

Original Research Article

# ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING POSTNATAL EXERCISES AMONG MOTHERS IN A TERTIARY CARE CENTRE

Sharadha Govindaraju<sup>1</sup>, Syeda Maisarah Imam<sup>2</sup>, Annu Murali M<sup>3</sup>, Bhanumathi Vasudeva<sup>4</sup>, Shashikala B. Patil<sup>5</sup>

<sup>1</sup>Assistant Professor, Department of Obstetrics and Gynaecology, BGS Medical College and Hospital, Nagarur, Bengaluru, India.

<sup>2,3,4</sup>Junior Resident, Department of Obstetrics and Gynaecology, Bangalore Medical College and Research Institute, India.

<sup>5</sup>Assistant Professor, Department of Obstetrics and Gynaecology, Bangalore Medical College and Research Institute, Bengaluru, India.

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**Corresponding Author:**

**Dr. Bhanumathi Vasudeva,**  
Junior Resident, Department of  
Obstetrics and Gynaecology,  
Bangalore Medical College and  
Research Institute, India.  
Email: bhanumathiathul@gmail.com

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## ABSTRACT

**Background:** Postnatal exercises (PNE) are essential for maternal recovery after childbirth, helping restore pelvic floor strength, improve circulation, enhance abdominal tone, and support psychological well-being. Despite these proven benefits, many mothers remain unaware of PNE or do not practice them effectively. **Aim:** To assess the knowledge, attitude, and practice (KAP) regarding postnatal exercises among mothers attending a tertiary care centre, and to identify socio-demographic factors influencing them.

**Materials and Methods:** A descriptive cross-sectional study was conducted among 200 postnatal mothers within 6 weeks of delivery. Data were collected using a structured questionnaire assessing knowledge (timing, benefits, types), attitude (perceived importance, willingness, barriers), and practice (frequency, adherence). Associations between KAP and socio-demographic factors were analysed using chi-square tests.

**Results:** The majority of mothers had poor knowledge (69%), unfavourable attitudes (70.5%), and poor practice (88.5%) regarding PNE. Awareness of pelvic floor and Kegel's exercises was absent. Education was the strongest predictor of both knowledge and practice ( $p < 0.0001$ ). Although 100% acknowledged the necessity of PNE, barriers such as childcare responsibilities, household work, pain, and lack of guidance hindered adherence. Most participants reported performing unstructured exercises, but none perceived tangible benefits.

**Conclusion:** The study highlights a significant gap between awareness and effective practice of PNE. Structured education, counselling during antenatal and postnatal visits, supervised demonstrations, and continued healthcare support are vital to improve adherence. Empowering women through education and tailored interventions can enhance postnatal recovery, prevent complications, and promote long-term maternal well-being.

**Keywords:** Postnatal exercises, maternal health, knowledge, attitude, practice, pelvic floor, tertiary care.

## INTRODUCTION

The postnatal period, often referred to as the “fourth trimester,” is a critical phase for the mother’s physical and psychological recovery.<sup>[1]</sup> Postnatal exercises, including pelvic floor exercises, abdominal strengthening, back care, and relaxation techniques, play a crucial role in preventing complications such as urinary incontinence, back

pain, diastasis recti, obesity, and postpartum depression.<sup>[2,5]</sup>

Despite their proven benefits, many women either do not perform these exercises or perform them incorrectly due to lack of awareness, cultural restrictions, or insufficient support from healthcare providers.<sup>[3]</sup> In tertiary care settings, where mothers have access to skilled professionals, understanding their knowledge, attitude, and practice (KAP) levels

is vital to bridge the gap between evidence-based recommendations and real-life practices.<sup>[4]</sup>

### Objectives

1. To assess the level of knowledge regarding postnatal exercises among mothers in a tertiary care centre.
2. To assess the attitude of mothers towards postnatal exercises.
3. To assess the practice of postnatal exercises among mothers.
4. To identify the association between socio-demographic variables and knowledge, attitude, and practice.

## MATERIALS AND METHODS

**Study Design:** Descriptive cross-sectional study.

**Study period:** Dec 1 to Jan 1 2022

**Setting:** Postnatal ward of a tertiary care centre, department of OBG, BMCRI.

**Population:** Postnatal mothers (within 6 weeks of delivery).

**Sample Size:** Based on previous study conducted by Alharqi HM and Albattawi JA, the proportion of people having adequate knowledge about postpartum exercises was 72.5%. Considering the same proportion in the present study, the Sample size can be calculated using the formula.

$$n = \frac{Z^2 \alpha^2 pq}{d^2}$$

Where  $Z\alpha$  = Standard table value for 95% confidence interval

p = proportion of cases having adequate knowledge = 72.5%

q = 100 - p = 27.5%

d = relative precision = 10% of p = 10% of 72.5 = 7.25

$$n = \frac{Z^2 \alpha^2 pq}{d^2}$$

$n = (1.96)^2 \times 72.5 \times 27.5 = 76.59$   
7.252

$n \sim 147.7$

**Total Sample Size:** 150

### Inclusion Criteria

Mothers within 6 weeks postpartum.

