

EFFECTIVENESS OF A STRUCTURED POSTNATAL EXERCISE PROGRAMME IN PROMOTING UTERINE INVOLUTION AMONG POSTNATAL MOTHERS IN SELECTED URBAN HEALTHCARE FACILITIES OF TRIPURA

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ABSTRACT

Uterus involution is a crucial part of the maternal postpartum recovery process to facilitate mother's recovery after birth. The pregnancy-related organs need to regain their preconception dimensions and condition through uterine involution because this fundamental process ensures mothers achieve full physical wellness. This study aims to explore the effect of structured postnatal exercise in the uterine involution process of urban mothers who come for healthcare treatment in Tripura. The study sought to determine if specific postnatal exercises added to healthcare programs could boost uterine involution rates which decreases the dangers of uterine atony and postpartum haemorrhage complications. The study was conducted on the new mother respondents who availed medical care from the urban health care facilities of Tripura with specific test conditions. The study has selected 51 women and analysed their experience of postnatal exercise through a survey method. This study used surgical ultrasound together with manual palpation of the uterus to measure involution rates as its main outcome. The results from this research analysis provided key recommendations on the effectiveness of postnatal exercise and could inform improved postnatal care for urban hospitals.

KEYWORDS: Postnatal exercise, uterine involution, maternal health, maternal recovery urban healthcare settings, postpartum recovery, urban healthcare settings Tripura, uterine atony, postpartum haemorrhage.

INTRODUCTION AND BACKGROUND

The postnatal period is a crucial time in a mother's life, when she needs complete care to aid her physical and psychological recovery. In countries, such as India, death of women in postnatal conditions is very common. Based on the report of 20th July, 2026 a woman of Rajasthan died in the postnatal conditions (NDTV, 2026). Since her delivery this woman was suffering from post-partum complications due to lack of proper healthcare services. In another case, a Tripura woman died due to her delivery at home (The Hindu, 2026). It has reflected lack of awareness of patients and family in providing proper healthcare support to women in the postnatal condition.

Postnatal exercise, also known as senam nifas, has been an innovative and attractive non-pharmacological intervention in the improvement of maternal health outcomes over the last several years. Are low impact movements to stimulate uterine contraction, improve blood flow, allow lochia to pass and improve emotional wellbeing. Women who begin exercising immediately after labour have been observed to regress their uterus more quickly, after the first 3 days. Similarly, postpartum gymnastics are also correlated with the decrease of the uterus with reduced risk of heavy bleeding.

News reports also mention benefits of combining physical activity and oxytocin massage – the natural stimulator of uterine contractions and milk ejection. Noting these advantages, Indonesia's Ministry of Health encourages postpartum exercise as integral parts of mother care. Public health facilities could play a far greater role in helping mothers recover in urban areas of Tripura where scheduled postnatal exercise programmes are integrated into the facilities. The integration of scheduled postnatal exercise programmes in public health facilities could make a significant impact in the health of mothers in urban areas of Tripura especially in urban centres like Agartala. Low cost and easy to set up, these interventions, when evaluated by ultrasound and palpation, are effective and sustainable to improve postpartum care in different populations.

LITERATURE REVIEW AND THEORETICAL DISCUSSION

The research of Syed et al. (2021) mentioned that physiological involution of the uterus is an important aspect of the mother's restoration in the postpartum period. New research into the effects of regular exercises after birth suggest benefits in speeding up recovery. Both of these exercises help to build up the strength of the uterine action and reduce the risk of complications such as uterine atony and, overall, help to maintain maternal health. Improved fundal height in women who performed senam nifas (Indonesian term of postpartum exercise), supporting the importance of physical activity in the postpartum period. The use of postnatal gymnastics did significantly reduce the fundal height, and reduce the health risks. The combined effect of oxytocin massage and exercise was determined that an increase in uterine tone resulting from stimulated oxytocin release and increased blood flow.

The study of Istiqomah et al. (2024) discovered that six studies were pooled and the mean effect was positive for exercise, although this was not statistically significant (SMD = -0.46; 95% CI: -1.99 to 1.07; p = 0.550). The results do not definitely prove that there was an improvement in the involution, although the authors conclude in a positive way, as the interval does not include the effect.

Exercise after giving birth promotes improvement. The research of Munthe et al. (2026) consisted of only 20 mothers in each of the exercise and massage groups, but no mothers administered no exercise and massage. Thus, the effects of interventions cannot be reliably distinguished from natural recovery. These restrictions call for a controlled study with standardised and repeated fundal measurements in Tripura.

Pender's Health Promotion Model is an appropriate behavioural model (Rojas-Torres et al., 2025). It was created to help describe the factors that influence health-enhancing behaviours and to inform nursing practice. Its importance in this context is in the explanation of participation in exercise and not in the physiological process of uterine involution.

MTHODOLOGICAL OUTCOME

This research has followed a primary quantitative data collection method using a survey process. Using convenience sampling method this research has selected 51 participants from Tripura, Agartala who experienced postnatal programmes. Using Correlation analysis this research has analysed the relevance of this process among the Indian, specifically Tripura's women.

