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Effect Of Benson Relaxation Technique On Reducing Pain And Stress Among Post Cesarean Section Mothers

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Abstract

Context: Cesarean section patients were experienced discomfort and worry. Benson's relaxation technique is a good strategy to alleviate pain and stress. Mothers are the major symptoms that influence comfort and well-being. **Aim:** The study aimed to see how Benson's relaxation technique effectively decreased pain and tension in post-cesarean section mothers.
Design: It was decided to utilize a quasi-experimental design. The study was performed at Benha University Hospitals' post-partum recovery unit in the obstetrics and gynecology department.
Sample: A total of 170 moms were chosen at random and split into two equivalent groups: study and control.
Tools: For data collecting, three main tools were used. The visual analog scale for pain, and the perceived stress scale were used in a structured interviewing questionnaire.
Results: Following the application of Benson's relaxation technique, the two groups had statistically significant differences in their pain intensity and perceived stress scale ratings. Meanwhile, no statistically significant difference in pain intensity or perceived stress scale ratings existed between the study and control groups before administering Benson's relaxing approach.
Conclusion: Benson's relaxation technique was shown to be useful in decreasing pain levels in post-cesarean section moms in study groups, who also lowered their stress levels.
Recommendation: To further generalize the results, a similar study utilizing a large representative probability sampling technique is highly recommended in various maternity facilities.

KEYWORDS: Benson's relaxation technique; Stress; Pain; Post cesarean section mothers

I. Introduction

A Cesarean section (CS) can save a life when conducted in a reasonable timeframe

to avoid dystocia or further difficulties. It is a traumatic experience that could lead to stress disorder **(Chen et al., 2020).** Post-cesarean moms' pain and stress make healing difficult, and it affects the mother's relationship with her newborns. Early recovery is extremely crucial for a patient who will be responsible for her newborn shortly after surgery. Poorly treated pain after a cesarean section has been linked to an elevated prevalence of chronic pain and post-traumatic stress syndrome, according to proof from research conducted on high-income features **(Kintu et al., 2019)**. Extensive management of pain and stress is necessary to make the woman reasonably comfortable throughout the duration of the post-delivery. Benson's relaxation medication is a basic technique for reducing pain and tension (**Raj & Pillai 2021).**

Pain is a complicated phenomenon that has been described differently by physicians, researchers, and individuals. The pain was known as an unpleasant emotional sensation or experience related to potential or actual tissue harm, as per the international correlation for the study of pain. Patients can suffer from physical and psychological effects as a result of poorly controlled pain **(Mahama et al., 2019).** C-sections have several disadvantages for women, including pain, which necessitates using a lot of pain medication, and a lengthier recovery time than vaginal birth. Women frequently suffer from pain in the wound (where the stitches are) and abdominal discomfort following a C-section delivery. Abdominal discomfort might continue for up to a month in some cases **(Lee et al., 2020).**

Birth is stressful for women, and a C-section adds to that stress because it is major abdominal surgery with the possibility of critical situations. Post-partum stress is a restricting force caused by post-partum stressors and can be exacerbated. Within six weeks of childbirth, these stresses include physical changes, maternal role attainment, and societal support and action **(Horasanlı & NUR DEMIRBAS, 2020).**

Recently, several strategies for managing post-cesarean section pain have been explored, including pharmaceutical and non-pharmacological therapies. Relaxation is a non-pharmacological method for reducing pain severity. Relaxation seeks to alleviate muscle tension, anxiety, and bone discomfort, and also relieve tension and pain associated with the body's natural functions **(Raj & Pillai 2021).**

Benson's relaxation treatment (BRT) is a non-pharmacological method that attempts breathing consciousness to induce relaxation in the body. It can alleviate pain, increase hunger, improve sleep, boost energy levels, decrease stress, make you feel relaxed, and help you bond with your child indirectly. A typical BRT session series of steps: Mothers who have had a cesarean section should sit comfortably in a relaxed position, shut their eyes, gradually breathe in and out via their nose, and silently utter the word "one" when breathing out. Five minutes in the morning and evening, two times a day, are spent practicing the procedure, with the duration eventually increasing to 10-20 minutes **(Riddhi and Tiwari, 2020)**. Benson's relaxation is also dependent on four key aspects that contribute to détente (stress release), including a peaceful atmosphere, an appropriate state, a mental device consisting of a single word to concentrate on, and a passive attitude **(Fateme et al., 2019).**

Benson's relaxation technique reduces sympathetic nervous system activity and endogenous catecholamine levels. It causes muscle relaxation and

decreased tension, anxiety, and sadness. Benson's relaxation approach has also been linked to an increase in self-esteem. People may control their breathing, lower their heart rate and blood pressure, and avoid many harmful physiologic responses to stress by concentrating (**Jourabchi et al., 2020).**

Nurses play an important role as educators by providing support for mothers and providing information, education, psychological monitoring, and giving practical advice to women. Nursing management of post-cesarean pain is unique in that mothers are expected to reclaim their maternal role for the neonates shortly after the surgical birth. Short post-cesarean healing time decreases many other somatic and emotional issues that impede cost reserves and a good delivery experience **(Basyouni et al., 2018).** For the obstetric nurse, non-pharmacological pain treatment methods are an excellent choice for managing post-cesarean discomfort. Massage, relaxation techniques, relaxing music, mind-body practices, herbal medicines, mentalism, and therapeutic touch are examples of these therapies. These methods are efficient in decreasing pain levels **(Thomson et al., 2019).**

2. Significance of the Study

Despite efforts to reduce the number of primary caesareans, cesarean birth remains the most popular abdominal operation in North America. The third-greatest cesarean section incidence in the world is in Egypt (54%) (**Jadoo et al., 2020)**. Physical and psychological concerns plague post-CS women. **(Ogunkua& Duryea 2021**).

Furthermore, pain from abdominal and uterine surgery that does not go away in a day has consequences such as limited mobilization, disturbed/unfulfilled bonding attachments (bonding affection), disruption of the mother's activity of daily living (ADL), and, as a result, the baby's nutrition is lowered inducing a postponement in breastfeeding from the start. However, it also impacts breastfeeding initiation (IMD) (**Marfuah et al., 2019).**

Benson's relaxation treatment seeks to decrease stress, anxiety, muscular tension, and bone strain, and also it relieves pain and tension associated with the body's physiological status indirectly. Benson's relaxation has been demonstrated to be useful in lowering post-operative pain in a number of trials (**Priya et al., 2017)**. Nurses play an essential part in a woman's pregnancy and birthing experience as educators, organizers, and supporters of women's health. After a cesarean birth, most women were endured postsurgical discomfort and administered painkillers. Because opioid exposure increases the chance of developing a persistent postsurgical opioid addiction, opioid-reduction therapies are necessary (**Villadiego & Baker, 2021)**. The relaxation technique developed by Benson was efficient in decreasing pain and stress in post-cesarean moms. Nurse educators should keep up to speed on complementary and substituted medicine for pain and stress relief, as well as develop specialized skills in delivering Benson's relaxation treatment **(Radha et al., 2019).**

3. Aim of the study

The purpose of this study was to see how effective Benson's relaxation method is at lowering pain and tension in mothers who have had a cesarean section. This goal was achieved by:

- In both the research and control groups, the concentration of pain and stress among post-cesarean moms was assessed prior to interventions.

- Analyzing Benson's relaxation technique affects stress and pain reduction in post-c-section moms in the study group following the intervention.

