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Research Article

EFFECTIVENESS OF JACOBSON'S PROGRESSIVE MUSCLE RELAXATION TECHNIQUE ON LEVEL OF PAIN AMONG POST-CAESAREAN MOTHERS IN SELECTED HOSPITALS

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ABSTRACT:

Background: Pain following caesarean birth may affect comfort, mobility, rest, and early maternal care. Jacobson's Progressive Muscle Relaxation Technique (JPMRT) is a non-pharmacological relaxation approach that may be used alongside routine postoperative care.

Aim: To assess the effectiveness of Jacobson's Progressive Muscle Relaxation Technique on the level of pain among post-caesarean mothers in selected hospitals.

Methods: A quantitative evaluative approach with a quasi-experimental two-group pre-test–post-test design was reported. Sixty post-caesarean mothers were selected by purposive sampling, with 30 in the control group and 30 in the experimental group. Pain was measured using the Numerical Pain Rating Scale. The experimental group

received JPMRT twice daily from postoperative day 1 through day 3; the control group received routine care.

Results: The experimental group's reported mean pain score decreased from 7.80 (SD 0.96) at pre-test to 0.50 (SD 0.63) at post-test. The dissertation reports a paired t statistic of 34.80 ($p < 0.05$). However, the between-group post-test table contains values that conflict with these results; the comparative analysis must be verified against the original dataset.

Conclusion: The reported within-group results suggest a reduction in pain scores after JPMRT. A conclusion about comparative effectiveness should be finalized only after the source data and between-group statistics have been checked.

Keywords: Jacobson's progressive muscle relaxation; caesarean section; postoperative pain; Numerical Pain Rating Scale; nursing intervention.

INTRODUCTION

Caesarean section is a common obstetric surgical procedure, and postoperative pain can interfere with comfort, movement, rest, breastfeeding, and early care of the newborn. Appropriate pain management is an important part of post-caesarean nursing care. Global caesarean delivery trends have increased attention to safe surgical and postpartum care [1]. Evidence-based postoperative pain guidance supports multimodal pain management, while severe acute pain after childbirth may be associated with persistent pain and postpartum depression [2,3]. Non-pharmacological methods can be used as complementary measures alongside prescribed analgesics and routine care.

Jacobson's Progressive Muscle Relaxation Technique involves deliberately tensing and relaxing different muscle groups in sequence. The method was described by Jacobson in his works on relaxation and muscular states [4,5]. Studies have examined relaxation and music for postsurgical pain [6], as well as progressive muscle relaxation for postoperative pain and analgesic consumption [7]. Research specifically concerning post-caesarean mothers has examined pain, sleep quality, and activity limitation following Jacobson's relaxation technique [8–10]. Other studies in the dissertation's literature review address post-caesarean pain measurement and physical activity limitation [11], relaxation therapy for postoperative pain [12,13], chronic pain after caesarean section [14], and evidence-based stress-management techniques [15]. The present study assessed changes in pain levels among post-caesarean mothers receiving JPMRT in selected hospitals.

AIM AND OBJECTIVES

Aim: To assess the effectiveness of Jacobson's Progressive Muscle Relaxation Technique on level of pain among post-caesarean mothers in selected hospitals.

To assess pre-test pain levels among post-caesarean mothers in the control and experimental groups.

To assess the change in pain scores from pre-test to post-test in the experimental group after JPMRT.

To compare post-test pain scores between the control and experimental groups.

HYPOTHESES

H_0: There is no significant difference between pre-test and post-test pain scores in the study groups.

H_1: There is a significant difference between pre-test and post-test pain scores among post-caesarean mothers in the experimental group.

MATERIALS AND METHODS

Design and setting

The dissertation describes a quantitative evaluative approach and a quasi-experimental two-group pre-test–post-test design conducted in selected maternity hospitals.

Participants and sampling

The reported sample consisted of 60 post-caesarean mothers: 30 in the control group and 30 in the experimental group. Purposive sampling was used. The dissertation reports excluding mothers with postoperative complications and those unwilling to participate. The data-collection period is reported as 15 December 2025 to 15 January 2026.

Intervention

The experimental group received JPMRT twice daily from postoperative day 1 through day 3. The dissertation describes sessions of 20 minutes and states that post-test pain was assessed one hour after the intervention; it also states that the intervention was scheduled two hours before analgesic medication. The control group received routine care. These details should be checked against the approved protocol before submission.

Outcome measure

Pain was assessed using the Numerical Pain Rating Scale from 0 to 10: 0 indicates no pain, 1–3 mild pain, 4–6 moderate pain, and 7–10 severe pain.

Ethical considerations

The dissertation reports that written informed consent and institutional permissions were obtained. The official ethics committee name, approval date, and approval/reference number must be copied exactly from the signed approval letter. The number MUHS/PG/1521109/263 was supplied in earlier manuscript instructions, but its designation must be confirmed; it should not be labelled an ethics approval number unless the official document identifies it as such.

Statistical analysis

The dissertation reports descriptive statistics and paired and unpaired t-tests. The participant-level dataset and statistical outputs must be rechecked before publication because the reported between-group post-test table conflicts with the experimental-group results.

RESULTS

The following values are transcribed from the dissertation. The experimental-group pre-test and post-test means are reported in the results chapter as 7.80 and 0.50, respectively. The separate between-group post-test table is inconsistent and is not treated as a valid comparative result in this manuscript.

Group / assessment	n	Mean pain score	SD
Control group, pre-test	30	6.20	1.24
Experimental group, pre-test	30	7.80	0.96

Experimental group, post-test	30	0.50	0.63

The dissertation reports that, at pre-test, 17 control-group participants (56.67%) had moderate pain and 13 (43.33%) had severe pain. In the experimental group, 3 participants (10%) had moderate pain and 27 (90%) had severe pain.

For the experimental group, the dissertation reports a paired t statistic of 34.80 with $p < 0.05$. This value is transcribed from the source and has not been independently recalculated.

The dissertation's between-group post-test table lists a control-group mean of 0.57 (SD 1.96) and an experimental-group mean of 7.30 (SD 1.09), with an unpaired t statistic of 16.45 ($p < 0.05$). These values conflict with the reported experimental-group post-test mean of 0.50. They must be checked against the original data before the between-group comparison is interpreted.

DISCUSSION

The dissertation reports a decrease in the experimental group's mean pain score from 7.80 at pre-test to 0.50 at post-test, with a reported statistically significant paired test. This direction of change is consistent with previous studies examining relaxation-based interventions for postoperative pain, including gynaecological and post-caesarean contexts [7–10,12,13]. However, a within-group change alone does not establish that JPMRT caused the change or that it was more effective than routine care.

A reliable comparison requires accurate post-test data for both groups. Because the source dissertation contains conflicting between-group values, the original participant-level dataset, group labels, scoring sheets, and statistical output should be checked and the relevant descriptive statistics and test recalculated before submission.

LIMITATIONS

Purposive sampling and a quasi-experimental design may limit generalizability.

Participant-level data were not available here for independent recalculation of the reported statistical tests.

The between-group post-test statistics and exact ethics approval details require verification.

CONCLUSION

The dissertation reports a reduction in the experimental group's mean pain score following JPMRT. A definitive conclusion about comparative effectiveness should be made only after the original dataset and between-group analysis have been verified.

DECLARATIONS

Funding: No external funding was reported for this study.

Conflict of interest: The authors declare no conflict of interest.

Data availability: The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to institutional ethical requirements and participant confidentiality.

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