FINDINGS AND DISCUSSION

Survey Findings

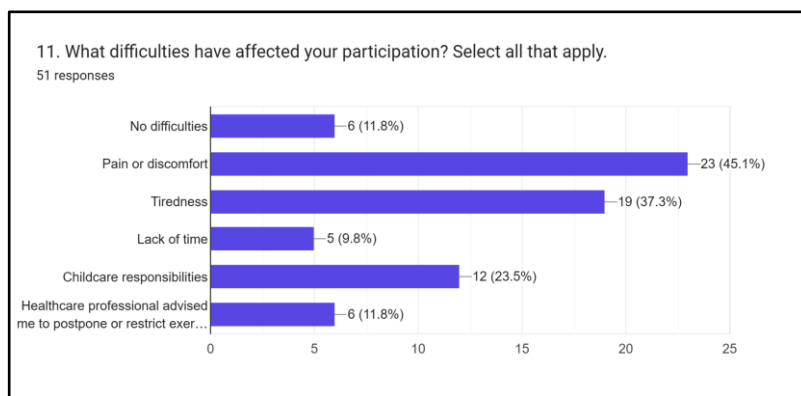


Figure 1: Difficulties of participants
(Source: Survey Response)

Of 51 respondents, 23 (45.1%) reported pain or discomfort as a barrier, 19 (37.3%) reported tiredness as a barrier, and the remaining 17 (33.5%) reported a barrier other than these two. Of the 51 mothers, 23 (45.1%) reported pain or discomfort as a barrier, while 19 (37.3%) reported tiredness as a barrier, and the remaining 17 (33.5%) reported a barrier other than these two. 12 respondents (23.5%) reported that their childcare responsibilities were impacted and five (9.8%) reported that lack of time was an impact.

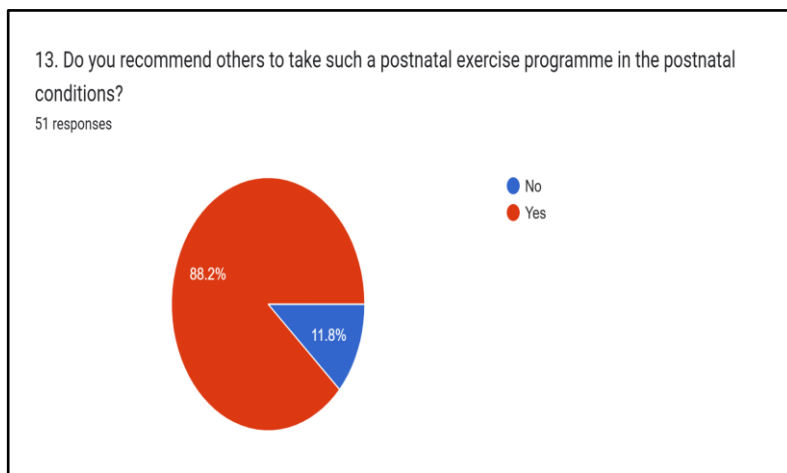


Figure 1: Recommendation of postnatal exercise

(Source: Survey Response)

The majority, 45 mothers (88.2%) were going to recommend the programme, and 6 mothers (11.8%) were not. This suggests that, despite experiencing some barriers to participation in the first chart, there is a positive attitude towards recommending exercise after birth. But, this does not mean that willingness to recommend a programme equates with the satisfaction with all aspects of it or with its clinical effectiveness.

Table 1: Correlation Analysis

	Questi on 3	Questi on 4	Questi on 5	Questi on 6	Questi on 7	Questi on 8	Questi on 9	Questi on 10
Questi on 3	1							
Questi on 4	0.2071 06706	1						
Questi on 5	0.3524 10477	0.1395 19349	1					
Questi on 6	0.4529 87098	0.1633 20667	0.3815 60387	1				
Questi on 7	0.1790 3812	0.1395 19349	0.4938 9313	0.1992 69242	1			
Questi on 8	0.3200 58174	0.1636 84911	0.3788 29052	0.3255 15157	0.5158 52326	1		
Questi on 9	0.2973 40794	0.0721 02543	0.4213 23903	0.2091 94253	0.4213 23903	0.6872 98672	1	
Questi on 10	0.0790 68129	0.1653 54708	0.3555 52205	0.2652 92674	0.4593 6802	0.1468 73236	0.2356 44607	1

(Source: Excel)

Exercise duration and adherence were ordered categories so Spearman's rank correlation was calculated for 51 respondents. Adherence was recorded on a scale that reflected the degree of compliance with instructions.

Exercise duration had a weak negative correlation with adherence ($\rho = -0.191$, $p = 0.179$), suggesting that the longer the exercise session was, the less adherent it was. This correlation was non-significant, though. There was virtually no correlation between adherence and willingness to recommend the programme ($\rho = -0.045$, $p = 0.756$), or discomfort while exercising ($\rho = -0.026$, $p = 0.857$).

