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Original Research Article

Effectiveness of an educational intervention on knowledge of postnatal exercises among antenatal mothers

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ABSTRACT

Background: Postnatal exercises are important for maternal recovery after childbirth, supporting physical and psychological well-being and reducing postpartum complications. However, many antenatal mothers have limited awareness and practice of these exercises. Early educational interventions during the antenatal period can improve understanding and promote healthy postnatal practices.
Methods: A pre-experimental one-group pre-test post-test study was conducted among 60 antenatal mothers in a tertiary care hospital using a non-probability sampling technique. Knowledge was assessed before and after an educational intervention using a validated questionnaire. Data were analyzed using descriptive and inferential statistics, including the paired t-test and chi-square test.
Results: Knowledge scores improved from 6.93±2.99 in the pre-test to 12.67±3.41 in the post-test, showing a statistically significant difference ($t=16.23$, $p<0.001$). No significant association was found between baseline knowledge and selected demographic variables.
Conclusions: The findings indicate that the educational intervention effectively enhanced understanding of postnatal exercises among antenatal mothers. Including such sessions in routine antenatal care may support better maternal outcomes.

Keywords: Effectiveness, Educational intervention, Knowledge, Postnatal exercises, Antenatal mothers

INTRODUCTION

The postnatal period, defined as the first six weeks following childbirth, is a critical phase for maternal recovery and well-being. Despite advances in maternal healthcare, the postnatal period often receives less attention compared to antenatal care, especially in developing countries. During this period, appropriate care is essential to prevent complications such as venous thrombosis, urinary incontinence, musculoskeletal pain, pelvic floor dysfunction, and postpartum depression. The World Health Organisation emphasises the postnatal period as a critical yet underutilised phase in the continuum of maternal care.[1] Pregnant women commonly experience physical discomfort such as back pain, leg cramps, and pelvic problems.[2] If not addressed early, these conditions may persist into the postnatal period and adversely affect maternal health outcomes. Engaging in regular physical activity during and after pregnancy plays a crucial role in promoting maternal health and facilitating a smoother recovery. A prospective cohort study by Vesting et al demonstrated that postpartum exercise

significantly reduces pain, improves pelvic floor muscle strength, and enhances recovery, highlighting its clinical importance.[3] Despite known benefits, the practice of antenatal and postnatal exercise remains low due to inadequate knowledge, misconceptions, and unfavourable attitudes.[4] Providing appropriate postnatal care services through qualified healthcare professionals, along with planned education during the antenatal and postnatal periods, is essential to ensure maternal and neonatal well-being. Healthcare providers, particularly nurses and midwives, play a vital role in delivering structured education and promoting safe exercise practices during routine antenatal and postnatal care.[5,6] Following childbirth, many mothers prioritise newborn care over their own recovery and often neglect postnatal exercises due to fatigue, cultural beliefs, and lack of awareness.[7] Jessen et al reported that many women do not return to their pre-pregnancy physical activity levels during the postpartum period, and sedentary behavior may increase.[8]

This may adversely affect maternal health outcomes. Appropriately initiated postpartum exercises support physical health, enhance mood, reduce stress, and lower the risk of postpartum depression and cardiometabolic disorders.[9,10] Aguilar-Parra et al further demonstrated that physical activity significantly reduces depression, anxiety, and stress while improving psychological well-being among postpartum women.[11]

The American College of Obstetricians and Gynaecologists recommend gradual resumption of physical activity after childbirth, emphasising that postnatal exercise is safe and beneficial.[5,10] Lan et al also reported that most international guidelines recommend at least 120–150 minutes of moderate-intensity physical activity per week for postpartum women.[12]

Awareness and practice of postnatal exercises remain limited among many expectant mothers. Yadeta et al found that only 19.5% of women engage in regular postnatal exercise.[13] A study conducted by Rani et al reported that a planned teaching programme significantly improved postnatal exercise practices among mothers.[14] Antenatal education can help prepare mothers for the postpartum phase and support the adoption of healthy practices. However, awareness and provision of structured education regarding postnatal exercises remain inadequate among antenatal mothers, particularly in Indian healthcare settings where antenatal education often focuses more on childbirth than postnatal recovery.

There is a need to evaluate whether structured educational interventions during pregnancy can effectively improve knowledge and preparedness for postnatal exercises. In this context, the present study was undertaken among antenatal mothers to assess the effectiveness of an educational intervention in enhancing knowledge regarding postnatal exercises. The findings of this study may help highlight the importance of integrating structured antenatal education on postnatal exercises into routine maternal care to promote better postpartum recovery and overall well-being.