3.1. Operational definitions

Planned or elective cesarean: Cesareans are often planned before the birth for a medical reason or because it is the mother's decision.

Emergency C-section: is one that occurs very rapidly as a result of imminent anxiety for the mother's and/or baby's health. The goal is for the time between the determination to do an emergency C-section and delivery to be less than 30 minutes, although it can take up to 75 minutes.

Effectiveness: It is defined as the degree to which Benson's relaxation treatment has resulted in the anticipated transformation in stress and pain decrease among post-c-section women.

Benson's Relaxation approach: It is a non-pharmacological pain management approach that is based on breathing in post-cesarean section mothers in this study. Mothers will be asked to attend quietly and with their eyes closed comfortably. The mothers will be instructed to breathe slowly and through their nostrils. The mothers are forced to utter the word "one" when they exhale discreetly. The approach is first practiced for five minutes twice a day, in the mornings and afternoons, before progressively increasing to 10-20 minutes.

Stress: It alludes to an unfavorable state of feeling disappointed, furious, apprehensive, or anxious due to surgery and a newly assumed parental role in this study.

Pain: In this study, pain refers to a post-cesarean mother's discomfort at the surgical site.

3.2. Research hypotheses

H1: After using Benson's relaxation methods, post-cesarean moms will experience a significant decrease in discomfort.

H2. After using Benson's relaxation methods, post-cesarean moms will experience a significant decrease in stress.

4. Subjects & Methods

4.1. Research design: To accomplish this study objective, a quasi-experimental approach was adopted (two groups: control and study).

4.2. Research setting

The current study is being performed on post-cesarean moms who are admitted to Benha University Hospital's post-partum recovery room. This hospital is in the Qalioubia Governorate, in Benha City, Egypt.

4.3. Subjects

Sample type: A Purposive sampling

Sample size:

This was a time-based study of six months, which were 170 post-cesarean section mothers: 85 for each group of the study group and the control group, in a previously mentioned setting with the following inclusion and exclusion criteria: immediate post-operative of cesarean section mothers who were alert, conscious, aware and willing to enroll in the study, primipara with single baby, not using analgesic or sedative therapy, free from any obstetrical disorders, free from post-cesarean complication, free from mental, psychiatric and cognitive disorders, free from chronic medical diseases (i.e., hypertension, cardiac diseases, and diabetes mellitus), stable labor without complication, and had a telephone number for contact.

4.4. Sample technique:

The sample was 170 mothers split into two equal groups: a control group (85 mothers), and a study group (85 mothers). To eliminate bias in data collection, the control group included the post-cesarean mothers who were admitted to the post-partum recovery room during the first three months and met the eligibility requirements from the start of data gathering. In contrast, the study group included other post-cesarean mothers who met the same criteria but were conceded during the third and fourth months of data analysis.

4.5. Tools of the study

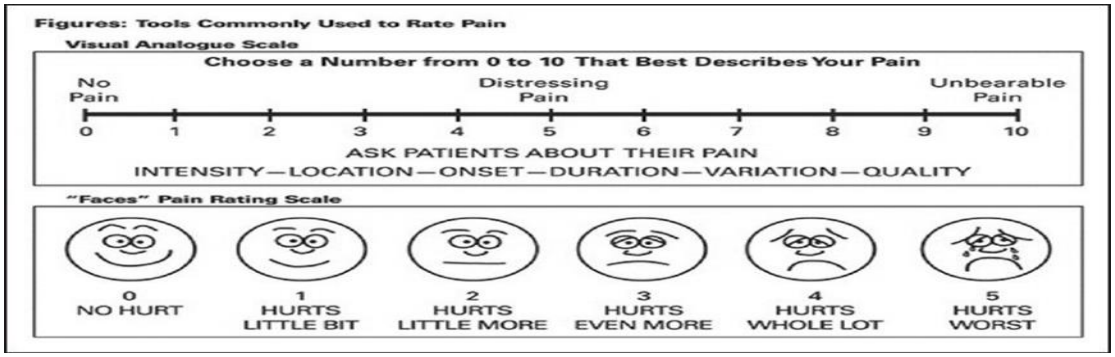
The preceding three instruments were used to collect pertinent data on the study individuals:

4.5.1. A structured interviewing questionnaire: The researchers created it after reading related material, and it was written in plain Arabic. It was divided into four sections:

Part 1: Data about the mothers' socio-demographics. It included five questions (age, religion, educational concentration, residence, occupation, and social demand).
Part 2: The mothers' obstetrical histories were examined. There were six questions in all (abortion, gestational age, frequency of abortion, type of cesarean section, kind of anesthesia, and type of surgical incision).
Part 3: This part has calculated the beginning of mobility after the cesarean section.
Part 4: Factors that affect the severity of pain. It consisted of two items which are (drinking tea, drinking coffee).

4.5.2. Visual analog scale for pain:

Bain et al. (2005) used this measure to validate the severity of pain among post-cesarean women based on a scale. It is a specific tool that uses a scale of 0 to 10 to rate the severity of pain. On this scale, 0 represents no pain, 1-4 represents mild pain, 4-7 represents moderate pain, and 7-10 implies severe pain.



4.5.3. Perceived Stress Scale [PSS-14]:

The perceived stress scale **Ajitha, (2012)** was utilized to evaluate the stress degree experienced by the post-cesarean moms. It consists of 14 statements varying from never to very often. All of these are related to stress appraisal in post-cesarean moms. The stress of post-cesarean mothers who were assessed utilizing PSS, was classified as follows: Never (0), Almost never (1), Sometimes (2), Fairly often (3), and very often (4).

The overall score of the perceived stress scale (PSS) is 0-56. Mild stress was given a score from 0-18; a score of 19-37 was given for moderate stress, and a score of 38-56 was given for severe stress.

4.6. Ethical Considerations:

There were no ethical concerns. Before beginning the data collection, each mother was informed of the study's goal and given an oral agreement. Throughout the study, the women were told that their information would be kept private and would only be used for research purposes. Each mother was told that involvement in the survey is completely voluntary, and that she could opt-out at any moment.

4.7. Tools Validity & Reliability:

An expert list comprised of five generations, gynecological health nursing and psychiatric, nursing of mental health professionals, obstetricians, and psychiatrists, was thoroughly assessed the tools for comprehensiveness, appropriateness, and intelligibility. The expert group next verified the tools' face and content correctness. The tools' dependability was tested to ensure that they were consistent. The retest reliability of the scale was investigated, and it was found that the visual analog pain scale indicated an increased test-retest reliability (r = 0.84). Previous studies (r=0.9) have validated the reliability of the perceived stress scale. As a result, the tool was judged to be quite trustworthy. The equation was used to determine the reliability "r" =(Karl Pearson correlation co-efficient formula).

4.8. The Pilot study:

The pilot study enrolled 10% (18) of the mothers and lasted three weeks. It was carried out to assess the advanced tools' simplicity, feasibility, clarity, applicability, validity, and reliability. Moreover, it was done to consider potential hurdles or challenges that may develop for the researchers, block data gathering, and calculate the time required for data collecting. As per the pilot study findings, necessary changes were performed by adding or deleting questions and then rephrasing some queries. Because some adjustments were implemented, the mother who enrolled in the pilot study was removed from the study.

4.9. Procedure:

The following steps were used to achieve the current study's goal: preparatory, evaluation, preparation, implementation, assessment, and follow-up. These phases were conducted over a six-month timeframe from the beginning of August 2020 to the end of January 2021.

