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Evaluating the Impact of Benson's Relaxation Therapy on Post Caesarean Section Stress among Post Caesarean Mothers admitted at selected hospital of Chikhli, Navsari: A Quasi-Experimental Study

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ABSTRACT

One Background: Caesarean section (C-section) is among the most frequently performed surgical procedures globally, accounting for approximately 21% of all births worldwide (World Health Organization, 2021). While it is often performed to safeguard the health of the mother and/or fetus in cases of obstetric complications, it is not without consequences. Mothers who undergo caesarean delivery often face both physical and psychological challenges during the postoperative period. Aim: To evaluate the effectiveness of Benson's Relaxation Therapy in reducing post-caesarean section stress among post-caesarean mothers admitted at a selected hospital of Chikhli, Navsari. Methodology: A quasi-experimental, non-equivalent control group (pretest–posttest) design was conducted in a postnatal ward at selected hospital of Chikhli, Navsari. A total 30 eligible primipara and multipara post caesarean mothers were selected by using non-probability purposive sampling technique to assess the effectiveness of Benson's Relaxation Therapy on Post Caesarean Section Stress among Post Caesarean Mother. Ethical clearance was obtained (Approval No. EC/NEW/INST/2023/GJ/0331). Participants were divided equally into experimental and control groups. Experimental group received an intervention for three consecutive days, while control group received routine care. After completing of the three consecutive days of intervention, post-test data were collected. Statistical Analysis Data were analysed using SPSS version 25.0. A validated tool developed with expert input (Cronbach's $\alpha = 0.84$) was used for data collection. Data were analyzed using descriptive and inferential statistics. Descriptive statistics such as frequency, percentage were used to summarize demographic characteristics and outcome measures. Inferential statistics included: Paired t-test to compare pretest and post-test stress scores within each group. Unpaired (independent) t-test to compare post test scores between experimental and control groups. Chi-square test to assess associations between selected demographic variables and pretest score. p-value < 0.05 was considered statistically significant for all tests. Results: The table-2 depicts that stress scores between the experimental and control groups revealed a significant reduction in stress levels among mothers who received Benson's Relaxation Therapy. In the experimental group, the mean pretest stress score was 26.6 ± 3.1, which decreased markedly to 17.1 ± 2.5 in the post-test, yielding a mean difference of 9.5. The difference was statistically significant, with t-value of 8.43 and p-value of < 0.001, indicating a highly significant effect of the intervention. Conclusion: These findings clearly demonstrate the effectiveness of Benson's Relaxation Therapy in significantly reducing stress among post caesarean mothers in the experimental group compared to those who received only routine care.

INTRODUCTION

Caesarean section (C-section) is among the most frequently performed surgical procedures globally, accounting for approximately 21% of all births

worldwide (World Health Organization [WHO] 2021). While it is often performed to safeguard the health of the mother and/or fetus in cases of obstetric complications, it is not without consequences. Mothers who undergo cesarean delivery often face both physical and psychological challenges during the postoperative period. These challenges include acute postoperative pain, limited mobility, delayed initiation of breastfeeding, concerns about wound healing, prolonged hospital stays, hormonal imbalances, and anxiety regarding maternal role functioning (Karlström et al., 2013; Ghanbari-Homaie et al., 2018). The cumulative effect of these factors can lead to elevated levels of stress in post cesarean mothers, which may adversely impact their recovery and the early stages of mother-infant bonding.

Due to possible side-effects, cost, or limited access to pharmacological interventions, non-pharmacological therapies are of growing interest as adjuncts to standard postoperative care. These interventions may help reduce stress, pain, and anxiety, improve sleep quality, and promote faster and safer recovery.

