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A study to assess the effectiveness of Jacobson's Progressive Muscle Relaxation technique on pain management among postcesarean mothers at a selected hospital in Rohtas, Bihar

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Abstract

Objective of the study: To assess and compare the pre-test level of pain among post-cesarean mothers in the study and control group. To assess and compare the post-test level of pain among post-cesarean mothers in the study and control group. To determine the effectiveness of Jacobson's Progressive Muscle Relaxation (JPMR) technique on pain management among post-cesarean mothers in the study group. To associate the pre-test and post-test level of pain among post-cesarean mothers with their selected demographic and obstetrical variables in both study and control groups.

Methods: A true experimental pre-test and post-test control group design was adopted. Fifty post-caesarean mothers were selected using purposive sampling and allocated to experimental (n=25) and control (n=25) groups. The experimental group received JPMR sessions from Day 1 to Day 5 post-surgery, while the control group received routine care. Pain was assessed using the Visual Analog Scale (VAS). Data were analysed using descriptive and inferential statistics, including paired and unpaired t-tests.

Results: The experimental group showed a significant reduction in pain scores post-intervention (mean = 0.48) compared to the control group (mean =1.16).

Conclusion: Jacobson's Muscle Relaxation Technique is effective, safe, and non-invasive for reducing post-caesarean Pain. Its integration into routine postnatal care can enhance maternal recovery and reduce analgesic dependency.

Keywords: Jacobson's muscle relaxation, caesarean section, post operative pain, non-pharmacological**.** intervention, visual analog scale

Introduction

Pain is the most distressing response in the early post operative period. Patients with post operative pain has different response according to pain and opioids. Experiencing pain is a combination of physiological and psychological features and is a non-persistent tissue damage. Pain sensitivity is more in females than males. cesarean section is one of the major surgeries that causes pain. Surgery threatens the integrity of body by biologically, psychologically, socially and spiritually which causes discomfort as pain. Post operative pain is due to the increased neural input from incised nerves, muscles and tissues. Reflex muscle contraction may be a secondary source of pain. Pain in post-cesarean section can be managed by pharmacological and nonpharmacological approaches. One non-pharmacological approach to decrease pain is relaxation therapy. So, it is important to have adjunct therapy like relaxation to reduce pain by interrupting the post operative cycle of pain, muscle tension and sympathetic activity

Problem Statement

"A study to assess the effectiveness of jacobson's progressive muscle relaxation technique on pain management among post cesarean mothers at a selected hospital in Rohtas, Bihar."

Objective of the study

To assess and compare the pre-test level of pain among post-cesarean mothers in the study and control group.
To assess and compare the post-test level of pain among post-cesarean mothers in the study and control group.
To determine the effectiveness of Jacobson's Progressive Muscle Relaxation (JPMR) technique on pain management among post-cesarean mothers in the study group.
To associate the pre-test and post-test level of pain among post-cesarean mothers with their selected demographic and obstetrical variables in both study and control groups.

Research Design

A true experimental randomized control group pre-test and post-test research design was employed. This design enabled the investigator to compare pain levels between a study group and a control group without random assignment, which was suitable due to practical and ethical constraints in the hospital setting.

Population

Target population: All postnatal mothers.
Accessible Population: All postnatal mothers of Narayan medical college & hospital of jamuhar Rohtas.

Sample

The sample consisted of 50 post cesarean mothers. 25 mothers in the experimental study group

25 mothers in the control group.

Sampling Technique
Purposive sampling technique was used for this study.

Sample Size
Determine based on power analysis (n = 50), 25 experimental study, 25 control.

Sampling Criteria
In sampling criteria, the researcher specific the characteristics of the population under the study by detailing the inclusion and exclusion criteria. Inclusion criteria are characteristics that each sample element must possess to be included in the sample. Exclusion criteria are characteristics that could confound result of the study therefore such participant is excluded from the study.

Inclusion Criteria
- Post cesarean mothers within 24–72 hours post operation
- Post cesarean mothers who were conscious, cooperative, and willing to
- participate Post cesarean mothers aged 20- 35 years within 42 days of delivery.
- Post cesarean mother who were willing to participate in the study.
- Post cesarean mother who were tolerable in performing muscles relaxation technique.