1-Preparatory phase:

The study's first phase was the preparatory phase, which was performed by the researcher through a survey of local and international relevant literature on many components of the research subject. This gave the researchers a better understanding of the scope and gravity of the issues, and guidance on how to build the necessary data-gathering instruments.

Approvals:

After elucidating the research's objective and obtaining annual statistics of the post-cesarean section of women participating within the hospital, official permission to perform the research was secured by uploading official paperwork from the Benha University's Faculty of Nursing's Dean to the head of Benha University Hospital in Egypt.

2-Assessment phase:

To acquire baseline data, researchers have interrogated the post-cesarean section moms in the post-partum recovery room (both control and study groups). The researchers welcomed every woman, described the aim and duration of the study, acted, and received their moms' approval before beginning the interview. The researchers interviewed the post-cesarean section mothers to complete and fulfill the structured interviewing questionnaire. Then, the pre-test was performed to validate women's level of pain utilizing (a

visual analog scale for pain), and evaluate the level of stress utilizing **(the** perceived stress scale). The collected data during this phase served as a baseline against Benson's relaxation method efficiency in lowering pain and tension in the post-cesarean section mothers. The mean time for the completion of each woman's structured interviewing questionnaire was around (10-15 minutes), the average time needed to assess women's level of pain was around (10-15 minutes), as well as the average time needed to assess women' level of stress was approximately (20-25 minutes). Routine post-operative care was given by hospital staff for both groups. Routine post-operative care was given by hospital staff for both groups. To prevent information from becoming contaminated between the two groups, the control group was evaluated initially.

2) Planning phase:

The researchers momentarily discussed the purpose of Benson's relaxation technique to the mothers, which is a physical condition of profound relaxation that alters the mental and physical reactions to stress and pain, based on baseline data gathered during the evaluation phase. Furthermore, after reviewing relevant literature, researchers gradually found the benefits of this relaxation technique, including the fact that consistent relaxation practice is an appropriate medication for a broad range of stress-related issues. Moreover, the researchers were prepared to implement the Benson relaxation technique as follows:

- Clarify the phases of protocol to the mothers.
- Obtain oral consent to guarantee co-operation.
- Arrange the surrounding environment to be quiet and peaceful.

The implementation phase was designed to meet the study's objective, which was aimed to reduce stress and pain among the post-cesarean section mothers.

Implementation Phase:

The duration of the study was 24 weeks period (3-4 mothers /day). The researchers went to previously indicated the location twice a week (Mondays, Tuesdays, and Wednesdays) from 9 AM to 3 PM.

The steps of the procedure were instructed and repeated to each mother to be implemented as follows **Bommi, (2016):**

- Sit calmly in a relaxed position.
- Shut your eyes.
- Starting with your feet and working your way up to your face, completely relax every muscle in your body (Relax your tongue, and your thoughts will stop).
- Be conscious of your breathing as you inhale and exhale. As your mother is exhaling, quietly utter the phrase "my God" or "my Allah" to yourself (breathe smoothly and normally).
- Continue to breathe for another 10 to 20 minutes. Open your eyes to check the time, but do not set the alarm. When you are finished, sit quietly for a few minutes, first with your eyes closed, then with your eyes open. For a few minutes, do not stand up.
- Do not be concerned about if or not mom can achieve a deep state of relaxation. Keep a pleasant mindset and allow yourself to relax at your speed. When distracting ideas arise, try to disregard them rather than lingering on them, and return to the task at hand (my God or my Allah).
- There should be little effort required to respond after some experience. There should be no meals within two hours of using the technique, because the digestive process tends to obstruct the

elicitation of the relaxation response. The technique should be done twice daily at 7 AM and 7 PM.

- Practice the relaxed state for 10-20 minutes in the morning to avoid the stress reaction and achieve substantial inner peace and relaxation.
- Select any calming, mellifluous-sounding word, ideally one that has no meaning or association, to prevent needless cognitive activation.

3) Follow up and Validation Phase:

For the study group: The influence of Benson's relaxation technique was assessed utilizing the same set of instruments that were used prior to the intervention to validate the amount of pain and stress experienced by the post-cesarean section mothers. Follow up, and evaluation of the level of pain (tool II) and level of stress (tool III) were scheduled four times, two hours after the operation and on the first, second and third day after the operation through a home visit or by telephone follow up a (twice daily7 a.m. and 7 PM).

For the control group: The impact of Benson's relaxation approach was assessed using the same set of instruments that were used prior to the intervention to validate the amount of stress and pain experienced by the post-cesarean section mothers.

Statistical Analysis

In the days before computers, data had to be double-checked before being entered electronically. The Statistical Package for the Social Sciences (SPSS) was used (SPSS version 20). In this investigation, descriptive statistics were employed, such as mean, standard deviation, percentages, and frequency. Statistical significance tests were utilized to assess the study hypothesis (chi-square and paired independent t-test). A p-value of less than or equivalent to 0.05 was regarded statistically significant, while a p-value of less than 0.001 was regarded statistically extremely significant, and a p-value of more than 0.05 was regarded statistically non-significant.

Results:

Table (1): The studied sample distribution (study and control groups) as per their socio-demographic features (n=170)

Groups Socio-demographic characteristics	Study group (n=85)		Control group (n=85)		X^2	p-value
	No	%	No	%		
Age (years) <25 25-30 >30	 46 34 5	 54.1 40.0 5.9	 53 25 7	 62.4 29.4 8.2	2.20	0.33
Mean ±SD (years)	**23.31 ±3.96**		**22. 91 ±3.96**			
Religious Muslim Christian	 77 8	 90.6 9.4	 69 16	 81.2 18.8	3.10	0.07

Educational level						
Read and write	9	10.6	13	15.3		
Basic education	8	9.4	16	18.8		
Secondary education	32	37.6	31	36.5	5.39	0.14
University education	36	42.4	25	29.4		
Occupation						
Work	19	22.4	23	27.1	0.50	0.47
Housewife	66	77.6	62	72.9		
Residence						
Rural	40	47.1	31	36.5	1.95	0.16
Urban	45	52.9	54	63.5		
Present social support*						
Mother	46	54.1	53	62.4		
Mother in law	16	18.8	14	16.5	1.23	0.53
Sister	23	27.1	18	21.2		

This table (Table 1) reveals the demographic features of the sample that is being studied. There was no statistically significant difference between the control and study groups as per age, with a mean of 23.31±3.96 and 22.91±3.96 years, respectively, for the study and control groups. Around two-thirds of urban residents in the study group and more than half were.

Furthermore, only about a third of the study group had a university degree, while only about half of the control group had a secondary education, demonstrating that the two groups were not differ much. Homemakers made up more than two-thirds of both the control and study groups in terms of occupation. Nevertheless, the majority of both the control and study groups were Muslims. Both the control and study groups received social assistance from their mothers, with more than half and about two-thirds were received it from their mothers, respectively. The two groups had no statistically significant differences in the socio-demographic parameters, indicating that they were homogeneous.