One such intervention is Benson's Relaxation Therapy (also known as Benson's Relaxation Technique). Developed by Herbert Benson, BRT combines elements of meditation, deep breathing, and relaxation response. It is simple to teach, low-cost, requires no special equipment, and has been tested in various populations for its effects in reducing stress, pain, anxiety, and improving sleep quality (Mervat Gaber Zaghloul et al. 2022)

OBJECTIVES OF THE STUDY

1. To assess the pre-test level of stress among post-caesarean section mothers before administering Benson's Relaxation Therapy
2. To administer Benson's Relaxation Therapy to post-caesarean section mothers in the experimental group.
3. To assess the post-test level of stress among post-caesarean section mothers after administering Benson's Relaxation Therapy.
4. To compare the pre-test and post-test levels of stress among post caesarean section mothers in both the groups.
5. To find the association between post-test stress levels of post-caesarean mothers and their selected demographic variables (such as age, education, type of family, number of children, type of delivery, etc)

METHODOLOGY

Study Design: A quasi-experimental, non-equivalent control group (pretest–post-test) was employed to assess the effectiveness of Benson's Relaxation Therapy on Post Caesarean Section Stress among Post Caesarean Mother.

Study Setting and Duration: The study was conducted in a Selected hospital of Chikhli, Navsari over a period of three months from January to March 2024 with total 30 samples in both control and experimental group. A non-probability purposive sampling technique was used to select eligible participants.

Population and Sampling: The study population comprised postnatal mothers in postnatal ward in selected hospital of Chikhli, Navsari. A non-probability purposive sampling technique with 30 samples

Inclusion Criteria

Post caesarean mothers who are;

- All Primipara and multipara post caesarean mothers from first post operative day to third day of hospitalization who had undergone elective/ emergency caesarean section with spinal anesthesia
- Mothers who are able to follow the instructions.
- Available at the time of data collection
- Able to understand Hindi/Gujarati.

Exclusion Criteria

Post caesarean mothers who are,

- Mothers with neuromuscular problems in lower extremities.
- Mothers with cardiovascular, respiratory and psychological problems.
- Having post caesarean complication with systemic illness
- Mothers who are not willing to participate in the study

A total of **30 participants** were selected and divided equally into two groups:

- **Experimental Group (n = 15)**: Received the Benson's Relaxation Therapy in addition to routine care.
- **Control Group (n = 15)**: Received only routine antenatal care without any therapy.

Participants were assigned to groups based on their availability and willingness to participate in the intervention.

Ethical Considerations:

- Obtain Institutional Ethics Committee approval from Rotary Eye Institute Ethical Committee, Navsari (Approval No-EC/NEW/INST/2023/GJ/0331)
- All participants were briefed about the purpose of the study, the voluntary nature of participation, and their right to withdraw at any time.
- Written informed consent from participants.
- Ensure privacy during sessions and confidentiality of data.
- Explain that BRT is optional and will not replace medical care; allow withdrawal anytime.

DATA COLLECTION TOOL AND PROCESS

A structured, validated tool was developed to collect data related to the study objectives. The instrument consisted of two sections:

Section- I Demographic Variables- age, religion, education of the mother, occupation of the mother, Monthly income of the family (in Rs), Type of family, Area of residence, Parity, Previous history of Caesarean section, Indication for Caesarean delivery, Source of information, Gender of the baby, have you undergone yoga classes, have you undergone parenthood classes, from whom you get social support after Caesarean delivery.

Section II- Perceived Stress Scale [PSS-14]. There were 14 questions to assess mother's stress level. Each questions have five responses. Score were categorized as: 0 ± never, 1 ± almost, 2- some time ,3-fairly often ,4 very often mild stress- 0-8, Moderate stress- 19-37, Severe stress- 38-56. Data Collection Procedure were collected in three phases. Phase 1: Pretest – Baseline data on demographic variables and stress level were collected from both groups before any intervention. Phase 2: Intervention – The experimental group received the Benson's relaxation therapy, while the control group continued to receive standard postnatal care. Phase 3: Posttest – After completing the three consecutive days of intervention, post-test data were collected. Statistical Analysis Data were analysed using SPSS version 25.0. Descriptive statistics such as frequency, percentage were used to summarize demographic characteristics and outcome measures. Inferential statistics included: Paired t-test – to compare pretest and posttest stress level scores within each group. Unpaired (independent) t-test – to compare post test scores between experimental and control groups. Chi-square test – to assess associations between selected demographic variables and pretest score. p-value < 0.05 was considered statistically significant for all tests.

