# A Study to Assess the Effectiveness of Kegel Exercises and Prone Position on After Pains and Involution of Uterus Among Post Natal Mothers at Selected Hospitals of Jabalpur, M.P

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*Abstract*—**Childbirth is a significant life event for women, involving profound physiological, psychological, and social changes. The postpartum period, also known as puerperium, is a critical phase during which the body undergoes involution and returns to the non-pregnant state. One of the most common and distressing postpartum discomforts is "after pains," caused by uterine contractions during involution. These pains are often more intense in multiparous women and may be aggravated during breastfeeding due to oxytocin release. The present study focuses on the effectiveness of non-pharmacological interventions—specifically Kegel exercises and prone position—in reducing after pains and promoting uterine involution among postnatal mothers. Kegel exercises strengthen pelvic floor muscles, improve blood circulation, enhance bladder control, and support pelvic organ stability. The prone position, by applying gentle pressure over the abdomen, helps maintain uterine contraction and reduces uterine relaxation, thereby alleviating pain.**

**Postnatal care is essential for preventing complications such as postpartum hemorrhage, infections, and subinvolution of the uterus. Early intervention using simple, cost-effective, and non-invasive methods like Kegel exercises, abdominal strengthening, and positional therapy can significantly improve maternal comfort, psychological well-being, and recovery outcomes.**

**This study emphasizes the importance of integrating non-pharmacological pain relief techniques into routine postnatal nursing care to enhance maternal recovery, reduce discomfort, and promote overall maternal health and well-being during the postpartum period.**

**Aim:- The aim of the present study was to assess the effectiveness of Kegel exercises and prone position on after pains and involution of uterus among postnatal mothers in selected hospitals of Jabalpur, Madhya Pradesh.**

**Methodology: - In view of the nature of the problem and to accomplish the objectives of the study, An Quantitative and Evaluative research approach used in this study. Quasi Experimental Post test only control group research design used in this study: the study was conducted in Government hospital Rani Durgawati Elgine Hospital Jabalpur, ( M.P.) will be included in study. The study population was Postnatal mothers from day 1 to day 3 of delivery admitted in the postnatal wards selected Hospitals of Jabalpur (M. P.)**

**Findings: - The results of the study showed that the majority of postnatal mothers in the control group experienced no pain (53.33%) according to the Visual Analogue Pain Scale, while in the experimental group 60% of mothers reported no pain after administration of Kegel exercises and prone position. The involution of uterus, measured by SFH, revealed that most mothers in the control group had slow involution (53.33%), whereas the experimental group showed fair involution in most cases (56.67%). The comparison between groups indicated that the experimental group had significantly reduced after pains and improved uterine involution compared to the control group, demonstrating the effectiveness of Kegel exercises and prone position. Statistical analysis also showed significant associations between selected demographic and clinical variables with after pains and involution of uterus in both groups.**

**Conclusion: - The study concluded that Kegel exercises and prone position were effective in reducing after pains and improving involution of the uterus among postnatal mothers. The findings revealed that the experimental group experienced significantly less pain and better uterine involution compared to the control group. It was**

**also concluded that selected socio-demographic and clinical variables showed significant associations with after pains and uterine involution in both groups. Overall, the study confirmed that non-pharmacological interventions such as Kegel exercises and prone position were beneficial in promoting postpartum recovery and enhancing maternal well-being.**

***Index Terms*—Kegel exercises, prone position, after pains, uterine involution, postnatal mothers, postpartum period, non-pharmacological interventions, pain assessment, Visual Analogue Pain Scale (VAPS), Symphysis Fundal Height (SFH), Jabalpur, Madhya Pradesh.**

## I. INTRODUCTION

Pregnancy and childbirth are profound biological and psychosocial experiences in a woman's life, involving major transformations in physical structure, hormonal balance, emotional state, and social roles. Following delivery, the woman enters the postpartum period, also known as puerperium, which extends approximately six weeks and is characterized by the gradual restoration of the reproductive system to its pre-pregnant state. One of the most important physiological changes during this period is uterine involution, the process by which the enlarged uterus contracts, reduces in size, and returns to its original non-pregnant condition.