Exclusion Criteria
- Post cesarean mothers with post operative complications.
- Post cesarean mothers with severe medical or psychiatric illness.
- Post cesarean mothers receiving additional pain management therapies.
- Post cesarean mothers beyond 42 days after delivery.

Data Collection Procedure
The data collection procedure was done for a period of one week. A written permission obtained from the nursing superidendent to conduct the study in the OBG & GYNEE department NMCH, Rohtas, Bihar.
The researcher met the subjects and explained about the purpose of the research and assured confidentially and anonymity and consent were obtained from the subjects. 50 samples were selected using purposive sampling technique. The researcher adopted quasi experimental pre-test and post test research design. The demographic variables were collected by using Numerical Pain Rating Scale. During pre-test was Jacobson's progressive muscle relaxation technique for pain management in post cesarean mothers measured by Numerical Pain Rating Scale. This had 10 questions for 15 minutes. Then the subjects received self knowledge given pain management in post cesarean mothers for 30 mits. Post test was done by researcher as lime pre-test to Effectiveness of Jacobson's progressive muscle relaxation technique for pain management in post cesarean mothers.

Table 1: Frequency and Percentage Distribution of Selected Demographic Variables among Post Caesarean Mothers in Experimental group

S. No.	Demographic Variables	Frequency (F) N=25	Percentage (%)
1.	Age in Years		
	18-22	6	24%
	23-27	10	40%
	28-32	5	20%
	Above 32	4	16%
2.	Religion		
	Hindu	20	80%
	Muslim	3	12%
	Christian	2	8%
	Other	0	0%
3.	Education		
	No formal education	0	0%
	Primary education	13	52%
	Secondary education	6	24%
	Higher secondary education	3	12%
	Graduation	3	12%
	Post-graduation and above	0	0%
4.	Residential Area		
	Urban	7	28%
	Rural	18	72%
	Semi urban	0	0&
5.	Occupation		
	Private job	3	12%
	Government job	1	4%
	Self employed	0	0%
	Self employed	21	84%
6.	Monthly Income		
	Less than RS.10000/-	15	60%
	10000-20000/-	4	16%
	20000-30000/-	2	8%
	30000-40000/-	3	12%
	Above 40000/-	1	4%
7.	Types of Family		

	Nuclear family	9	36%
	Joint family	14	56%
	Extended family	2	8%
8.	Types of Caesarean Section		
	ELECTIVE CS	18	72%
	EMERGENCY CS	7	28%
9.	Number of Children		
	1	6	24%
	2	12	48%
	3	4	16%
	MORE THAN 3	3	12%

The section-1 indicates the AGE GROUP of Post Caesarean Mother's, 6(24%) of them belong to 18--22 years of age, 10(40%) of them belong to 23-27 years, 5(20%) of them belong to 28-32 years, 4(16%) of them belong to 32 year above. The section-2 With regard to RELIGION of Post Caesarean Mothers, 20(80%) of them belong to Hindu, 3(12%) of them belong to Muslim, 2(8%) of them belong to Christian, 0(0%) of them belong to other. The section-3 While considering the EDUCATION of Post Caesarean Mothers, 0(0%) of them were no formal education, 13(52%) of them were primary education, 6(24%) of them were secondary education, 3(12%) of them were higher secondary education. 3(12%) of them were Graduation, 0(0%) of them were Post-graduation and above. The section-4 Regarding RESIDENTIAL AREA of Post Caesarean Mothers, 7(28%) of them were urban area, 18(72%) of them were Rural area, 0(0%) of them were semi Urban area, the section-5 Regarding OCCUPATION of Post Caesarean Mothers, 3(12%) of them were private job, 1(4%) of them were Government job, 0(0%) of them were self employed, 21(84%) of them were home maker. The section-6 Regarding MONTHLY INCOME of Post Caesarean Mothers, 15(60%) of them were less than 10000, 4(16%) of them were 10000-20000, 2(8%) of them were 20000-30000, 3(12%) of them were 30000-40000 above. 1(4%) of them were 40000 above. The section-7 Regarding TYPES OF FAMILY of Post Caesarean Mothers, 9(36%) of them were nuclear family, 14(56%) of them were joint family, 2(8%) of them were extended family. The section-8 Regarding TYPES OF CAESAREAN SECTION of Post Caesarean Mothers, 18(72%) of them were elective Cs, 7(28%) of them were emergency Cs. The section-9 Regarding NUMBER OF CHILDREN of Post Caesarean Mothers, 6(24%) of them were 1 child, 12(48%) of them were 2 children, 4(16%) of them were 3 children, 3(12%) of them were more than 3 children, Table – 2

