirth and suggested that adherence to the prescribed exercises and positioning was associated with better recovery.

Descriptives

Table 4. 4 Descriptive statistics of participants' perceived afterpain reduction following postpartum interventions.

Descriptive Statistics

Role of Kegel Exercise and Prone Position in Enhancing Uterine Involution and Reducing Afterpains among Postnatal Mothers with Twin Delivery. An Interventional Study

	N	Minimum	Maximum	Mean	Std. Deviation
Q16. I experience less uterine cramping pain than I did immediately after delivery.	60	1	5	3.05	.964
Q17. My afterpain intensity decreases day by day.	60	1	5	3.10	.951
Q18. I experience fewer episodes of afterpain during the day.	60	1	5	3.02	.965
Q19. Afterpains interfere less with my daily activities and infant care.	60	1	5	2.95	1.032
Q20. Kegel exercises and prone positioning have helped	60	1	5	3.07	.954

reduce my afterpains					
Valid N (listwise)	60				

The descriptive statistics summarize the participants' perceptions of afterpain reduction following the interventions. The descriptive statistics provide an overview of how participants felt about afterpain reduction after doing Kegel exercises and prone positioning. All 60 participants' data was used for analysis. The mean scores of the interventions ranged between 2.95 and 3.10, showing moderate agreement that the interventions helped to decrease postpartum afterpain. The statement of decreasing intensity of afterpains day by day had the highest mean (3.10, SD = 0.951) and interventions helped reduce afterpains had the next highest mean (3.07, SD = 0.954). The lowest mean score was for the afterpains interfere less with daily activities and infant care statement (Mean = 2.95, SD = 1.032). The standard deviation values of 0.951 to 1.032 suggest moderate variability in responses, reflecting that the participants experienced different levels of improvement in postpartum afterpains.

Correlations

Table 4. 5 Correlation analysis between intervention adherence and postpartum afterpain reduction among participants.

Correlations			
		Intervention_Score	Afterpain_Reduction
Intervention_Score	Pearson Correlation	1	.327*
	Sig. (2-tailed)		.011
	N	60	60
Afterpain_Reduction	Pearson Correlation	.327*	1

Role of Kegel Exercise and Prone Position in Enhancing Uterine Involution and Reducing Afterpains among Postnatal Mothers with Twin Delivery. An Interventional Study

	Sig. (2-tailed)	.011	
	N	60	60
*. Correlation is significant at the 0.05 level (2-tailed).			

The correlation analysis was used to get a picture of the correlation between intervention score and afterpain reduction for the 60 participants. A moderate positive association was obtained with the use of Pearson correlation coefficient ($r = 0.327$) between adherence to Kegel exercises and prone positioning, and reduction of postpartum afterpain. This association was statistically significant at the 0.05 level ($p = 0.011$, two-tailed) and indicates that the level of adherence to the recommended interventions was related to the degree of relief from afterpains experienced by participants. While the correlation was moderate, the statistically significant result indicates that the correct execution of the intervention is linked to greater comfort in the postpartum period and that the intervention using Kegel exercises with prone positioning has a positive effect on afterpain.

Table 4. 6 Frequency distribution of participants' demographic and obstetric characteristics in the study.

Demographic Variable	Category	Frequency (n)	Percentage (%)
Age (Years)	18–25 Years	18	30.0
	26–30 Years	17	28.3
	31–35 Years	11	18.3
	Above 35 Years	14	23.3
	Total	60	100.0
Educational Qualification	Primary Education	12	20.0
	Secondary Education	10	16.7

	Higher Secondary Education	10	16.7
	Graduate	15	25.0
	Postgraduate and Above	13	21.7
	Total	60	100.0
Occupation	Government Employee	6	10.0
	Private Employee	13	21.7
	Self-Employed	12	20.0
	Homemaker	18	30.0
	Other	11	18.3
	Total	60	100.0
Type of Delivery	Normal Vaginal Delivery	35	58.33
	Assisted Vaginal Delivery	25	41.66
	Total	60	100.0
Postnatal Day at Assessment	Day 1	11	18.3
	Day 2	11	18.3
	Day 3	9	15.0
	Day 4	15	25.0
	Day 5 or Above	14	23.3
	Total	60	100.0

The correlation analysis was used to get a picture of the correlation between intervention score and afterpain reduction for the 60 participants. A moderate positive association was obtained with the use of Pearson correlation coefficient ($r = 0.327$) between adherence to Kegel exercises and prone positioning, and reduction of postpartum afterpain. This association was statistically significant at the 0.05 level ($p = 0.011$, two-tailed) and indicates that the level of adherence to the recommended interventions was related to the degree of relief from afterpains experienced by participants. While the correlation was moderate, the statistically significant result indicates that the correct execution of the intervention is linked to greater comfort in the postpartum period and that the intervention using Kegel exercises with prone positioning has a positive effect on afterpain.