Tool Validation and Reliability: The tool was developed based on literature review and expert guidance. It was reviewed by 12 experts in maternal health nursing and obstetrics; 9 experts provided feedback. Modifications were made to improve clarity, cultural appropriateness, and sequence of items. The final version of the tool was approved by the research supervisor. Reliability of the tool was estimated by using test and retest method. The reliability of the tool was found to be r= 0.9. Hence the tool was found to be highly reliable. The reliability "r" was calculated using the formula (Karl Pearson correlation co-efficient formula).

RESULTS

Table-1: assess the frequency and percentage distribution of post Caesarean mother according to their demographic variable.

n= 30

Sr. No	Demographic Variable	Experimental group		Control Group	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1.	**Age**				
	19-25	5	33.33	4	26.66
	26-30	6	40	6	40
	≥31	4	26.66	5	33.33
2.	**Religion**				
	Hindu	13	86.66	11	73.33
	Muslim	2	13.33	4	26.66
3.	**Education of the mother**				
	Primary education	1	6.66	2	13.33
	Secondary education	3	20	5	33.33
	Higher secondary education	5	33.33	4	26.66
	Under graduate	4	26.66	3	20
	Post graduate	2	13.33	1	6.66
4.	**Occupation of the mother**				
	Employed	6	40	4	26.66
	Unemployed	9	60	11	73.33
5.	**Monthly income of the family (in Rs)**				
	Above 9000/-	15	100	15	100
6.	**Type of family**				
	Nuclear family	9	60	9	60
	Joint family	6	40	6	40
7.	**Place of residence**				
	Rural area	7	46.66	6	40
	Urban area	8	53.33	9	60
8.	**Parity**				
	Primi	8	53.33	9	60
	Multi	7	46.66	6	40
9.	**Previous history of caesarean section**				

	Yes	4	26.66	3	20
	No	11	73.33	12	80
10.	**Indication for caesarean delivery**				
	Emergency	2	13.33	2	13.33
	Post dated	2	13.33	1	6.66
	Oligohydramnios	2	13.33	1	6.66
	Cephalopelvic disproportion	3	20	2	13.33
	Pregnancy induced hypertension	2	13.33	4	26.66
	Meconium-stained liquor (msl)	2	13.33	2	13.33
	Fetal distress	2	13.33	3	60
11.	**Source of information**				
	Self	15	100	15	100
12.	**Gender of the baby**				
	Male	8	53.33	8	53.33
	Female	7	46.66	7	46.66
13.	**Have you undergone yoga classes?**				
	No	15	100	15	100
14.	**Have you undergone parenthood classes?**				
	No	15	100	15	100
15.	**Have you got social support after caesarean delivery?**				
	yes	15	100	15	100
	If yes, who is				
	Mother	6	40	5	33.33
	Mother-in-law	5	33.33	4	26.66
	Husband	4	26.66	6	40

The study table signifies that in terms of age distribution, the majority of mothers were between 26–30 years (6 in each group), followed by those aged 19–25 years (5 in experimental and 4 in control), and ≥31 years (4 in experimental and 5 in control). Regarding religion, most participants were Hindu (13 in the experimental group and 11 in the control group), while the remaining were Muslim (2 in experimental and 4 in control). As for educational status, in the experimental group, 1 had primary education, 3 had secondary, 5 had higher secondary, 4 were undergraduates, and 2 were postgraduates. Similarly, in the control group, 2 had primary education, 5 had secondary, 4 had higher secondary, 3 were undergraduates, and 1 had completed postgraduation. When looking at

occupation, 6 mothers in the experimental group and 4 in the control group were employed, while the majority in both groups were unemployed. All 30 participants reported a monthly family income above ₹9000.