Table (2): Frequency distribution of studied specimen (study and control groups) as per their past and current obstetrical history (n=170)

Groups **Obstetric History**	**Study group (n=85)**		**Control group (n=85)**		**X^2**	**p-value**
	No	%	No	%		
Abortion					1.85	0.17
Yes	28	31.8	20	23.5		
No	57	68.2	65	76.5		
Frequency of abortion	N =28		N = 20		2.64	0.26
One	25	89.3	16	80.0		
Two	0	0.0	4	20.0		
Three	3	10.7	0	0.0		
Gestational age					5.23	0.15

37 weeks 38 weeks 39 weeks 40 weeks	19 28 15 23	22.4 32.9 17.6 27.1	15 38 19 13	17.6 44.7 22.4 15.3		
Mean +SD	**38.51 ± 1.12**		**38.35 ±0.94**			
Type of cesarean section Planned cesarean section Emergency cesarean section	 66 19	 77.6 22.4	 75 10	 88.2 11.8	3.36	0.06
Type of anesthesia General Regional	 78 7	 91.8 8.2	 71 14	 83.5 16.5	2.66	0.10
Type of incision Transverse LSCS.	51	100.0	51	100.0	-	-

Table (2) shows that 32.9% of those in the research group and 44.7% of those in the control group were both 38 weeks, with a mean gestational age of 38.51±1.12 weeks and 38.35±0.94 weeks, respectively. About 31.8% of the study participants and 23.5% of the control groups had abortions, respectively. Additionally, the anticipated CS was received by more than three-quarters of both study and control groups, respectively (76.6 percent and 84.2 percent). Both study and control groups were anesthetized by general anesthetic (91.8 percent and 83.5 percent, respectively). For both the research and control groups, all participants had transverse LSCS. To conclude, there were no statistically significant differences in the two groups' prior obstetrical histories.

Figure (1): proportional distribution of studied specimen as per their history of factors impacting on pain reliving approach (tea and coffee intake) (n=170)

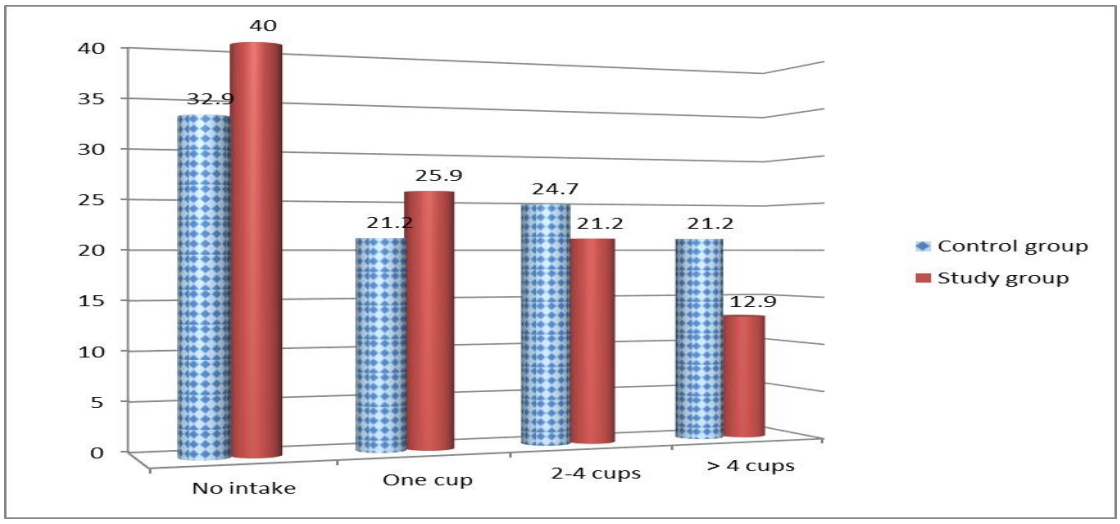


Figure (1) demonstrates the factors that affected relieving pain in the study sample. About two-fifths (40%) of the study group and one-third (32.9%) of the control groups did not consume tea or coffee, respectively. Meanwhile, one-fifth of the study group (21.2%) and one-eighth (12.9%) of the control group consumed more than four cups each day.

Table (3): Mean ratings of pain intensity in both control and study groups prior to intervention and four stages after intervention (n=170)

Time of intervention		Study group n=85	Control group n=85	t-test	p-value
		Mean ±SD	Mean ±SD		
Pre-intervention	Immediately after ce-sarean section	6.30 ±2.20	6.22 ±2.31	0.23	0.81
Post-intervention	After2 hours	5.14 ±1.56	6.04 ±1.37	4.01	0.000**
	After4 hours	3.72 ±1.29	5.00 ±1.33	6.29	0.000**
	Second day	1.71 ±1.32	3.23 ±1.82	6.20	0.000**
	Third day	0.82±0.67	±1.351.34	3.91	0.000**

*An extremely statistically significant $p \leq 0.001$

Table (3): Before administering Benson's relaxation technique, no statistically significant difference in pain intensity was identified between the control and study groups. However, after using Benson's relaxation methods, there are statistically significant variations in pain intensity were noticed between the two groups (p-values less than 0.001).

Table (4): Correlation coefficient between pain and socio-demographic characteristics among studied specimens before and four phases after intervention (n=170)

Study period / Socio-demographic characteristics	Groups	Pre-intervention		Post-intervention							
		Pain immediately after cesarean section		Pain After 2 hours		Pain After 4 hours		Pain during the second day		Pain during the third day	
		r	p-value	r	p-value	r	p-value	r	p-value	r	p-value
Age	**Study group**	0.53	0.02*	0.19	0.06	0.08	0.12	0.25	0.51	0.21	0.91
	Control group	0.43	0.03*	0.34	0.02*	0.21	0.01*	0.21	0.06	0.07	0.21
Education	**Study group**	0.62	0.04*	0.28	0.05*	0.51	0.31	0.61	0.71	0.51	0.84
	Control group	0.41	0.07	0.17	0.02*	0.24	0.03*	0.42	0.08	0.08	0.12
Residence	**Study group**	0.54	0.05*	0.68	0.05*	0.61	0.51	0.81	0.61	0.86	0.81
	Control group	0.24	0.05*	0.57	0.02*	0.41	0.01*	0.52	0.07	0.02	0.31
Occupation	**Study group**	0.91	0.02*	0.61	0.03*	0.24	0.68	0.59	0.01*	0.86	0.01*
	Control group	0.82	0.04*	0.42	0.01*	0.53	0.02*	0.50	0.03*	0.02	0.03*

A Statistical significant p-value less than or equal to 0.05

Table (4) demonstrates a statistically significant association between pain and socio-demographic characteristics in both control and study groups, after cesarean section, except for education in the control group. Moreover, a significant association was observed after 2 hours in both study and control groups, except for age in the study group. Meanwhile, after 4 hours, a significant correlation is found in the control group compared to an insignificant correlation in the study group. Moreover, there is an insignificant correlation during the second-day and third-day pain assessment with socio-demographic characteristics in both study and control groups except in occupation, where a significant correlation is found in both control and study groups.

