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Effectiveness of breathing exercises and Jacobson relaxation technique in postnatal depression among primipara

Abstract

Background: This study aims to assess the efficacy of breathing exercises and Jacobson's relaxation technique in treating postnatal depression. The study included 60 primiparas. Postpartum is the period for the new mothers to experience different kind of emotions at the same time. Various factors, like lack of attention and sleep, cultural belief, age of marriage, economic status, partner support, and other factors, will affect new mother and can lead her into a postpartum depressive state.

Subjects and methods: This study was conducted among 60 primipara population at Saveetha Medical College, Thandalam, Kancheepuram. New mother's details such as personal, medical and socioeconomic history were collected before taking Edinburg postnatal depression scale (EPDS). Mothers who scored in range of 14 to19 according to Edinburgh postnatal depression Scale are included in this study. Participants are divided into two groups: the conventional group and the experimental group, each group has 30 participants and they underwent deep breathing exercises and Jacobson's relaxation exercises for 2 weeks, respectively. After 2 weeks of training, participants were evaluated on the Edinburgh postnatal depression scale and compared before and after treatment.

Results: Postnatal depression showed a notable increase in improvement within the conventional group, which was 10% higher compared to the experimental group. As per the statistical analysis, the conventional group has a significant improvement over the experimental group.

Conclusion: This study reveals that deep breathing exercise is more effective than Jacobson's progressive relaxation exercise to treat postnatal depression in hospitalized primipara.

Keywords: postpartum depression, Jacobson's progressive muscle relaxation techniques, deep breathing exercises, Edinburgh postnatal depression scale

Volume 11 Issue 2 - 2026

Geethapriya Vadamalai,[1] Karthika Ramalingam,[2,3] Nishanth Shanmugam,[4] Kalish Sakthi,[4] Yuvaraj Thangavel[4]

[1]Assistant professor, Faculty of Physiotherapy, Dr MGR Educational and Research Institute, India
[2]Assistant professor, Pachamuthu college of Physiotherapy, Dr MGR Medical University, India
[3]PhD scholar, Saveetha college of Physiotherapy, Saveetha institute of Medical & Technical Sciences, India
[4]Undergraduate student, Pachamuthu college of Physiotherapy, Dr MGR Medical University, India

Correspondence: Karthika Ramalingam, Assistant professor, Pachamuthu college of Physiotherapy, Tamilnadu Dr MGR Medical University, Tamilnadu, India

Received: July 13, 2026 | **Published:** July 22, 2026

Introduction

Every woman's pregnancy and childbirth are significant life events. The physiological events that happen during pregnancy are the outcome of a woman's natural adaptation to better accommodate the growing fetus. Conversely, the psychological shifts that are occurring rely on a number of variables.[1] The postpartum phase lasts for six to eight weeks after the child birth. It starts immediately after birth. This indicates the estimated amount of time needed for the majority of the mother's bodily systems to revert to a non-pregnant condition and for the uterus to undergo involution. The first three weeks of this time are referred to as the early postpartum period, and the following four to six weeks are referred to as the late postpartum period.[2] Postpartum mothers are directly impacted by physiological changes that occur in every system, including the reproductive, endocrine, cardiovascular, renal, and other.[3] At least five of the following nine symptoms have to be present for the diagnosis of postpartum depression to be confirmed during a two-week period: sense of guilt or worthlessness, lack of focus, frequent thoughts of death, with or without suicidal thoughts, weariness, melancholy, emptiness, or hopelessness, loss of interest in or satisfaction from activities, weight loss or decreased appetite, abnormal sleep patterns.[4]

To lower teratogenic hazards, careful monitoring is necessary when using pharmaceutical therapies to treat postpartum depression. In treating moderate to severe depression, antidepressants should be used.[4] Interventions like relaxation techniques can be used to increases calmness. Among these different interventions, progressive muscle relaxation (PMR) is a relaxation technique created by Edmund Jacobson in the 1920s. This technique includes the sequential contractions and relaxation of muscles.[5] The idea behind deep breathing is that relaxation is the result of the union of the mind and body. In addition to massaging around the abdominal area and possibly stimulating the vagus nerve, deep breathing seems to increase blood oxygen levels, which has a beneficial effect on stress and anxiety difficulties.[5] In this study we will compare the effectiveness of two relaxation techniques, such as deep breathing and Jacobson's Progressive Muscle Relaxation Technique, in postpartum depression, to check out the differences in Edinburg postnatal depression scale, which will be recorded and compared between two groups.