Table 2: Frequency and Percentage Distribution of Selected Demographic Variables among Post Caesarean Mothers in Control group

S. No.	Demographic Variables	Frequency (F) N=25	Percentage (%)
1.	Age in Years		
	18-22	5	20%
	23-27	10	40%
	28-32	10	40%
	Above 32	1	4%
2.	Religion		
	Hindu	18	72%
	Muslim	7	28%
	Christian	0	0%
	Other	0	0%
3.	Education		
	No formal education	0	0%
	Primary education	12	48%
	Secondary education	7	28%
	Higher secondary education	4	16%
	Graduation	2	8%
	Post-graduation and above	0	0%
4.	Residential Area		
	Urban	6	24%
	Rural	15	60%
	Semi urban	0	0%
5.	Occupation		
	Private job	4	16%
	Government job	0	0%
	Self employed	1	4%
	Self employed	20	80%
6.	Monthly Income		
	Less than RS.10000/-	12	48%
	10000-20000/-	8	32%
	20000-30000/-	3	12%
	30000-40000/-	2	8%
	Above 40000/-	0	0%
7.	Types of Family		

	Nuclear family	12	48%
	Joint family	13	52%
	Extended family	0	0%
8.	Types of Caesarean Section		
	ELECTIVE CS	16	64%
	EMERGENCY CS	9	36%
9.	Number of Children		
	1	8	32%
	2	11	44%
	3	5	20%
	MORE THAN 3	1	4%

The section-1 indicates the AGE GROUP of Post Caesarean Mothers, 5(20%) of them belong to 18--22 years of age, 10(40%) of them belong to 23-27 years, 10(40%) of them belong to 28-32 years, 1(4%) of them belong to 32 year above. The section-2 With regard to RELIGION of Post Caesarean Mothers, 18(72%) of them belong to Hindu, 7(28%) of them belong to Muslim, 0(0%) of them belong to Christian, 0(0%) of them belong to other. The section-3 While considering THE EDUCATION of Post Caesarean Mothers, 0(0%) of them were no formal education, 12(48%) of them were primary education, 7(28%) of them were secondary education, 4(16%) of them were higher secondary education. 2(8%) of them were Graduation, 0(0%) of them were Post-graduation and above. The section-4 Regarding RESIDENTIAL AREA of Post Caesarean Mothers, 6(24%) of them were urban area, 15(60%) of them were Rural area, 0(0%) of them were semi Urban area. The section-5 Regarding OCCUPATION of Post Caesarean Mothers, 4(16%) of them were private job, 0(0%) of them were Government job, 1(4%) of them were self employed, 20(80%) of them were home maker. The section-6 Regarding MONTHLY INCOME of Post Caesarean Mothers, 12(48%) of them were less than 10000, 8(32%) of them were 10000-20000, 3(12%) of them were 20000-30000, 2(8%) of them were 30000-40000 above. 0(0%) of them were 40000 above. The section-7 Regarding TYPES OF FAMILY of Post Caesarean Mothers, 12(48%) of them were nuclear family, 13(52%) of them were joint family, 0(0%) of them were extended family. The section-8 Regarding TYPES OF CAESAREAN SECTION of Post Caesarean Mothers, 16(64%) of them were elective Cs, 9(36%) of them were emergency Cs. The section -9 Regarding NUMBER OF CHILDREN of Post Caesarean Mothers, 8(32%) of them were 1 child, 11(44%) of them were 2 children, 5(20%) of them were 3 children, 1(4%) of them were more than 3 children.