METHODS

A one-group pre-test post-test pre-experimental design was used to assess the effectiveness of a structured teaching programme on knowledge of postnatal exercises among antenatal mothers. The study was conducted at Amrita Institute of Medical Sciences, Kochi, Kerala, from August 2021 to January 2022. A total of 60 antenatal mothers were selected using a convenience sampling technique. Ethical clearance and administrative approval were obtained prior to data collection. Informed consent was obtained from all participants after explaining the purpose and procedure of the study. Participant confidentiality was maintained, and no personal identifiers were recorded.

Baseline demographic data were collected using a semi-structured questionnaire from participants who met the inclusion criteria. Knowledge regarding postnatal exercises was assessed using a structured questionnaire developed based on a literature review and validated by experts. A pre-test was conducted before the intervention, followed by a structured teaching programme on postnatal exercises. A post-test was conducted using the same questionnaire seven days after the intervention to assess its effectiveness.

Data were analysed using descriptive and inferential statistics. The effectiveness of the intervention was evaluated by comparing pre-test and post-test knowledge scores using the paired *t*-test. The association between pre-test knowledge scores and selected demographic variables was analysed using the chi-square test. Statistical analysis was performed using IBM SPSS version 20.0, and a p value <0.05 was considered statistically significant.

RESULTS

A total of 60 antenatal mothers were included in the study.

Section I: description of sociodemographic characteristics of antenatal mothers

Table 1 shows that most participants (73.3%) were aged 20-30 years, while 26.7% were aged 31-40 years. The majority of participants (83.3%) were graduates, and 16.7% had completed higher secondary education. Regarding occupation, 41.7% were homemakers, 35% were employed in the private sector, 13.3% were self-employed, and 10% were employed in the government sector.

Most participants (71.7%) belonged to nuclear families, while 28.3% belonged to joint families. In terms of residence, 41.7% lived in rural areas, and the remaining participants resided in urban areas.

Table 1: Frequency distribution and percentage of sociodemographic characteristics of antenatal mothers (n=60).

Socio-demographic variables	Frequency (f)	Percentage (%)
Age (years)		
20-30	44	73.3
31-40	16	26.7
Educational status		
Higher secondary education	10	16.7
Graduate and above	50	83.3
Occupation		
Homemaker	25	41.7
Private sector employee	21	35.0
Self-employed	8	13.3
Government employee	6	10.0
Type of family		
Nuclear family	43	71.7
Joint family	17	28.3
Area of residence		
Urban	35	58.3
Rural	25	41.7
Previous knowledge regarding postnatal exercise		
Yes	28	46.7
No	32	53.3
Source of information*		
Media	15	50.0
Parents/friends/ relatives	9	30.0
Health care personnel	6	20.0

Note: Percentages calculated among participants with previous knowledge regarding postnatal exercise (n=28).

Nearly half of the participants (46.7%) reported previous knowledge regarding postnatal exercises, whereas 53.3%

had no prior knowledge. Among those who reported prior knowledge, the main sources of information were mass media (50%), family members and friends (30%), and healthcare personnel (20%).

Section II: comparison of knowledge scores regarding postnatal exercises among antenatal mothers

Figure 1 shows the distribution of antenatal mothers according to their level of knowledge regarding postnatal exercises before and after the structured teaching programme.

In the pre-test, the majority of participants (83.3%) had poor knowledge, while 16.7% had moderate knowledge, and none had good knowledge. In the post-test, most participants (73.3%) had moderate knowledge, 3.3% had good knowledge, and the proportion with poor knowledge decreased to 23.3%.

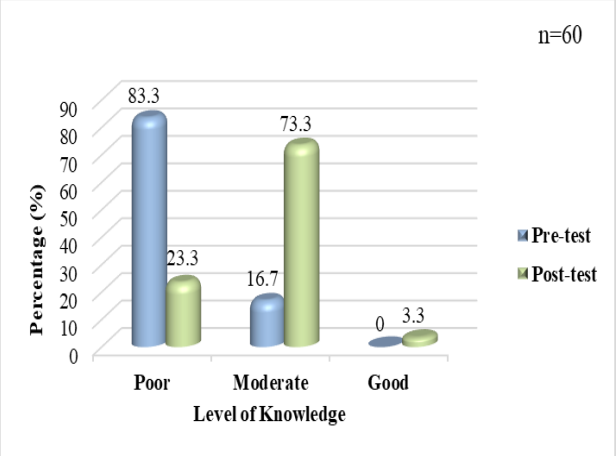

Figure 1: Percentage distribution of antenatal mothers based on the level of knowledge regarding postnatal exercises.