During this phase, many postnatal mothers commonly experience after pains, which are intermittent, cramp-like uterine contractions felt in the lower abdomen. These pains are primarily caused by uterine muscle contraction and are often more severe in multiparous women due to reduced uterine muscle tone. Breastfeeding further intensifies these contractions through the release of oxytocin, which stimulates uterine activity. Although after pains are a normal physiological response, they may cause significant discomfort, sleep disturbances, fatigue, anxiety, and reduced ability of the mother to care for her newborn effectively.

Proper and timely uterine involution is essential to prevent postpartum complications such as sub-involution, excessive lochial discharge, postpartum hemorrhage, and puerperal infections. Therefore, effective postnatal care strategies are essential to enhance maternal recovery and ensure safe motherhood. In modern maternity care, there is increasing emphasis on non-pharmacological, safe, cost-effective, and easily applicable interventions to manage postpartum discomfort and promote uterine health.

Among such interventions, Kegel exercises and prone position have gained importance. Kegel exercises involve voluntary contraction and relaxation of the pelvic floor muscles, which support the uterus, bladder, and bowel. Regular practice of these exercises improves pelvic muscle strength, enhances blood circulation, supports uterine positioning, and promotes faster recovery of reproductive structures. In addition, prone position, where the mother lies flat on her abdomen with appropriate support, is believed to exert gentle pressure over the uterus, encouraging sustained uterine contraction, improving lochial drainage, and reducing after pains.

These interventions are simple, non-invasive, and can be performed without medical equipment, making them highly suitable for postnatal mothers in both hospital and home settings. Despite their potential benefits, their effectiveness in reducing after pains and enhancing uterine involution requires scientific validation.

## II. NEED FOR THE STUDY

Motherhood is a unique and transformative experience in a woman's life. Pregnancy and childbirth bring profound physical, emotional, and psychological changes. After delivery, the mother enters the postpartum period, which is a critical phase involving recovery, adaptation, and adjustment to new maternal responsibilities. During this time, women often experience both joy and exhaustion along with unexpected physical discomforts such as after pains, fatigue, and perineal pain.

Globally, maternal health remains a major concern. A significant proportion of maternal deaths occur due to pregnancy and postpartum complications, especially in developing countries. Despite advances in healthcare, postpartum morbidity continues to be a neglected area, with many women receiving inadequate attention during this crucial period. Postnatal care should therefore be provided in a sensitive, supportive, and holistic manner to promote optimal recovery and well-being of the mother.

The postpartum period is characterized by physiological changes such as uterine involution,

lochia discharge, hormonal adjustments, and restoration of reproductive organs to the non-pregnant state. Uterine involution generally completes within six weeks after delivery. However, during this process, many women experience after pains, which are intermittent, cramp-like uterine contractions caused by uterine muscle activity as it returns to its normal size. These pains are often more intense in multiparous women and may worsen during breastfeeding due to oxytocin release.

Postpartum complications remain a significant public health issue. A large number of maternal deaths occur during the postpartum period, often due to preventable causes such as hemorrhage, infection, and inadequate postnatal care. In addition, postpartum women commonly suffer from physical discomforts such as backache, perineal pain, fatigue, urinary incontinence, and after pains, all of which affect their quality of life and ability to care for the newborn.

Weakening of abdominal and pelvic floor muscles during pregnancy and childbirth may lead to urinary incontinence, pelvic organ prolapses, and delayed uterine involution. Therefore, strengthening these muscles through early postpartum exercises is essential. Early initiation of postnatal exercises helps restore muscle tone, improve circulation, reduce edema, promote uterine contraction, and enhance overall recovery.

Among non-pharmacological interventions, Kegel exercises and prone position are simple, safe, and cost-effective methods that can be easily practiced by postnatal mothers. Kegel exercises strengthen the pelvic floor muscles, improve bladder control, support uterine position, and promote faster involution. Prone position applies gentle abdominal pressure, which helps maintain uterine contraction and reduces after pains.

Studies have shown that regular physical activity during the postpartum period improves sleep, enhances energy levels, reduces stress, and decreases the risk of postpartum depression. However, lack of awareness and poor practice of postnatal exercises remain major problems among mothers, particularly in developing regions.