Table (5): Correlation between pain and selected items of obstetrical history and factors affecting pain reliving method among studied sample before and four phases after intervention (n=170)

Study period / Obstetrical history and factors affecting pain reliving method	Groups	Pre-intervention		Post-intervention							
		Immediately after the cesarean section		After 2 hours		After 4 hours		during Second day		during the third day	
		r	p-value	r	p-value	r	p-value	R	p-value	r	p-value
Type of anesthesia	Study group	0.61	0.006	0.71	0.000*	0.43	0.008	0.91	0.01*	0.72	0.01*
	Control group	0.52	0.01*	0.82	0.01*	0.23	0.002*	0.65	0.03*	0.62	0.03*
Type of CS	Study group	0.60	0.006	0.71	0.000*	0.43	0.008	0.91	0.01*	0.72	0.01*
	Control group	0.51	0.01*	0.80	0.01*	0.28	0.002*	0.61	0.03*	0.65	0.03*
Tea and coffee intake	Study group	0.61	0.006	0.70	0.000*	0.45	0.008	0.82	0.01*	0.71	0.01*
	Control group	0.52	0.01*	0.82	0.01*	0.23	0.002*	0.65	0.03*	0.69	0.03*

*A Statistical significant $p \leq 0.05$

Table (5) illustrates that there was a significant relationship between pain and obstetrical history (type of anesthesia and type of CS) and factors affecting pain reliving method (Tea and coffee intake) in the control group at the pre and post-intervention stages. Meanwhile, a highly significant correlation was observed after 2 hours in the study group.

Table (6): Distribution of studied sample as per their resumption of mobility among both study and control groups after cesarean section (n=170)

Resumption of mobility	Study group n = 85		Control group n= 85	
	No	%	No	%
<10 hours	76	89.4	57	67.1
≥10 hours	9	10.6	28	32.9
X^2	12.47			
p-value	**P< 0.001**			

*A Statistical significant $p \leq 0.05$ **An extremely Statistical significant $p \leq 0.001$

Table (6) illustrates that the majority of the study group (89.4%) and more than two-thirds (67.1%) of the control group were resumed mobility before 10 hours after the cesarean section, with an extremely significant difference among both control and study groups.

Table (7): Mean score of perceived stress scale in both the study and control groups after cesarean section at pre and post-intervention phases (n=170)

Items Perceived Stress Scale	Pre-intervention		t-test	p-value	Post-intervention		t-test	p-value
	Study	control			Study	control		
	Mean ±SD	Mean ±SD			Mean ±SD	Mean ±SD		
Being upset that happened unexpectedly	1.45±0.74	1.58±0.90	1.01	0.31	0.64±0.73	1.35±0.92	5.51	0.000**
Feeling powerless over essential aspects of one's life	2.75±1.12	2.92±1.06	1.05	0.29	1.62±0.67	2.37±1.15	5.19	0.000**
Feeling nervous and "Stressed"	2.28±1.06	2.56±1.02	1.75	0.08	1.32 ± 1.15	2.09±0.97	4.66	0.000**
Inability to deal effectively with day-to-day concerns and annoyances	2.58±0.87	2.45±1.04	0.87	0.38	1.48±0.92	1.98±1.13	3.18	0.002*
Not feeling capable of adequately dealing with significant life changes	2.70±1.01	2.64±0.81	0.41	0.67	1.36±0.76	2.04±0.99	4.99	0.000**
Feeling not confident about ability to handle personal problems	2.69±0.83	2.64±0.92	0.34	0.72	1.74 ±0.81	2.15 ±0.39	3.06	0.003*
Dissatisfied with the pace at which events were unfolding,	2.63 ± 0.88	2.57 ± 0.85	0.44	0.56	1.52 ± 0.99	2.04 ± 0.98	3.40	0.000**
As if I couldn't handle everything that needed to be done, I felt overwhelmed.	2.68 ±0.94	2.51 ±0.92	1.15	0.25	1.29 ±0.97	1.88 ± 0.79	4.31	0.000**
Unable to control irritation in life	2.40 ± 0.96	2.30 ±0.75	0.70	0.48	1.02±1.04	1.83 ± 0.78	5.72	0.000**
Not feeling on top of things	1.82±0.69	2.03 ±0.82	1.81	0.07	1.08±0.72	1.68± 0.78	5.15	0.000**
Being enraged because things were spiraling out of control	2.17 ±1.19	2.15 ± 1.22	0.12	0.90	1.17 ± 0.94	1.67 ± 1.13	3.08	0.002*
Do not think about the things that are to be accomplished	2.45 ±1.29	2.36 ± 1.14	0.50	0.61	1.23 ± 1.13	1.80 ± 1.09	3.30	0.001**
Unable to control the way of spending time	2.52± 0.66	2.60±0.84	0.60	0.54	1.74±0.62	2.37±0.83	5.65	0.000**
Feeling that difficulties were piling up so high that they could not be overcome	2.80± 0.68	2.74 ±0.69	0.55	0.57	1.64±0.85	2.11 ±0.82	3.65	0.000**

A Statistical significant $p \leq 0.05$ **A greatly Statistical significant $p \leq 0.001$

Table (7) shows that prior to adopting Benson's relaxation technique, there was no statistically significant difference in mean ratings of perceived stress scale-related items between the study and control groups. Nonetheless, with p-values less than 0.001, the statistically significant variations between the two groups were identified in mean scores of perceived stress scale linked items after Benson's relaxation technique administration.

Figure (2): Proportions distribution of the studied sample as per overall score of perceived Stress Scale in both study and control groups after cesarean section at pre and post-intervention stages (n=170)

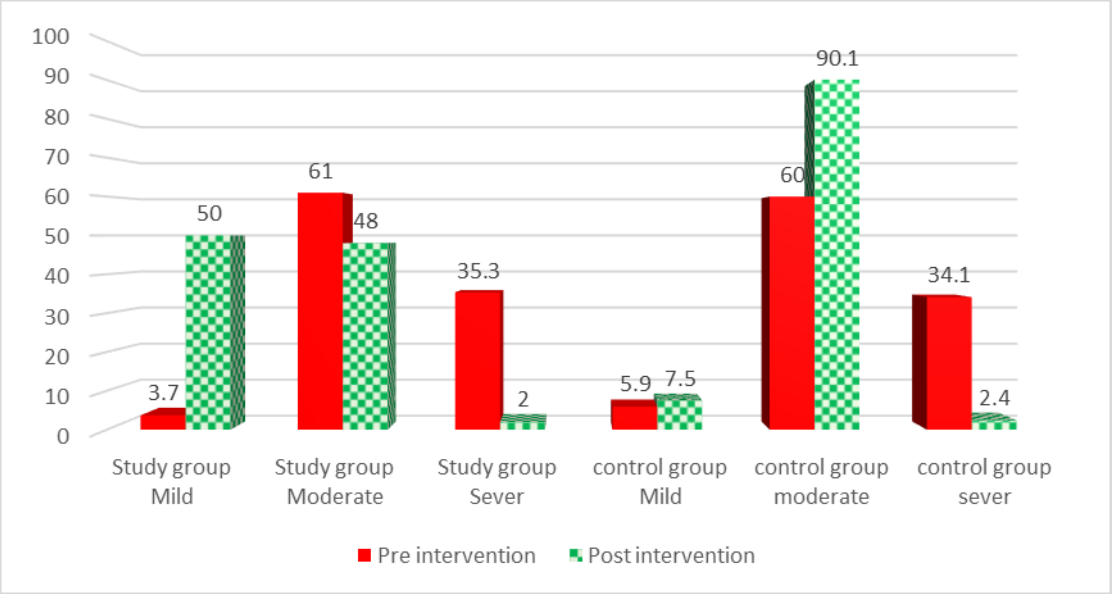


Figure (2) displays that (3.7%), and (5.9%) of the study group and control group had mild stress levels before the application of Benson's relaxation technique, respectively. Meanwhile, after applying Benson's relaxation technique, 50.0% of the study group had mild stress levels contrasted with 7.5%% of the control group. This means that there is a significant reduction in stress levels in the post-intervention phase contrasted with the pre-intervention phase in the study group more than in the control group.