Willing to participate.

### Exclusion Criteria

Mothers with obstetric complications contraindicating exercises.

Critically ill mothers.

Mothers unwilling to participate in study.

**Data Collection Tool:** Structured questionnaire.

**SOCIO DEMOGRAPHIC FEATURES AND MATERNAL CHARACTERISTICS**

- 1) NAME
- 2) AGE
- 3) RELIGION

- 4) EDUCATION a. Illiterate b. Primary c. Middle d. High school. e. Graduation
- 5) OCCUPATION- a. Unemployed b. Employed
- 6) INCOME – a. <5000. b. 5001-10000 c. 10001-20000 d. >20000
- 7) TYPE OF FAMILY a. Nuclear b. Joint
- 8) DOMICILE a. Rural b. Urban
- 9) PARITY –a. 1 b. 2 c. 3 d. >3
- 10) TYPE OF DELIVERY- VAGINAL/ LSCS
- 11) SOURCE OF INFORMATION-  
a. Clinic/healthcare professionals.  
b. Television  
c. Books  
d. Internet  
e. Family and friends

### KNOWLEDGE REGARDING POSTNATAL EXERCISES

- 12) WHEN TO START PNE –a. Immediately b. After 2 weeks. c. After 1 month. d. After 6 months
- 13) HOW FREQUENTLY PNE IS NEEDED. a. Once a day b. Once a week. c. 4-5 days /week d. Once a month
- 14) WHAT ARE THE TYPES OF PNE YOU KNOW- a. Breathing exercises b. Kegel's exercises  
c. Pelvic floor exercises d. Abdominal exercises
- 15) WILL PNE BENEFIT ME- a. yes b. no
- 16) WILL PNE CAUSE HARMFUL EFFECTS- a. yes b.no

### ATTITUDE ABOUT POSTNATAL EXERCISES

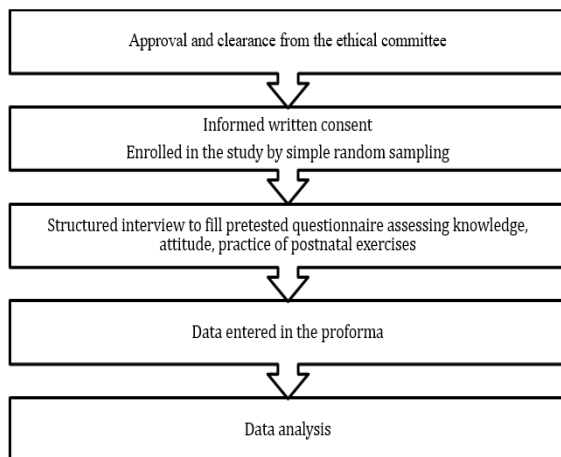
- 17) PNE IS NECESSARY a.Agree. b.Disagree
- 18) I ADHERE TO PNE REGULARLY a.Agree. b. Disagree
- 19) I FEEL GUILTY ON OMITTING PNE a.Agree. b.Disagree
- 20) HEALTH PROFESSIONALS HAVE POSITIVE INFLUENCE ON IT -a.Agree. b.Disagree
- 21) WHAT PREVENTS YOU TO DO PNE-a.Pain b.Fear of injury. c.Baby care. d.Household work e.Lack of information
- 22) HOW ADHERANCE TO PNE CAN BE IMPROVED. a.Motivation. b.Education. c.Awareness during antenatal visits

### PRACTICE OF POSTNATAL EXERCISES

- 23) HOW FREQUENTLY DO YOU DO PNE a. Daily. b. Once a week. c. Occasionally
- 24) HAVE YOU EXPERIENCED BENEFITS OF PNE. a.Yes. b.No
- 25) POSTNATAL VISITS HAVE POSITIVE INFLUENCE ON PNE- a.Yes. b.No
- 26) I WILL EMPHASIZE PNE TO OTHERS- a.Yes. b.No

**Methodology:** After obtaining approval and clearance from the institutional ethics committee, postnatal women in the postnatal wards who will be eligible for this study will be explained about the study in a language best understood by them. An informed written consent will then be taken from these women. Following this, 150 eligible

participants will be selected by simple random sampling (lottery method). A pretested questionnaire assessing the knowledge, attitude and practice of the women regarding postnatal exercises will be prepared. A structured interview method will be used to collect data in a language best understood by them. The data will then be entered in the proforma. Following data analysis, knowledge and practice will be classified as inadequate and adequate. Attitude will be classified as positive and negative. Correlation of knowledge, attitude and practice with socio-demographic characters will be assessed.