Despite the availability of various measures to manage after pains, many women continue to experience discomfort, which interferes with breastfeeding, bonding with the newborn, and daily functioning. Clinical observations also reveal that multiparous women are more prone to severe after pains and delayed uterine involution, indicating the need for effective nursing interventions.

In view of these issues, the researcher identified the importance of implementing simple, non-invasive interventions such as Kegel exercises and prone position to enhance maternal comfort and promote uterine involution. Therefore, the present study was undertaken to assess the effectiveness of Kegel exercises and prone position on after pains and involution of the uterus among postnatal mothers in selected hospitals of Jabalpur, Madhya Pradesh.

## III. OBJECTIVES OF THE STUDY

1. Assess the after pains and involution of uterus among postnatal mothers in control group.
2. Assess the after pains and involution of uterus among postnatal mothers after kegel exercises and prone position in experimental group
3. Assess the effectiveness of kegel exercises and prone position on after pains and involution of uterus among postnatal mothers by comparing in control group and experimental group
4. To determine association between the after pains and involution of uterus with socio- demographic variables among postnatal mothers in control group
5. To determine association between the after pains and involution of uterus with socio- demographic variables among postnatal mothers in experimental group.
6. To determine association between the after pains and involution of uterus with clinical variables among postnatal mothers in control group.
7. To determine association between after pains and involution of uterus with clinical variables among postnatal mothers in experimental group

## IV. ASSUMPTIONS

The study assumes that:

1. Post natal mothers will experience reduction in after-pains after practicing this Kegel exercises and adopt prone position.
2. The kegel exercise will help in increasing the involution status of uterus in mothers.

## V. RESEARCH HYPOTHESES

(All hypotheses will be tested at 0.05 level of significance)

- $H_1$: There will be significant mean difference in after pains after administration of kegel exercises and prone position among postnatal mothers in control and experimental group
- $H_2$: There will be significant mean difference in involution of uterus after administration of kegel exercises and prone position in control and experiment group.
- $H_3$: a) There will be significant association between after pains and socio - demographic variables in control and experimental group.
- $H_3$: b) There will be significant association between after pains and clinical variables in control and experimental group.
- $H_4$:a) There will be significant association between involution of uterus and socio-demographic variables in control and experimental group.
- $H_4$: b) There will be significant association between involution of uterus and clinical variables in control and experimental group.

## VI. OPERATIONAL DEFINITIONS

1. Assess: -In this study, It refers to the effectiveness of kegel exercises and prone position on after pains and involution of uterus among postnatal mothers.
2. Effectiveness: - In this study effectiveness refers to the extent to which kegel exercises and prone position have reduced the after pains and hastened the process of involution of uterus among postnatal mothers. It is measured by Visual Analogue Pain Scale and Involution Assessment Proforma.
3. Kegel Exercise: - In this study to repeatedly contracting and relaxing the pelvic floor muscles. It will be done for 3 days and 2 times a day (from day 1 to day 3). Duration is 10 seconds each time. Frequency is 10 repetitions each time.
4. Prone Position: - In this study to positioning of postnatal mothers to lie on their abdomen with a supporting pillow with face turned aside and hands extended.
5. It will be done for 3 days and 2 times a day, by lying in prone position. Duration is 3-5 minutes at 30 minutes intervals. Frequency is 3 repetitions should be done each time.
6. After pains: - It is the infrequent, spasmodic pain felt in the lower abdomen after delivery for a period of 1-3 days due to the contraction of the uterus. It is measured by Visual Analogue Pain Scale 2 times a day.
7. Involution of uterus: - It is the return of the uterus to a prepregnant state after delivery. It measures with SFH (Symphysis Fundal Height) of the involution of uterus among postnatal mothers by tape method used, 2 time in a day and fill the appropriate space from Day 1 to Day 3
8. Postnatal mothers: -In this study, it refers to women who had normal vaginal delivery 37- 42 weeks and within 1-3 days of their postnatal period, admitted in hospital.
9. Singleton gestation: - In this study, it refers to the birth of only one child during a single delivery of postnatal mothers.

## VII. DELIMITATIONS OF THE STUDY

1. The study will be delimited to postnatal mothers with normal vaginal delivery without any complications.
2. The study will be delimited to postnatal mothers who are up to 3 days of postnatal period.