Table (8): Correlation between the overall score of perceived stress scale and socio-demographic features in both the study and control groups after cesarean section at the pre and post-intervention phases (n=170)

Variable	Pre-intervention						Post-intervention					
	Study group n=85			Control group n=85			Study group n= 85			Control group n= 85		
	Mild	Moderate	Sever	Mild	Moderate	Sever	Mild	Moderate	Sever	Mild	Moderate	Sever
	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
Age (years)												
<25	0(0.0)	25(29.4)	21(24.7)	0(0.0)	34(40.0)	19(22.4)	25(29.4)	21(24.7)	0(0.0)	3(3.5)	49(57.6)	1(1.2)
≥25-30	0(0.0)	25(29.4)	9(10.6)	0(0.0)	19(22.4)	6(7.0)	16(18.8)	18(21.2)	0(0.0)	0(0.0)	24(28.3)	1(1.2)
≥30	0(0.0)	5(5.9)	0(0.0)	0(0.0)	3(3.5)	4(4.7)	2(2.4)	3(3.5)	0(0.0)	0(0.0)	7(8.2)	0(0.0)
X^2 (p-value)	**3.67**			**p-value 0.15**			**1.07**			**p-value 0.89**		
Educational level												
Read and write	0(0.0)	4(4.7)	5(5.9)	0(0.0)	8(9.4)	5(5.9)	4(4.7)	5(5.9)	0(0.0)	3(3.5)	10(11.8)	0(0.0)
Basic education	0(0.0)	5(5.9)	3(3.5)	0(0.0)	9(10.6)	7(8.2)	4(4.7)	4(4.7)	0(0.0)	0(0.0)	16(18.8)	0(0.0)
Secondary education	0(0.0)	18(21.2)	14(16.5)	0(0.0)	21(24.7)	10(11.8)	15(17.6)	17(20.0)	0(0.0)	0(0.0)	30(35.3)	1(1.2)
University education	0(0.0)	28(32.9)	8(9.4)	0(0.0)	18(21.2)	7(8.2)	20(23.6)	16(18.8)	0(0.0)	0(0.0)	24(28.2)	1(1.2)
X2 (p-value)	**4.70**			**p-value 0.19**			**3.75**			**p-value 0.71**		
Occupation												
Work	0(0.0)	17(20.0)	2(2.4)	0(0.0)	19(22.4)	4(4.7)	19(22.4)	0(0.0)	0(0.0)	3(3.5)	20(23.5)	0(0.0)
housewife	0(0.0)	38(44.7)	28(32.9)	0(0.0)	37(43.5)	25(29.4)	24(28.2)	42(49.4)	0(0.0)	0(0.0)	60(70.6)	2(2.4)
X^2 (p-value)	**10.26**			**p value 0.001**			**18.40**			**p value 0.000****		
Residence												
Rural	0(0.0)	32(37.6)	8(9.4)	0(0.0)	25(29.4)	6(7.0)	29(34.1)	11(12.9)	0(0.0)	0(0.0)	30(35.3)	1(1.2)
Urban	0(0.0)	23(27.1)	22(25.9)	0(0.0)	31(36.5)	23(27.1)	14(16.5)	31(36.5)	0(0.0)	3(3.5)	50(58.8)	1(1.2)

X^2 (p-value)	12.08			p-value 0.001			11.95			p-value 0.003		
Present social -support												
Mother	0(0.0)	30(35.3)	16(18.8)	0(0.0)	35(41.2)	18(21.2)	26(30.6)	20(23.5)	0(0.0)	3(3.5)	50(58.8)	0(0.0)
Mother-in-law	0(0.0)	11(12.9)	5(5.9)	0(0.0)	11(12.9)	3(3.5)	8(9.4)	8(9.4)	0(0.0)	0(0.0)	13(15.3)	1(1.2)
Sister	0(0.0)	14(16.5)	9(10.6)	0(0.0)	10(11.8)	8(9.4)	9(10.6.)	14(16.5)	0(0.0)	0(0.0)	17(20.0)	1(1.2)
X2 (p-value)	**1.68**			**p-value 0.43**			**3.59**			**p-value 0.46**		

*A statistically significant $p \leq 0.05$ **An extremely statistical significant $p \leq 0.001$

For both the control and study groups, there was no statistically significant association between stress level and socio-demographic factors such as age or educational level, or current social support prior to or during the intervention. The pre-and post-intervention stress levels in both the study and control groups had a highly statistically significant relationship with other socio-demographic characteristics, such as place of residence and occupation (p-value less than or equivalent to 0.001

Discussion

The number of cesarean sections performed worldwide is on the rise. CS doubled from 2003 to 2018, reaching 21%, and is growing at a rate of 4% per year **(Khalid et al., 2017)**. The cesarean section usually results in experiencing an increased level of postnatal pain, and psychological problems, which leads to stress disorder. Pain and tension after a cesarean section are complicated issues that interfere with the mother's healing and function. According to data, cesarean delivery is a biopsychosocial event requiring a holistic strategy that encourages control and pain and stress management **(Donaldson-Evans, 2019)**.

A relaxation reaction is a beneficial approach for turning off the fight-or-flight response and restoring the body to a pre-pain and pre-stress state before it. Relaxation is a physically relaxing state that enhances the parasympathetic nervous system, which is the other half of our nervous system **(MacDonald, 2020)**. Learning tremendous relaxation is one of the most crucial matters we can do in our lives. To decrease discomfort and stress, it is best to exercise the relaxation response first thing in the morning for 10 to 20 minutes **(Ibrahim et al., 2019).**

The researchers tried to investigate the impact of Benson's relaxation approach on pain and stress reduction in post-cesarean section mothers in this study. The current study's findings strongly supported the study's hypotheses.

Personal characteristics can play a major role in determining the exact features of the post-CS mothers that may affect their pain and stress after delivery. In the study sample's characteristics, the current data were revealed that more than half and roughly two-thirds of both the study and control groups were under the age of 25, with mean ages of 23.31±3.96 and 22.91± 3.96 years in a row, with no significant difference between the study and control groups. Regarding the residence, more than half of the study group and about two-thirds of the control group lived in urban areas. Furthermore, less than half of the study group had a University education, and about one-third of the control group had secondary education, with insignificant relation between them.

In terms of occupation, more than two-thirds of both the control and study groups were homemakers. Nonetheless, in terms of religion, Muslims made up the bulk of both the study and control groups. More than half and roughly two-thirds of the study and control groups, respectively, received social assistance from their mothers. In terms of socio-demographic characteristics, there were no statistically significant differences between the two groups, implying that the two groups under study are homogeneous. This may be because the Egyptian people preferred educating women and were not delayed childbearing after marriage, and some families preferred that women not work to take care of the children.

This result agreed with **El slayed et al. (2017)**, who investigated "Benson's relaxation medication. It is impacting on stress and coping among high-risk pregnancy women", and mentioned that the majority of the sample group was between the ages of 20-<30 years, that more than two-thirds of them had a technical or University degree, that they were not working, and that they were from rural areas.

Concerning their past and present obstetrical history, current research results showed that the gestational age of about one-third of the study and slightly less than half of the control groups was 38 weeks, respectively, with a mean gestational age of 38.51 ± 1.12 weeks and 38.35 ±0.94 weeks, respectively. According to abortion, slightly less than one-third of the study and

slightly less than one-quarter of the control groups had an abortion. For both research and control groups, more than three-quarters and a majority of the participants had CS in their futures. General anesthesia was used in most of both the research and control groups.