**Data Analysis:** The data collected will be entered in Microsoft- excel and analyzed statistically using SPSS version 20.0. Descriptive statistics namely mean, the standard deviation for continuous variables and frequencies, proportions for categorical variables. A chi-square test of significance will be used to check the association between categorical variables. P-value of  $< 0.05$  will be considered significant. Data will be represented in the form of tables and graphs wherever necessary.

**Ethical Consideration:** Institutional ethics approval obtained; written informed consent from participants; confidentiality maintained

## RESULTS

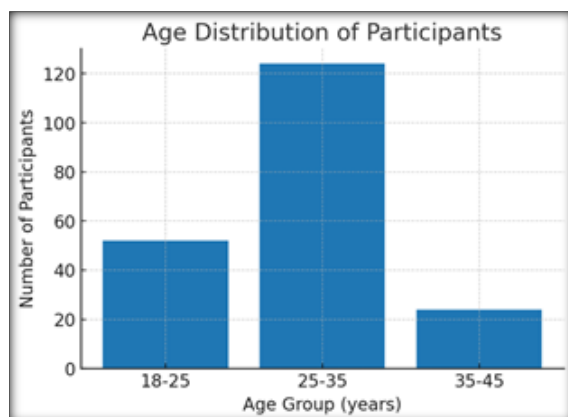


Figure 1: Age distribution of participants

The present study included 200 postnatal mothers. The demographic profile revealed that the majority of participants were in the age group of 25–35 years (62%), followed by 18–25 years (26%), and 35–45 years (12%). More than half were Hindu (55%), while 43.5% were Muslim, and 1.5% were Christian. With respect to education, 36.5% had primary education, 27.5% had middle school education, 18.5% were illiterate, and only 11% were graduates. In terms of occupation, 52% were unemployed and 48% employed. Nearly half (45%) of the participants reported a monthly family income between 10,000–20,000 INR, while 33% earned  $>20,000$  INR. The majority belonged to nuclear families (68.5%) and urban areas (63%). Most participants were para 1 (41.5%) or para 2 (36.5%), and 70.5% had delivered vaginally.

Regarding the source of information on postnatal exercise (PNE), 33.5% cited family/friends, 30.5% health care providers, and 30% reported having no information. Only a negligible proportion obtained information from mass media or internet sources.

### Knowledge on postnatal exercises

The assessment of knowledge showed that 33% had no idea about when to start PNE, while 25% felt it should begin after 1 month, and 22% immediately after delivery. Regarding frequency, 38% had no knowledge, while 35.5% considered once daily as appropriate.

When asked about types of exercises, most mothers cited walking (59%) and breathing exercises (38.5%), while none reported knowledge of Kegel or pelvic floor exercises. Encouragingly, 87.5% believed PNE to be beneficial, and 96.5% perceived no harmful effects. Overall, 69% had no knowledge, 22% inadequate knowledge, and only 9% adequate knowledge regarding PNE.

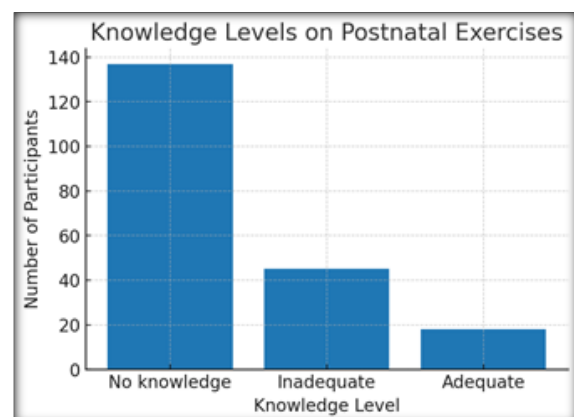


Figure 2: Knowledge levels on postnatal exercises

### Attitude towards postnatal exercises

A unanimous 100% agreed that PNE is necessary and acknowledged the role of health professionals in motivating them. However, none adhered regularly or expressed guilt about omitting PNE. The most common barriers were household work (84%), lack of information (35%), and pain (25%). Suggestions for improvement included awareness creation

(90.5%) and education (46.5%). Overall, 70.5% demonstrated an unfavourable attitude, while 29.5% had a favourable attitude.