## VIII. MATERIALS AND METHODS

The study evaluated the effectiveness of Kegel exercise and prone position on after pains and involution of uterus among postnatal mothers. A quantitative evaluative research approach was used. A quasi-experimental post-test only control group design was adopted, where the experimental group received Kegel exercise and prone position, and the control group received routine care.

The study was conducted in the postnatal wards of Rani Durgawati Elgin Hospital, Jabalpur (M.P.). The target population included all postnatal mothers with normal vaginal delivery, while the accessible population included postnatal mothers admitted in selected hospitals of Jabalpur during day 1 to day 3. A total of 60 postnatal mothers were selected, with 30 in

the experimental group and 30 in the control group using non-probability purposive sampling technique.
The research tool consisted of socio-demographic variables, clinical variables, Visual Analogue Pain Scale (0–10), and Symphysis Fundal Height (SFH) measurement to assess uterine involution. The tool was validated by experts and reliability was established using Karl Pearson correlation coefficient ($r \approx 0.80$), which indicated high reliability. A pilot study was conducted on 10 postnatal mothers, and the tool was found feasible and no major modifications were required.
Data were collected over a period of four weeks. The experimental group received Kegel exercise and prone position intervention, while the control group received routine care. Pre and post assessments were done using standardized tools. Data were analyzed using descriptive and inferential statistics such as mean, percentage, t-test, and chi-square test, and a p-value of less than 0.05 was considered statistically significant. Ethical approval was obtained from the institutional committee, informed consent was taken from all participants, and confidentiality was maintained throughout the study.

## IX. RESULT

The findings of the study reveal that in Comparison between Control Group and Experimental Group of Visual Analogue Pain Scale (VAPS) The findings revealed that in the control group, majority of postnatal mothers had no pain 16 (53.33%), followed by mild pain 12 (40%), and moderate pain 2 (6.67%), with no severe or excruciating pain reported. In the experimental group, majority had no pain 18 (60%), followed by mild pain 12 (40%), with no moderate, severe, or excruciating pain observed.
The mean VAPS score in the control group was 1.0219 ± 0.996, whereas in the experimental group it was 0.63303 ± 0.5577. The calculated unpaired t-value was 2.437, indicating a statistically significant difference at 0.05 level of significance. And Comparison between Control Group and Experimental Group of SFH (Symphysis Fundal Height) by Tape Method. The findings showed that in the control group, majority of postnatal mothers had slow involution (13–14 cm) 16 (53.33%), followed by fair involution (11–12 cm) 14 (46.67%). In the experimental group, majority had fair involution (11–12 cm) 17 (56.67%), followed by slow involution (13–14 cm) 8 (28.67%), and good involution 5 (16.67%).
The mean SFH score in the control group was 13.06 ± 1.38, whereas in the experimental group it was 12.03316 ± 1.368, with a mean difference of 1.02684. The calculated unpaired t-value was 3.243, indicating a statistically significant difference at 0.05 level of significance.
Overall Findings reveal that the comparison of both VAPS ($t = 2.437$) and SFH ($t = 3.243$) shows a statistically significant difference between the control and experimental groups. This indicates that Kegel exercises and prone position are effective in reducing after pains and improving uterine involution among postnatal mothers.

## X. CONCLUSION

The present study concludes that Kegel exercises and prone position are effective non-pharmacological interventions in reducing after pains and promoting uterine involution among postnatal mothers. The experimental group showed a significant reduction in pain levels as measured by the Visual Analogue Pain Scale (VAPS) and improved uterine involution as indicated by Symphysis Fundal Height (SFH) measurements when compared to the control group. Statistical analysis revealed significant differences between the control and experimental groups in both VAPS ($t = 2.437$) and SFH ($t = 3.243$) at the 0.05 level of significance. This confirms that the intervention had a positive effect on maternal recovery during the postpartum period. Thus, it can be concluded that incorporating Kegel exercises and prone position into routine postnatal care is beneficial in enhancing maternal comfort, accelerating uterine involution, and improving overall postpartum outcomes.

## XI. IMPLICATION

Nursing Implications
Education:

- Nurses should educate postnatal mothers about Kegel exercises and prone position.
- Demonstration and return demonstration should be used for better understanding.
- Health teaching should be included in antenatal and postnatal counselling sessions.