Subject and methods

This study includes primipara age group of 21 to 25 years. A total of 72 participants were diagnosed with postpartum depression, after application of inclusion and exclusion criteria 60 primipara mothers were included. Participants personal and medical records been collected and confidentiality is maintained. Participants have been explained about the study, purpose and duration then obtained an informed consent. Participants were divided into two groups. Each group has 30 participants. The conventional group underwent intervention has deep breathing technique, and experimental group

underwent intervention of Jacobson's progressive muscle relaxation technique for a duration of 2 weeks. The study was conducted in Saveetha Medical College, Thandalam. The Edinburgh postnatal depression scale is being used to determine pretest and post- test values. and then questionnaire was explained to each participant, then proceeded with Edinburgh postnatal depression scale assessment, and the pretest score has been recorded. Deep breathing exercises and Jacobson's progressive relaxation exercises were taught to the conventional group and experimental group, respectively, along with the postnatal ergonomic advice and exercises, according to the postnatal day of primipara.

After 2 weeks the post-test score was obtained using the Edinburgh Postnatal Depression Scale, and pre-test and post-test values were analyzed for each group, respectively. Intervention procedure: The Conventional group and experimental group went through interventions such as deep breathing exercises and Jacobson's progressive muscle relaxation exercises, respectively. Deep breathing exercise: The participants were instructed to take a comfortable seat with their hands resting on their laps. They were then instructed to gently press the tip of their tongue against the ridge of tissue behind their upper and lower teeth, keeping it there for the duration of the breathing cycle. Breathe in deeply through their noses for four counts, hold their breath for seven counts, and then exhale slowly through their mouths for eight counts. This breathing cycle was repeated eight or ten times. Participants were instructed to practice these exercises for 4 sets each day and weekly 6 days with a rest period 1day for 2 weeks.[6] Jacobson Muscle Relaxation Technique: One of the most efficient relaxing methods is Progressive Muscle Relaxation (PMR).[7] Before starting, participants were given explanation about the method and exercise instructions were given, and also obtained consent forms from the participants; hence, the exercises have been started. The detailed process reference in Figure 1. Participants were instructed to practice technique, which has 2 sets each day for 6 days with a rest period of 1 day for 2 weeks.