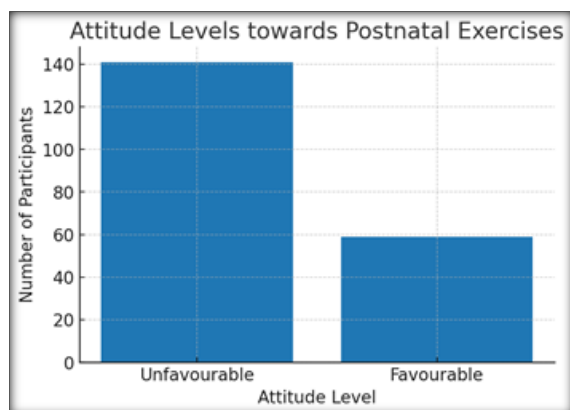


Figure 3: Attitude levels towards postnatal exercises

### Practice of postnatal exercises

With respect to practice, 64% reported performing PNE daily, whereas 36% did not perform any exercises. Interestingly, none of the participants reported tangible benefits from PNE. Nevertheless, all participants acknowledged the positive influence of postnatal visits and expressed willingness to emphasize PNE to others. Practice levels were found to be poor in 88.5% and good in only 11.5%.

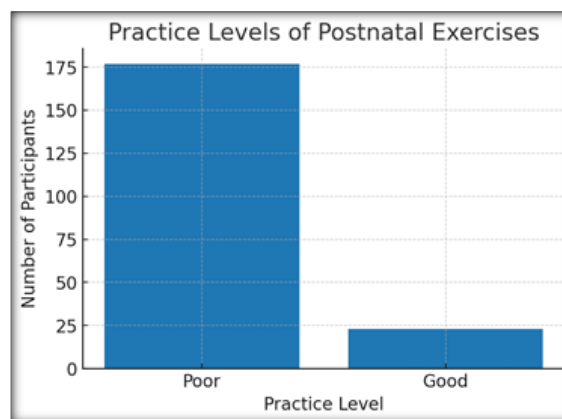


Figure 4: Practice levels of postnatal exercises

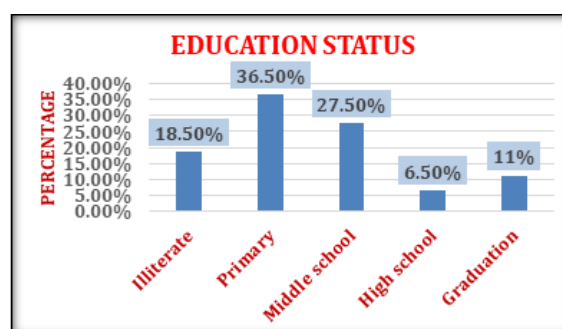


Figure 5: Educational status of participants

### Summary of demographic data

Table 1: Demographic Summary

Variable	Majority Category
Age (years)	25-35 (62%)
Religion	Hindu (55%)
Education	Primary (36.5%)
Occupation	Unemployed (52%)
Income	10,000-20,000 INR (45%)
Family type	Nuclear (68.5%)
Domicile	Urban (63%)
Parity	Para 1 (41.5%)
Delivery type	Vaginal (70.5%)

Table 2: Knowledge, Attitude, and Practice Levels

Domain	Poor/Unfavourable (%)	Inadequate (%)	Adequate/Favourable/Good (%)
Knowledge	69.0 (No knowledge)	22.0	9.0
Attitude	70.5 (Unfavourable)	-	29.5
Practice	88.5 (Poor)	-	11.5

### Association between Demographic Variables and KAP

- Knowledge: A statistically significant association was found between education and knowledge level ( $p < 0.0001$ ).
- Attitude: No demographic variables showed significant association with attitude.

- Practice: A statistically significant association was observed between education and practice ( $p < 0.0001$ ).

Thus, education emerged as the strongest influencing factor for both knowledge and practice of postnatal exercises.