In addition, both the study and control groups showed transverse LSCS. As per the results, there was no statistically significant difference in obstetric experience between the two groups.

This result was congruent with **Ibrahim et al. (2014),** who noted that more than two-thirds of the control and study groups did not have a history of abortion. Around half of the study and control groups were anesthetized, with an average gestational age of 38.21 0.92 weeks and 38.35 1.36 weeks, respectively. All study and control groups employed the transverse incision. P>0.05 indicates that there was no statistically significant difference in obstetrical history between the two groups. Another study found that 29.1 percent of the population was classified as having chronic sinusitis, which is in line with this study's findings (13.2 percent as emergency CS and 15.9 percent as arranged CS). This may be the general perception that cesarean delivery is much safer now than in the past. It can also help alleviate some of the stress of waiting for labor to begin.

Coffee and tea are famous international beverages that positively impact the human body, including the cardiovascular and neural systems, and improve one's sense of well-being. Regarding the factors affecting the reliving pain method (coffee and tea), Rabiepoora et al. (2018), the current study results indicated that the two-fifth of the study group and about one-third of the control groups were not intaken tea and coffee. Meanwhile, about one-fifth of the study group intake and one-eighth of the control group more than four cups.

Regarding the resumption of mobility after a cesarean section, the current research finding revealed that most of the study group and more than two-thirds of the control group were mobile within 10 hours of the post-cesarean section, with a very significant difference between the study and control groups. This could be attributed to the influence of Benson's relaxation approach on lowering pain and assisting women in resuming movement and daily routine activities. This result was supported by **Jyoti and Kshirsagar, (2014)**, who discovered that post-operative problems related to immobility are the basic cause of mortality and morbidity in cesarean section patients. Women can be aided in preventing post-operative difficulties and consequences such as DVT and respiratory infection by receiving preventative and promotional post-operative treatment. Early ambulation can be one of the most critical parts of comprehensive post-operative treatment. It implies that patients can get out of bed as soon as feasible following a cesarean section. This time frame could be as little as 6-8 hours.

Most moms who have CS have acute post-operative pain, yet research suggests that only about half of them get adequate pain medication. Benson's relaxation technique is one of many post-operative therapies and management strategies for minimizing and controlling post-operative pain **Chou et al. (2016)**. As per the research, before applying Benson's relaxation approach, there was no statistically significant difference in pain intensity between the study and control groups. Nevertheless, after applying Benson's relaxation method to two groups, a very statistically significant difference in pain intensity was noticed between the two groups (p-values less than 0.001). These results emphasized the significant and

positive role of Benson's relaxation technique in affecting pain levels among post-cesarean section women. Therefore, women who plan to deliver by CS should be trained about Benson's relaxation technique through antenatal educational programs to relieve post-CS pain.

Muscle atrophy, poor immune function and wound healing, organ failure, and mortality may result from the stress reaction following surgery, which causes disruptions in the inflammatory, acute stage, hormonal, and genomic responses **El-Gabalawy et al. (2019)**. Prior to using Benson's relaxing method, there was no discernible difference in mean stress scale ratings between the control and study groups.

However, a statistically significant difference was detected between the two groups as per mean scores of perceived stress scale-related items after applying Benson's relaxation technique with p-values < 0.001. Before applying Benson's relaxation technique, few control and study groups had mild stress levels. Meanwhile, after applying Benson's relaxation technique, half of the study group had mild stress levels compared to a few control groups. As a result, the post-intervention stress level was significantly lower than the pre-intervention stress level. This finding might be owing to Benson's relaxation technique used, which has been of value in helping to relieve stress levels after CS. As a result, Benson's relaxation technique must adopt self-care initiatives to enhance overall health and well-being following CS. This is consistent with the findings of Solehati and Rustino (2015), who found a significant difference in pain severity between the two groups before and after the intervention, with the intervention group experiencing greater pain reduction than the control group.

This could be related to the mother's adaption to pain during the post-cesarean section wound healing process. The tissue has not bonded when the wound is still wet, resulting in intense agony. Pain is lessened once the incision is dried and tissue attachment has occurred. The pain was reduced in the intervention group owing to Benson's relaxation intervention.

These results came in the same harmony with **Ningrum et al. (2017)**, who stated that "in the hospital of Dr. H. Moch, according to Ansari Saleh Banjarmasin, the handheld relaxation techniques were efficacious in decreasing pain intensity following a cesarean section, with the consequence that the p-value (0,000 less than 0,05).

Also, the current study's outcomes are inseparably linked with a study by Sindhumol and Thadathil **(2017)**, who reported that the average pre-pain score of post-cesarean mothers was 6.26 on the first day and 5.74 on the second day. There is a 95 percent (p-value less than 0.005) statistically significant decrease in pain perception after all four sessions. On a 5-point Likert scale, 74% of the respondents said they were completely happy with the treatment. Furthermore, **Ju et al. (2019)** stated that patients who used relaxation methods experienced a marked decrease in pain contrasted to those who received standard nursing care.

Additionally, **Radha et al. (2019)**, demonstrated that Benson's relaxation treatment successfully lowered pain and tension in post-c-section mothers. **Bommi, (2016)**, cleared that Benson's relaxation treatment effectively reduced pain and stress among post-cesarean mothers.

The previously mentioned results came in the same harmony with **Priya et al. (2017),** who illustrated that most of the pain among post-cesarean mothers had severe, and moderate in the pre-test, and moderate, mild, and no pain in the post-test. This shows the imperatives need to understand the purpose of Benson's relaxation therapy regarding the decrease of the level of pain among post-cesarean mothers. It will

improve the quality of life, including stability in physiological, psychological, sexual, vocational, and lifestyle aspects.

Moreover, **Parmar and Tiwari, (2020)** demonstrated that Benson's relaxation treatment, which is a non-pharmacological strategy, has been shown to help the body achieve a sense of calm and contentment. It is a treatment that has been shown to be useful in lowering pain and tension and promoting healthy sleep. **Sapthica, (2014),** illustrated that the findings showed that Benson's relaxation treatment is a modest non-pharmacological strategy that is beneficial in lowering pain perception and tension in moms who had LSCS.

In support of what was mentioned previously, it was found that **Ajitha, (2012),** revealed that there was a statistically significant reduction in the stress and pain level after Benson's relaxation treatment among post-cesarean mothers. Also, **Salmanzadeh et al. (2018)**, mentioned that the results of this study showed that Benson's relaxation approach alleviated the anxiety before cesarean section in nulliparous women of cesarean section. Therefore, it is suggested that this method should be used to reduce pre-cesarean anxiety in nulliparous women. This convergence of the present study result and the other studies could be explained by the convergence in the sample size and characteristics.