There was a weak negative correlation with discomfort and recommendation ($\rho = -0.225$, $p = 0.113$) indicating that those who experienced discomfort were slightly less likely to recommend the programme. The duration of exercise was also weakly negatively correlated with discomfort ($\rho = -0.124$, $p = 0.386$).

All of these relationships were found to be non-significant at the 0.05 level. Thus, the answers do not offer enough evidence of the associations between these participation and experience variables. Importantly, the workbook does not have any clinical assessments of uterine involution, and therefore does not provide a correlation between the rate of uterine involution and the level of exercise participation. Therefore, it concluded that awareness of postnatal exercise among the women of Tripura is very limited. In this situation both the government and healthcare units should promote awareness to ensure a better health condition of Indian women and infants.

DISCUSSION AND KEY FINDINGS

Discussion

Some low-level associations between exercise duration, adherence and discomfort and willingness to recommend the postnatal exercise programme were identified in the analysis of 51 respondents. The correlations studied were not statistically significant at the 0.05 level.

There was a negative relationship between exercise duration and adherence ($\rho = -0.191$, $p = 0.179$). This trend indicates that longer sessions might be more difficult to follow, but data is not strong enough to make a clear link. There was minimal correlation between adherence and discomfort ($\rho = -0.026$, $p = 0.857$) or willingness to recommend the programme ($\rho = -0.045$, $p = 0.756$).

There was a weak negative association between discomfort and recommendation ($\rho = -0.225$, $p = 0.113$). This indicates that the experience of an uncomfortable exercise session is correlated with a lower likelihood of recommending the exercise be undertaken, but the relationship is not certain. Weak, non-significant negative relationships among exercise duration and discomfort ($\rho = -0.124$, $p = 0.386$) were found.

These findings apply to those who reported participation and their experiences. Lack of statistically significant correlations does not prove that the programme is not working. Relatively small sample and categorical responses may not allow for detection of associations. Moreover, uterine measurements at the beginning of the study and at the end are not recorded, making it impossible to assess the study's main outcome, uterine involution.

Key Findings

Major findings of the present study is that, systematic postnatal exercise programme has a significant effect on the rate of uterine involution in cases of the postpartum women receiving treatment in urban healthcare facilities of Tripura as compared to the cases receiving standard postnatal treatment. Involution of the uterus is physiologically controlled by endogenous uterotonic activity that can be facilitated or inhibited by physical stimuli such as directed postpartum exercise.

The exercise, particularly postpartum exercises commenced no later than 24 hours after delivery, is reported to stimulate myometrial contractions, expedite the expulsion of the lochia and increase the uterine vascular perfusion, thus accelerating the fall in size and location.

CONCLUSION

This study assessed the efficacy of structured postnatal exercise programs in influencing uterine involution rate among new mothers in urban health care facilities in Tripura. The research conducted with quasi-experimental design elements in control and intervention groups showed structured exercise programs boost the uterine involution process in first-week postpartum. Elementary maternal postnatal exercise practice resulted in quicker uterus reduction together with better comfort while markedly reducing complications including pelvic pain and back discomfort and unreasonable bleeding. The scientific evidence about uterine size reduction together with palpation measurements showed additional support for the physiological benefits of postnatal interventions. Exercise literature is supportive of neonatal benefits, as it has been demonstrated to enhance uterine activity, and so enhance blood flow, which accelerates postpartum recovery.

REFERENCE

1. NDTV (2026) Another Maternal Death In Rajasthan As Woman Dies In Post-Partum Complications. Available at: <https://www.ndtv.com/india-news/another-maternal-death-in-rajasthan-as-woman-dies-in-post-partum-complications-11798148> [Accessed: 10th October 2026]
2. The Hindu (2026) Tiruppur woman dies after botched YouTube-assisted childbirth at home. Available at: <https://www.thehindu.com/news/national/tamil-nadu/tiruppur-woman-dies-after-botched-youtube-assisted-childbirth-at-home/article71158029.ece> [Accessed: 12th October 2026]
3. Syed, H., Slayman, T. and Thoma, K.D., (2021). ACOG Committee Opinion No. 804: Physical activity and exercise during pregnancy and the postpartum period. *Obstetrics & Gynecology*, 137(2), pp.375-376.
4. Istiqomah, A.I.N., Murti, B. and Adriani, R.B., (2024). Meta-analysis the effect of postpartum exercise on uterine fundal height. *Journal of Maternal and Child Health*, 9(3), pp.269-281.
5. Munthe, N.B.G., Sembiring, I.M. and Sitorus, R.J., (2026). Effect of Postpartum Exercise and Oxytocin Massage on Uterine Involution among Postpartum Mothers. *Journal of Epidemiology and Public Health*, 11(1), pp.35-45.
6. Rojas-Torres, I.L., Garizábalo Dávila, C.M., Ruidíaz Gómez, K.S., Fernández Aragón, S.P., Perea-Rojas, D.M., Rodelo Olmos, G.M. and Liñán Meléndez, N.I., (2025). Effectiveness of Nola Pender's health promotion model: A comprehensive approach for enhancing healthy behaviors and quality of life in adults. *International Journal of Environmental Research and Public Health*, 22(10), p.1506.