Table 3: Frequency and percentage Distribution of Pre-test level and Post-test level of Pain among Post Caesarean Mothers in Experimental Group

Level of Pain in Experimental Group	Pre-Test		Post Test	
	Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)
No pain	0	0%	13	52%
mild pain	0	0%	12	48%
moderate pain	0	0%	0	0%
severe pain	15	60%	0	0%
worst pain	10	40%	0	0%

From the table below finding given

In post test level of pain in pre-test experimental group, no pain = 0%, mild pain = 0%, moderate pain = 0%, sever pain = 60%, and worst pain = 40%

In post test level of pain in post test experimental group, no pain = 52%, mild pain = 48%, moderate pain = 0%, sever pain = 00%, and worst pain = 0%

Table - 2.2 Frequency and percentage distribution of Pre-test Level and Post- test Level of Jacobson's Muscle Relaxation Technique among Post Caesarean Mothers in Hospital in Control Group. N= 25

Level of Pain in Experimental Group	Pre-Test		Post Test	
	Frequenc y (F)	Percentag e (%)	Frequenc y (F)	Percentage (%)
No pain	0	0%	0	0%
mild pain	0	0%	21	84%
moderate pain	0	0%	4	16%
severe pain	12	48%	0	0%
worst pain	13	52%	0	0%

From the table below finding given

In post test level of pain in pre-test experimental group, no pain = 0%, mild pain = 0%, moderate pain = 0%, sever pain = 48%, and worst pain = 52%

In post test level of pain in post test experimental group, no pain = 0%, mild pain = 84%, moderate pain = 16%, sever pain = 0%, and worst pain = 0%

Difference between the mean pre-test and post-test score of pain among experimental group of Post Caesarean Mothers.

Table 4: Difference between the mean pre-test and post-test pain among experimental group of Post Caesarean Mothers

Experimental Group	Mean	SD	Mean difference	t value	p value	Interpretation
PRE-TEST	3.40	~0.52	2.92	20.45	<0.0001	Significant
POST TEST	0.48		0.51			

From the table below finding given

In pre-test the mean = 3.40, SD = ~0.52 In post test the mean = 0.48, SD = 0.51

Table - 3.2 - Difference between the mean pre-test and post-test score of pain among control group of Post Caesarean Mothers

Experimental Group	Mean	SD	Mean difference	t value	p value	Interpretation
PRE-TEST	3.52	0.51	0.14	18.72	<0.0001	Significant
POST TEST	1.16	0.37				

From the table below finding given in pre-test the mean – 3.52, SD - 0.51 In post test the mean – 1.16, SD – 0.37

Table 5: Difference between mean post test scores of pains between experimental and control group of Post Caesarean Mothers.

Posttest	Mean	SD	t value	p value	Interpretation
Experimental Group	0.48	0.51	5.38	~0.0001	Significant
Control Group	1.16	0.37			

From the table below finding given

In experimental group the mean – 0.48, SD - 0.51 In control group the mean – 1.16, SD – 0.37

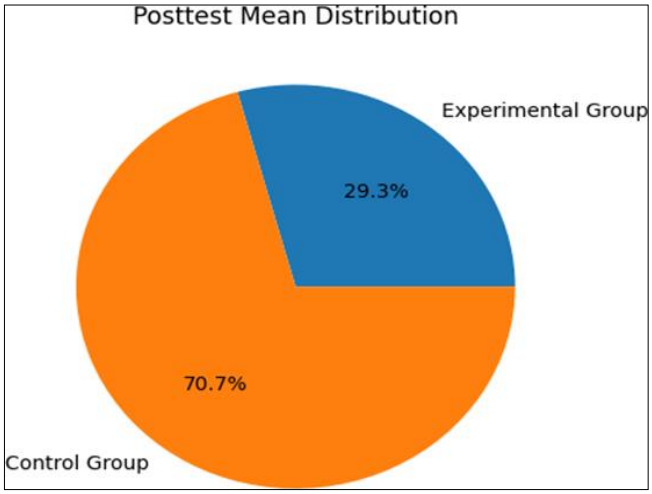

Fig 4: Difference between mean post test scores of pains between experimental and control group of post caesarean mothers.

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