Practice:

- Nurses should apply Kegel exercises and prone position in routine postnatal care.
- Regular assessment of after pains and SFH should be done.
- Non-pharmacological methods should be promoted for pain relief.

Administration:

- Policies should be developed for implementation of these interventions in wards.
- Training programs should be conducted for staff nurses.
- Adequate resources and guidelines should be provided in maternity units.

Research:

- Further studies should be conducted on larger samples.
- Comparative studies with other interventions should be encouraged.
- Long-term effectiveness of Kegel exercises and prone position should be explored.

## XII. RECOMMENDATIONS

- Kegel exercises and prone position should be incorporated as a routine practice in postnatal wards for reducing after pains and improving uterine involution.
- Nurses should provide structured health education sessions to postnatal mothers regarding postnatal exercises and their benefits.
- Hospitals should develop standardized protocols for non-pharmacological management of after pains in postnatal mothers.
- Regular monitoring of after pains and uterine involution should be ensured using standard tools like the Visual Analogue Pain Scale and SFH measurement.
- Postnatal mothers should be encouraged to practice Kegel exercises daily for faster recovery and improved pelvic muscle strength.
- Nursing staff should be trained periodically to effectively demonstrate and supervise these exercises.
- Further research should be encouraged on larger samples and different settings to strengthen evidence regarding effectiveness.

## REFERENCES


[1] Polit, D. F., & Beck, C. T. (2021). Nursing Research: Generating and Assessing Evidence for Nursing Practice. Wolters Kluwer.

[2] Kothari, C. R. (2019). Research Methodology: Methods and Techniques. New Age International Publishers.

[3] Brunner, L. S., Smeltzer, S. C., & Bare, B. G. (2018). Textbook of Medical-Surgical Nursing. Lippincott Williams & Wilkins.

[4] Lowdermilk, D. L., Perry, S. E., & Cashion, K. (2020). Maternity and Women's Health Care. Elsevier.

[5] Cunningham, F. G., et al. (2018). Williams Obstetrics. McGraw Hill Education.

[6] Bobak, I. M., Lowdermilk, D. L., & Jensen, M. D. (2019). Maternity Nursing. Mosby Elsevier.

[7] Park, K. (2021). Park's Textbook of Preventive and Social Medicine. Banarsidas Bhanot.

[8] World Health Organization (2022). Postnatal Care Guidelines. WHO Press.

[9] Perry, S. E., Hockenberry, M. J., & Lowdermilk, D. L. (2017). Maternal Child Nursing Care. Elsevier.

[10] Pillitteri, A. (2017). Maternal & Child Health Nursing: Care of the Childbearing & Childrearing Family. Wolters Kluwer.

[11] Fraser, D. M., & Cooper, M. A. (2018). Myles Textbook for Midwives. Elsevier.

[12] Dutta, D. C. (2019). Textbook of Obstetrics. Jaypee Brothers Medical Publishers.

[13] Paily, V. P. (2020). Obstetrics and Gynecology for Nurses. CBS Publishers.

[14] Varney, H. (2019). Varney's Midwifery. Jones & Bartlett Learning.

[15] Gupta, P., & Ghai, O. P. (2018). Essentials of Pediatrics and Nursing. CBS Publishers.

[16] Basavanthappa, B. T. (2017). Nursing Research. Jaypee Brothers.

[17] Singh, I. (2019). Textbook of Human Physiology. Jaypee Brothers.

[18] Sharma, S. K. (2020). Nursing Research and Statistics. Elsevier India.

[19] Lewis, S. L., et al. (2021). Medical-Surgical Nursing: Assessment and Management of Clinical Problems. Elsevier.
[20] Suresh, K. (2018). Research Methodology in Nursing. Elsevier.
[21] Rao, K. S. (2019). Community Health Nursing. AITBS Publishers.
[22] Wylie, L. (2018). A Short Textbook of Midwifery. Elsevier.
[23] UNICEF (2021). Postnatal Care for Mothers and Newborns: Guidelines. UNICEF Publications.
[24] Indian Nursing Council (2020). Standards of Postnatal Nursing Practice. INC Guidelines.