Generally, many studies proved that Benson's relaxation therapy had a positive impact in relieving stress, anxiety, and pain level of many diseases, whether in obstetrics and gynecology, or other specialties. It can be mentioned, for example, as follows: **Sreedevi, (2014),** who studied "Effectiveness of relaxation program on institutionalized women with pregnancy-induced hypertension. Vinayaka Missions University. Salem, Tamilnadu, India", **Safitri, (2017)** who conducted "The impact of Benson's relaxation towards the anxiety level in cervical cancer cases in the inpatient ward of Camar III at General Hospital of Arifin Achmad Pekanbaru", **Paramban et a. (2016)** who conducted a study entitled by "Efficiency of Benson's relaxation therapy on the decrease of stress among primigravid mothers", **Sajadi et al. (2017)** who conducted Benson's Relaxation impact in contrasting to Systematic Desensitization on Anxiety of Female Nurses: A Randomized Clinical Tria", **El-Sayed et al. (2017)** who studied Benson's Relaxation treatment: Its impact on Stress and Coping among Mothers with High-Risk Pregnancy". **Yekta et al. (2016)** who performed a study entitled "The Comparison of Two Types of Relaxation methods on Postoperative State Anxiety in Candidates for The Mastectomy Surgery: A Randomized Controlled Clinical Trial". **Ibrahim et al. (2019),** performed "The impact of Benson relaxation method on anxiety in the emergency care".

Moreover, **Olia et al, (2019)** who studied "The impact of Benson Relaxation on Oxidative Stress Marker of Premenstrual Syndrome in Students of Khoy University of Medical Sciences", **Mohammadi and Parandin, (2019)** who performed a study entitled by "Impact of the mixture of Benson's relaxation method and brief psychoeducational intervention on multidimensional pain and negative psychological symptoms of pregnant women: A randomized controlled trial", **Mirhosseini et al, (2019)** who studied "Benson Relaxation method on the Fatigue Severity of Patients with MS", **Poorolajal et al, (2017)** who studied "I of Benson relaxation approach on the pre-operative anxiety and hemodynamic status: A single blind randomized clinical trial", **Elsayed e t al, (2019)** who studied "The Impact of Benson's Relaxation Technique on Anxiety, Depression and Sleep Quality of Elderly Patients Undergoing Hemodialysis,

Egypt", **Abd-Elraziek et al,(2017)** who conducted "The Effect of Benson's Relaxation Technique Training Program on Elderly Patients with Renal Failure, Egypt", **Momen et al, (2017)** who studied **"**The Effect of Benson's Relaxation Method on Pain Severity After Laminectomy in Patients Admitted to AJA Hospitals".

Regarding the correlation between pain and socio-demographic features, the current research's findings demonstrated a statistically significant correlation between pain and socio-demographic features in both study and control groups immediately after cesarean section except for education in the control group. Additionally, a significant correlation was noticed after two hours in both study and control groups except for age in the study group. Meanwhile, after four hours, a significant correlation is found in the control group contrasted to an insignificant correlation in the study group. Moreover, insignificant association during the second day and third-day pain assessment with socio-demographic characteristics in both study and control groups except for significant occupation found in both the study and control groups. There is a chance that aging has a big impact on discomfort. One of the elements that might impact a person's behavior is education level, which is linked to knowledge and can help a person deal with post-cesarean section pain in the elderly. The influence on employment is most likely attributable to methods of pain management used at work. Compared to employed women, homemakers have little experience with labor pain and dealing with it. Also, those women living in urban areas were more likely to cope with pain because they were more probable to be knowledgeable about coping strategies.

These results were disagreed with (in age point) and were similar to (in education and employment points). **Solehati and Rustina (2015)**, stated that pain severity was not related to age. There was a link discovered between education and pain intensity. There was a connection between pain severity and parity, even though employment did not affect pain severity. Parity-related pain coping mechanisms probably certainly cause the parity impact. Compared to multiparous mothers, primiparous mothers may have little experience with labor pain and how to manage it. This discrepancy in results could be related to the study's diverse locations and the investigated sample's personal attributes.

The current study's findings differed from those of Radha et al. (2019), who found no significant relationship between pain levels and demographic characteristics in the study and control groups. Additionally, the findings of this study contradicted those of **Bommi (2016)**, who found no significant link between the stated demographic factors and the level of pain in either the experimental or control groups before and after the intervention. A previous study **(Priya et al., 2017)** concluded that demographic variables such as education, age, parity, occupation, weight, and cesarean type were not associated with pain intensity.

In this regard, it was discovered that **Sapthica, (2014)** indicated no significant link between subjects' post-test pain levels and their age, education, occupation, or type of LSCS in the experimental group. There is no significant correlation between the control group's post-test pain levels and their age, education, occupation, or type of LSCS. The discrepancies in sample size and area of residency may explain the disparity between the current research results and those of other investigations.

Additionally, the current research outcomes revealed a significant correlation between pain and obstetrical history (type of anesthesia and type of CS) and factors

affecting the pain reliving method (Tea and coffee intake) in the control group in the pre and post-intervention phases. Meanwhile, a highly significant correlation was observed after two hours in the study group. This result was opposite to **Solehati and Rustina (2015)**, who discovered no statistically meaningful link between elective cesarean delivery and pain level emergency. Additionally, Priya et al. (2017) stated that there was no significant correlation between pain intensity and the type of cesarean. Sapthica (2014) found no correlation between the kind of LSCS and the post-test pain levels of patients in the therapy group. There was no significant correlation between the kind of LSCS and the control group participants' post-test pain ratings. The disparity in findings between our study and the other study could be attributed to differences in the eligibility criteria, which are impacted by cultural and environmental factors.

Concerning the relation between stress level and selected socio-demographic features, our research results clarified that there was no statistically significant relationship between stress level and selected socio-demographic features of the studied sample, which were age, educational level, and present social support at the pre-intervention and post-intervention stages. In contrast, there was a highly statistically significant relation between stress level and other socio-demographic features of the studied sample: residence and occupation (P> 0.001). From present research results, the researchers found that the greater the age, the greater the educational level, and the more social assistance present, the less sense of stress because that gives more ability to adapt to the pressures. The previous finding contrasted with Radha et al. (2019), who reported no substantial correlation between the tension level and demographic features in the experimental and control groups regarding the stress' post-test level.

Furthermore, the findings of this study contradicted those of **Bommi, (2016)**, who showed no significant relationship between selected demographic characteristics and stress in both the experimental and control groups during pre and post-intervention. **Sapthica, (2014)**, discovered that there was a strong association between the experimental group's age and post-test stress scores. However, there was no correlation between education or occupation and post-test stress ratings of experimental group individuals. There is no significant relationship between the control group's post-test stress scores and their age, education, or occupation. The disharmony between the current research results and the other findings may be due to the difference in the place of research, the different characteristics of the studied samples, and the criteria for selecting and excluding the sample.

Conclusion

Benson's relaxation technique decreased stress and pain in post-cesarean section mothers. Our observations showed no statistically significant variations in pain intensity between the study and control groups prior to using Benson's relaxation approach. Meanwhile, with p-values of less than 0.001, a statistically significant difference in pain intensity was seen between the two groups following Benson's relaxation technique intervention. Before Benson's relaxation technique intervention, there were no statistically significant variations in mean ratings of perceived stress scale-related categories between the study and control groups. However, after utilizing Benson's relaxation technique, there was a highly statistically significant difference in mean scores of perceived stress scale-related items between the two groups, with p-values less than 0.001. As a result, the

impact of Benson's relaxation technique was reversed. These data validated the research hypotheses.

Recommendations

The following suggestions were derived from the findings of the current study:

- A similar study utilizing a large representative probability sample is highly suggested in various maternity facilities to generalize the results further.
- Training each mother suspected of cesarean section to apply BRT immediately after delivery.
- A booklet explaining Benson's relaxation technique might be created and used in the prenatal, labor, and postnatal units.

Future recommendation

- Training all staff nurses in the obstetrics department to apply BRT for each woman after a cesarean section.

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Conflict of interest

No conflict of interest in this work was found.

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