Table 2 shows a significant difference in knowledge scores regarding postnatal exercises before and after the structured teaching programme.

The mean knowledge score increased from 6.93±2.99 in the pre-test to 12.67±3.41 in the post-test, and the difference was statistically significant (t=16.23, p<0.001).

Table 2: Comparison of pre-test and post-test knowledge scores regarding postnatal exercises among antenatal mothers.

Test	Max score	Mean	SD	Mean (%)	T value	P value
Pre-test	30	6.93	2.99	23.1	16.23	<0.001*
Post-test	30	12.67	3.41	42.2		

*Significant at p<0.001.

DISCUSSION

The findings of the present study indicate that the educational intervention was effective in improving the knowledge of antenatal mothers regarding postnatal exercises. This was evident from the significant increase in mean knowledge scores from 6.93±2.99 in the pre-test to 12.67±3.41 in the post-test (p<0.001).

In addition, a clear shift in knowledge levels from predominantly poor in the pre-test to moderate and good levels in the post-test indicates meaningful improvement in baseline awareness. The improvement observed may be attributed to the structured and organized delivery of the teaching session, which likely enhanced understanding and retention of information. These findings highlight the importance of focused educational interventions in improving maternal health awareness. Similar findings were reported in a study conducted in Bangalore among antenatal mothers, where a structured teaching programme significantly improved knowledge scores from pretest to posttest (t=10.24, p<0.01), demonstrating the effectiveness of antenatal educational interventions in promoting awareness regarding antenatal and postnatal exercises.[15] Similarly, Natekar reported a marked improvement in knowledge and practices of postnatal exercises among mothers in Mumbai after a planned teaching programme.[16]

In the present study, the majority of participants (73.3%) were between 20 and 30 years of age, and 83.3% were graduates; however, most antenatal mothers had limited knowledge of postnatal exercises before the teaching session. Additionally, 53.3% of participants lacked prior knowledge regarding postnatal exercises, highlighting a gap in awareness even among educated mothers. This suggests general education alone does not ensure awareness of specific health practices and emphasizes the need for targeted health education during the antenatal period. The findings of the present study indicate no significant association between selected demographic variables and pretest knowledge scores regarding postnatal exercises. Similar findings were reported in a study conducted by Joshi et al, which demonstrated that structured teaching programs significantly improved postnatal mothers' knowledge, while pretest knowledge scores showed no significant association with most socio-demographic variables except occupation.[17]

The present study also highlights the importance of family support in promoting postnatal exercises. Although structured teaching interventions improve knowledge, sustained practice depends on encouragement from family members. A study conducted by Raja et al in a tertiary care center in South India reported that household responsibilities were the most commonly identified barrier to practice postnatal exercises despite adequate knowledge and positive attitudes.[18] This underscores the need to address social and practical barriers while promoting postnatal exercise practices. Further supporting the effectiveness of structured educational interventions, a study conducted by Shanthamma B reported that a structured teaching programme on pelvic floor exercises was effective in preventing and controlling urinary incontinence among postnatal mothers.[19] This highlights the broader role of educational intervention in improving postnatal exercise practices and preventing postpartum complications. Although only a small proportion of participants achieved a good level of knowledge, the reduction in poor knowledge and increase in moderate knowledge indicate a meaningful improvement. This suggests that a single educational session is effective in improving basic understanding, while repeated sessions may be required for higher knowledge levels. Improving knowledge regarding postnatal exercises is essential for promoting maternal recovery and preventing complications. These findings suggest that simple and well-planned educational sessions can be effectively integrated into routine antenatal care, where nurses can play an important role in guiding mothers on postnatal exercises.

Limitations

The absence of a comparison group limits the strength of causal conclusions. In addition, the relatively small sample size and non-random sampling method may restrict the generalizability of the findings. Further studies with larger samples and a comparison group are recommended to provide stronger evidence.

CONCLUSION

The study demonstrates that a focused educational intervention can effectively improve awareness of postnatal exercises among pregnant women. Incorporating such sessions into routine antenatal care may contribute to better maternal health outcomes.

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