Table 3: Associations Between Demographic Variables and KAP

Domain	Significant Demographic Factor
Knowledge	Education ( $p < 0.0001$ )
Attitude	None
Practice	Education ( $p < 0.0001$ )

## DISCUSSION

In summary, this study reinforces the urgent need for comprehensive maternal education programs that go beyond awareness to behaviour change. Tailored counselling, hands-on demonstrations, and continuous follow-up by healthcare providers are essential to translate positive attitudes into sustainable practice<sup>5</sup>. Strengthening these areas will not only improve postnatal recovery but also enhance long-term maternal health outcomes.<sup>[6]</sup>

This study also had limitations. Being cross-sectional, it could not establish causal relationships between knowledge and practice. Self-reported data may have introduced recall and reporting bias, particularly in the practice domain. Furthermore, the study was conducted in a single tertiary care centre, limiting generalizability. Future research should consider longitudinal designs to assess long-term adherence and effectiveness of targeted interventions.<sup>[7]</sup>

From a public health perspective, these findings carry significant implications. Postnatal exercises are proven to prevent complications such as urinary incontinence, back pain, diastasis recti, and postpartum depression—all of which can impair maternal quality of life and healthcare burden<sup>3</sup>. By failing to bridge the knowledge–practice gap, health systems risk perpetuating preventable morbidities. Incorporating structured PNE education into antenatal classes, using mobile health applications for reminders, and forming peer-support groups may improve adherence.<sup>[8]</sup>

The practice domain further highlights this gap: 64% reported engaging in some form of exercise daily, yet none reported perceiving tangible benefits. This suggests that the exercises performed were either not evidence-based or insufficient in intensity and duration to produce noticeable outcomes. Such findings emphasize the importance of supervised demonstrations, follow-up reinforcement, and culturally tailored counselling sessions. Integrating physiotherapists and trained nurses into postnatal care could ensure that mothers not only receive information but also gain the skills to perform exercises correctly.<sup>[9]</sup>

Interestingly, the attitude domain revealed a paradox: although 100% of mothers agreed that PNE is necessary, more than two-thirds were classified as having an unfavourable attitude due to lack of adherence, guilt, or motivation. This indicates that a verbal affirmation of importance does not necessarily translate into consistent behaviour. Practical barriers—such as childcare demands, household responsibilities, pain, and fatigue—were commonly cited. These barriers reflect a socio-cultural context where maternal self-care is often deprioritized in favour of newborn and household responsibilities, leaving little time or energy for structured exercises.

The role of education emerged as a critical determinant in our study. Mothers with higher levels of education demonstrated significantly better knowledge and practice, reinforcing the idea that literacy enhances receptiveness to health messages and enables women to seek reliable information. This observation is consistent with prior literature, where maternal education has been strongly correlated with positive health-seeking behaviours and improved maternal–child outcomes.

Our findings align with previous studies conducted in India and globally. Alharqi and Albattawi (2018) similarly reported that although a majority of women expressed positive attitudes toward postpartum exercises, only a minority adhered to regular practice<sup>1</sup>. Evenson (2011) also observed a decline in physical activity from pregnancy through the postpartum period, attributed to competing maternal responsibilities, lack of structured guidance, and limited social support.<sup>[2]</sup> In contrast, studies from Western countries, where physiotherapy services and structured antenatal counselling are routinely integrated, report higher awareness and adherence, particularly to pelvic floor muscle training (Wojno et al., 2014). This suggests that systemic differences in health service delivery and health literacy play a major role in shaping maternal behaviours.<sup>[9]</sup>

The present study underscores a substantial gap between awareness and implementation of postnatal exercises (PNE) among mothers in a tertiary care setting. While nearly all participants recognized the importance of PNE, more than two-thirds lacked adequate knowledge of when to begin exercises, their frequency, and specific types—particularly pelvic floor exercises. This disconnect between perception and practice is concerning, as it highlights a superficial understanding of PNE benefits without the corresponding depth of actionable knowledge.

## CONCLUSION

The present study reveals a considerable gap in the knowledge, attitude, and practice of postnatal exercises among mothers, despite their recognition of its importance. Most participants lacked adequate knowledge, particularly regarding pelvic floor exercises, and only a small fraction demonstrated favourable attitudes or consistent practice. Education was identified as the most influential factor shaping both knowledge and practice, underlining the value of literacy and structured health communication.

These findings highlight the urgent need to integrate structured postnatal exercise education into routine maternal care. Counselling sessions during both antenatal and postnatal visits, hands-on demonstrations by healthcare professionals, and the inclusion of physiotherapists in maternal care teams can improve awareness and ensure correct practice<sup>3</sup>.



Innovative approaches such as mobile health reminders and peer-support groups may further enhance adherence by addressing cultural and practical barriers.<sup>[6]</sup>

While this study provides important insights, its cross-sectional design and reliance on self-reported data limit the ability to capture long-term adherence and outcomes. Future research should adopt longitudinal and interventional designs to assess the effectiveness of tailored educational programs.

In conclusion, empowering women with knowledge, practical skills, and continuous support is essential for promoting postnatal exercise adherence. Such strategies will not only improve maternal recovery and prevent complications but also foster long-term health and well-being for mothers and their families.

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