4.2 Discussion

In the present study, the effectiveness of the Kegel exercises and prone positioning was assessed on reducing afterpain and uterine involution in 60 postnatal women. The results indicated moderate adherence to the recommended intervention with a mean score between 2.58 and 3.02, meaning that most mothers could follow the recommended Kegel exercise programme and could maintain the advised prone position during the post natal period. The uterine involution and postpartum recovery assessment showed mean values between 2.83 and 3.03, with a gradual improvement in some of the uterine parameters (firmness, abdominal fullness, and abdominal discomfort) and postpartum bleeding along with postpartum recovery. Similarly, mean scores in the afterpain reduction domain ranged from 2.95 to 3.10, indicating that the participants experienced progressive decrease in uterine cramping pains, fewer after pains, and less interference in daily activities and with infant care. These results were reinforced by inferential analysis, which showed a statistically significant positive correlation between mothers' adherence to the intervention and their uterine involution ($r = 0.334$, $p = 0.009$), meaning that the more consistent mothers are with practicing Kegel exercises and doing prone positioning, the better the uterine recovery was. Likewise, there was significant positive correlation between adherence to intervention and reduction in afterpain ($r = 0.327$, $p = 0.011$), indicating that consistent compliance with the intervention was associated with decreased postpartum pain and increased physical comfort. The findings are important because they will support the physiological benefits of Kegel exercises for strengthening pelvic floor muscles, improving pelvic circulation and facilitating healing of tissues, prone positioning will facilitate proper alignment of the

uterus and increase uterine contractility, which will support the involution process. Demographic characteristics revealed that the study population was diverse in terms of age, educational level, occupation, type of delivery, and day of postnatal assessment which indicated that the intervention had positive effects on a heterogeneous group of participants. In general, the results of this study support the use of Kegel exercises in conjunction with prone positioning as a non-pharmacological treatment that is effective, safe, and cost-effective that can be included in the standard postnatal care provided to mothers for better uterine involution and to reduce postpartum after pain and maternal discomfort so as to promote quicker recovery in the postpartum period. The results also highlight the need for educating the postnatal mother on the need to adhere consistently to these simple interventions to achieve the desired outcome of optimal recovery during the early postnatal period.

5. Conclusion

The present study found that in mothers of twin delivery, Kegel exercises in addition to prone positioning proved to be effective non-pharmacological interventions to improve recovery after childbirth. The results confirmed that moderate compliance with the intervention was observed and associated with significant postpartum afterpains decrease and uterine involution. Descriptive analysis revealed a progressive increase in uterine firmness, decrease in abdominal distention, and decrease in pelvic pain, normal postpartum bleeding and decrease in uterine cramping pain after the intervention as experienced by mothers. Moreover, correlation analysis showed that there was statistically significant positive correlation between adherence with intervention and uterine involution ($r = 0.334$, and $p = 0.009$) and adherence with intervention and after-pain reduction ($r = 0.327$, and $p = 0.011$). The results suggest that mothers who adhered to more Kegel exercises and prone positioning had better postpartum recovery outcomes compared to those who adhered to fewer exercises and prone positioning. The intervention is simple, safe, low-cost and readily integrated into standard post-natal care, requiring no special equipment or extra costs. It also promotes active maternal involvement in the recovery process, and can enhance overall maternal comfort and well being during the early postnatal period. The varied demography of the respondents also implies that the intervention can be embraced by different groups of postnatal mothers. The study, therefore, affirms the use of kegal exercises and prone positioning as part of the standard practice of the postnatal nurse. The healthcare worker should advise and encourage postnatal mothers to practice

these interventions regularly for a faster uterine involution, less afterpains, better physical recovery and quality of postpartum care.

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