In terms of family type, 9 participants in each group belonged to nuclear families, while 6 in each group belonged to joint families. For residential location, the experimental group had 7 mothers from rural areas and 8 from urban areas, while the control group included 6 from rural and 9 from urban settings. Regarding parity, the experimental group included 8 primiparous and 7 multiparous mothers, while the control group included 9 primiparous and 6 multiparous mothers. In the experimental group, 4 had a previous history of caesarean section, compared to 3 in the control group. Concerning the indications for the current caesarean section, in the experimental group, 2 mothers underwent surgery due to emergency, 2 due to post-dated pregnancy, 2 for oligohydramnios, 3 due to cephalopelvic disproportion (CPD), 2 for pregnancy-induced hypertension (PIH), 2 for meconium-stained liquor (MSL), and 2 due to fetal distress. In the control group, the distribution was similar: 2 for emergency, 1 for post-dated pregnancy, 1 for oligohydramnios, 2 for CPD, 4 for PIH, 2 for MSL, and 3 for fetal distress. All participants in both groups reported that they came to know about Benson's Relaxation Therapy by themselves. The gender distribution of newborns was also fairly balanced, with 8 male and 7 female babies in both groups. None of the mothers had previously attended yoga or parenthood classes. However, all mothers reported receiving social support after delivery. Among the sources of support, in the experimental group, 6 mothers received support from their own mother, 5 from mother-in-law, and 4 from their husband. In the control group, 5 received support from their mother, 4 from mother-in-law, and 6 from their husband.

Table-2 Analysis of the effectiveness of stress Benson's Relaxation Therapy on Post Caesarean Section Stress among Post Caesarean Mother.

Group	Pre-test Mean ± SD	Post-test Mean ± SD	Mean Difference	t-value	p-value
Experimental	26.6 ± 3.1	17.1 ± 2.5	9.5	8.43	< 0.001**
Control	26.2 ± 3.3	25.5 ± 2.9	0.7	1.08	0.29 (NS)

The table-2 depicts that stress scores between the experimental and control groups revealed a significant reduction in stress levels among mothers who received Benson's Relaxation Therapy. In the experimental group, the mean pre-test stress score was 26.6 ± 3.1, which decreased markedly to 17.1 ± 2.5 in the post-test, yielding a mean difference of 9.5. The difference was statistically significant, with a t-value of 8.43 and a p-value of < 0.001, indicating a highly significant effect of the intervention.

To find out the association between pretest stress score with their demographic variables:

Statistical association was found between education level and pretest stress scores. Other variables do not find any association.

DISCUSSION

A study conducted by Suresh et al. (2021) titled "Effectiveness of Benson's Relaxation Therapy on Stress among Postnatal mothers after Caesarean Section in a Tertiary Care Hospital" evaluated the impact of BRT on maternal stress using a quasi-experimental design. The study included 60 postnatal mothers, divided equally into experimental and control groups. The Perceived Stress Scale (PSS) was used to measure stress levels before and after the intervention. Benson's Relaxation Therapy was administered twice daily for 5 days.

The findings showed that the mean pre-test stress score in the experimental group was 28.3 ± 2.9, which significantly reduced to 16.5 ± 2.3 post-intervention, with a mean difference of 11.8 ($p < 0.001$). In contrast, the control group showed negligible change in stress levels. The study concluded that Benson's Relaxation Therapy was

effective in significantly reducing stress among postnatal mothers following caesarean delivery.

In the present study, the experimental group also demonstrated a significant reduction in stress levels, with pre-test mean score of 26.6 ± 3.1 and post-test score of 17.1 ± 2.5, resulting in a mean difference of 9.5 ($t = 8.43$, $p < 0.001$). The control group showed a minimal decrease (from 26.2 ± 3.3 to 25.5 ± 2.9), which was not statistically significant ($p = 0.29$).

Both studies support the effectiveness of Benson's Relaxation Therapy in reducing psychological stress among post-caesarean mothers. While Suresh et al. reported a slightly higher mean difference, possibly due to sample size or individual variability, the overall trend aligns closely with the findings of the current study. These results strengthen the evidence base for integrating BRT into standard postnatal care protocols.

CONCLUSION

In contrast, the control group showed minimal change. The mean pretest score was 26.2 ± 3.3, which slightly reduced to 25.5 ± 2.9 in the post-test, with a mean difference of only 0.7. This change was not statistically significant, with a t-value of 1.08 and a p-value of 0.29.

These findings clearly demonstrate the effectiveness of Benson's Relaxation Therapy in significantly reducing stress among post-caesarean mothers in the experimental group compared to those who received only routine care.

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