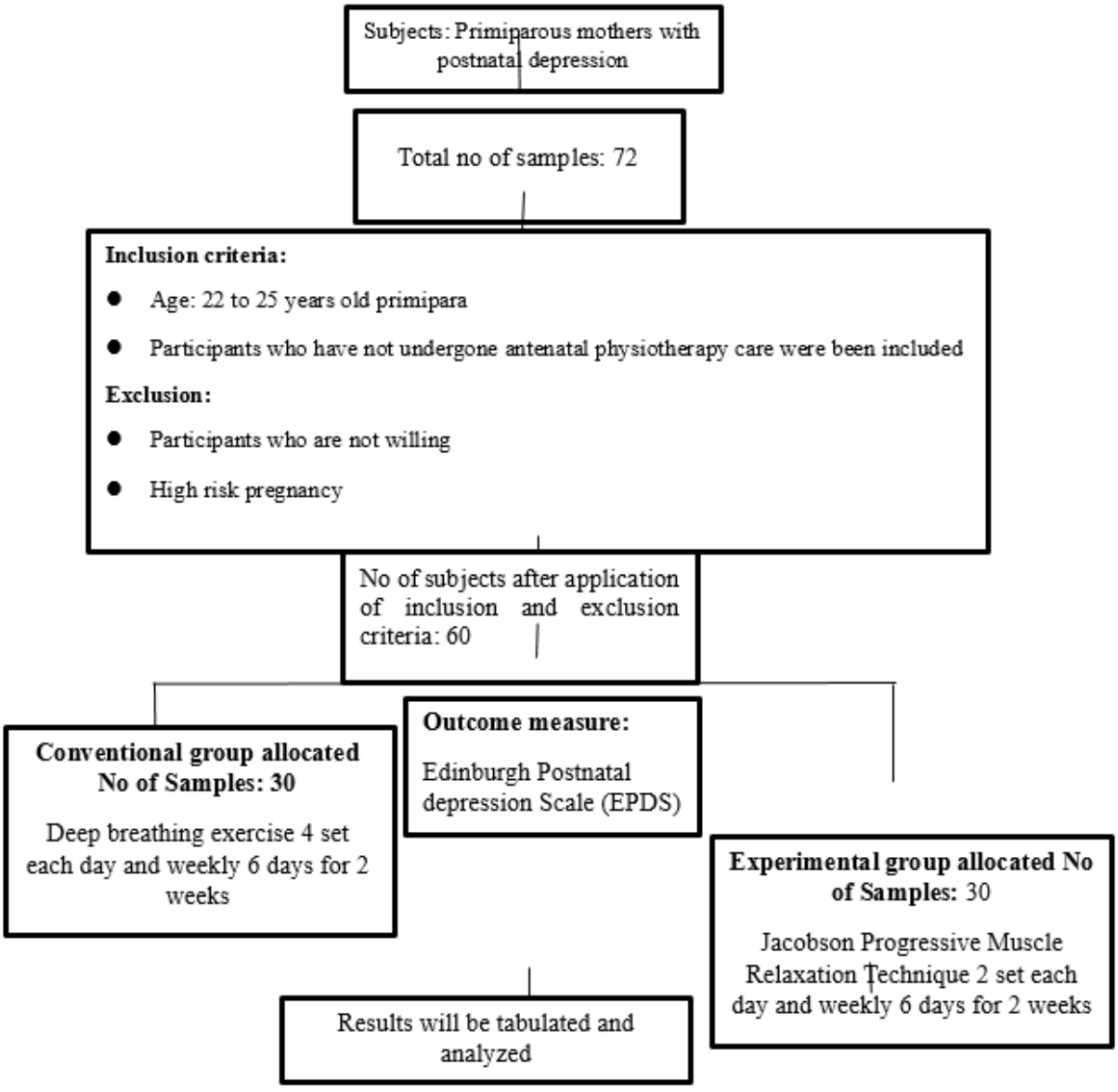


Figure 1 Jacobson Progressive Muscle Relaxation Technique.[7]

Citation: Vadamalai G, Ramalingam K, Shanmugam N, et al. Effectiveness of breathing exercises and Jacobson relaxation technique in postnatal depression among primipara. *Int Phys Med Rehab J.* 2026;11(2):43–46. DOI: 10.15406/ipmrj.2026.11.00416

Statistical methods

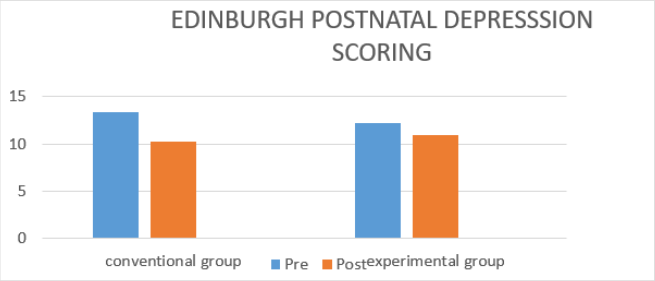
The present study's statistical intervention was made through the descriptive statistical data analysis method. Outcome measures were analyzed and presented as means. Pre- and post- intervention for individual groups were calculated with a Parried t- test, were as Analysis between groups to rule out effectiveness was done by Unpaired t-test. Significance is assessed at 5% level of significance with p value was set as 0.0001 with the confidence interval of 95%, less than that is considered as statistically significant difference. Data for statistical analysis was taken through Edinburgh postnatal depression scale.

Results

Graph 1 the statistical analysis shows the mean variation pre-test to post test score in both groups. Conventional group has mean pre-test value of 13.26 and post-test value 10.26. Experimental group has mean of pre-test value 12.20 and post-test of 11 according to Edinburgh postnatal depression scale. T value obtained with analyses 6.1306. The level of significance was is less than 0.0001. According to Table 1.

Table 1 Result

S.NO	Group	Pre-test mean (EPDS)	Post test mean (EPDS)	T Value	Level of significance
1	Conventional group	13.26	10.26	6.1306	<0.0001
2	Experimental group	12.2	11		



Graph 1 Data representation

Discussion

The postpartum phase is the period of time that begins immediately after the delivery and lasts for about six weeks. Terms like puerperium and puerperal period are less frequently used. In a mother's and baby's life, the postnatal phase is the most important-yet least acknowledged-period, according to the WHO. The mother's body returns to its pre-pregnancy state in terms of hormone levels and uterus size after delivering birth.[8] The confluence of cultural, interpersonal, and socioeconomic factors may also significantly raise the risk of Postpartum Depression (PPD). For example, a study organized in Goa, India, found that the infant's gender, marital violence, and economic deprivation all increased the risk of depression following delivery.[9] These risks also interfere with treatment approach planning. The approach which should be practiced in the first line of practice requires easy processing and better understanding. Baqir SR et al. conducted a review study on physiotherapy treatment in postnatal women and concluded that physiotherapy treatment prevents complications such has back pain, muscle weakness, postpartum depression, weight gain, and other complications. This review also facilitates the concept of postpartum physiotherapy care and promotes the guidelines of physical therapy in the postnatal period.[10] Toussaint et al, this study reveals that guided imagery, deep breathing, and PMR provide viable changes in relaxation at the psychological level of analysis. Deep breathing's effects are still being investigated, although at the physiological level of analysis, PMR and guided imagery provide a good improvement in relaxation.[5]

Gokin and colleagues researched the impact of progressive muscle relaxation on postpartum depression risk and general comfort in first-time mothers, finding that PMR could help reduce the risk of postpartum depression and enhance overall comfort. During home visits, PMR can be provided to help women manage their mental health concerns after childbirth.[11] Saeideh Nasiri et al. conducted research on how progressive muscle relaxation and guided imagery impact stress, anxiety, and depression in pregnant women seen at health centers found that postpartum mothers can experience reduced stress, anxiety, and depression with six sessions of progressive muscle relaxation. It can also be used as it is a low-cost intervention.[12] Khadyga Sayed Abd El-Aziz et al. conducted research on effect of relaxation exercises on postpartum depression and concluded that relaxation exercise is very effective in treating postpartum depression.[8] The experimental group underwent Jacobson Muscle Relaxation Technique, and the conventional group had the intervention of deep breathing exercise. Comparatively deep breathing exercise had better outcome because it had a better understanding and a shorter duration of time to practice.

Limitations and suggestions

i. Most of the mothers are from rural area, so postpartum physiotherapy care awareness was lower.

ii. The Study is done in hospital setup; the relaxation technique would have improvised results if done in a suitable environment.

iii. Family education was less approachable because of negative social pressure.

Conclusion

This study shows that deep breathing exercises techniques for postpartum depression have effective results compared to the practiced Jacobson Progressive muscle relaxation technique in primipara. Deep breathing exercise has its own benefit for mothers to understand easily and perform it effectively. The purpose of the study is to address the difficulties of new mother which is less outspoken by individuals and also to create awareness about the health care availabilities. This action may improvise pregnancy experience of mothers.

Acknowledgments

The author would like to thank all the participant who participated in the study.

Conflicts of interest

The authors declares that there are no conflicts of interest.

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