Effect of Benson Relaxation Therapy on Post-Operative Pain and Stress among Nulliparus Women undergoing Cesarean Section

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Abstract:

Background: Cesarean section associated with persistent postoperative discomfort is a well-known side effect of this operation. Benson's Muscle Relaxation Technique is an effective complementary and non-pharmacological technique used to reduce incisional pain and stress levels. **Aim:** To evaluate the effect of Benson relaxation therapy on post-operative pain and stress among nulliparous women undergoing cesarean section. **Design**: A quasi-experimental design was used to achieve the aim of this study. **Setting:** The study was conducted in the obstetrics and gynecology department affiliated to Mansoura University Hospital. **Subject**: Non-probability purposive sampling technique was used to select a sample of 100 post-operative women undergoing cesarean section who were randomly assigned into two groups, 50 for each the study and control groups. **Four tools were used:** (I) a structured interview questionnaire, (II) a numerical pain rating scale, and (III) Perceived Stress Scale-10 (PSS-10). **Results**: The present study findings demonstrated that there was a statistically significant difference between mean pretest and posttest scores in the study group regarding pain level at the p<0.05 level. Furthermore, there were highly statistically significant differences in scores in the study group compared to the control group pain (P<0.05). Highly statistically significant differences were found between both groups as regards stress levels. **Conclusion:** Benson relaxation therapy was found to be useful in minimizing pain and stress levels among nulliparous women undergoing cesarean section. **Recommendations**: Benson relaxation therapy is recommended alongside treatment for nulliparous women undergoing cesarean section to reduce pain and stress.

Keywords: Benson Relaxation therapy, Cesarean section, Nulliparous Women Pain, and stress.

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Introduction:

A cesarean section is a medical operation in which the mother's uterus and abdominal wall are sliced to deliver the baby (**Mohammadbeigi et al., 2019).** Statistics reveal that cesarean rates have tripled since the 1950s and that this rate of increase is higher than anticipated. The usage of this delivery style has increased significantly in recent years throughout the world. Anxiety and worry rise in a mother when she is admitted to the maternity hospital (**Preethi et al., 2019).**

Women waiting in line for cesarean sections are scared and concerned about how to adjust to the circumstances. In most countries, there is a perception that the mother's mental health might have an impact on her unborn child. Fetal strangling at birth is more common in worried women, research has shown. Other adverse impacts of fear include irregular fetal heart rate patterns, low Apgar scores, an increase in maternal mortality during delivery,

and the delivery of babies with low birth weights as a result of the mother's anxiety-induced increased uterine artery resistance. Compared to multiparous women, nulliparous women suffer higher levels of stress, anxiety, and dread, and the effects of labor during the first birth can have an impact on subsequent pregnancies (**Dechernery et al., 2017).**

Stress is defined as any internal or external incident that calls for resiliency and adaptability from people or social systems. It entails physical and mental alterations that lead to the cognitive system interpreting various stimuli. The majority of biological systems can suffer damage from stressors. Excessive negative effects from the workplace have detrimental health and psychological effects **(Baigent and Baigent, 2018).**

Additionally, acute postoperative pain is frequently not adequately managed. Poor postoperative pain control may increase the

chance that patients will experience physiological reactions to pain that have negative effects on the body after surgery or, in some sensitive individuals, develop chronic pain issues. For instance, 74% of 300 surgery patients reported continuing excruciating pain after leaving the hospital (**Kaur et al., 2019**). Most women experience unpleasant postoperative side effects like pain and tension. An earlier return to normal life, better care, shorter hospital stays, and lower costs can all result from effective pain and stress management (**Chanif et al., 2019**).

Following surgery, safe and efficient pain management is a concern for all women. To effectively manage postoperative pain, nurses at all practice levels are crucial patient advocates (**Ward, 2015**). The use of complementary and non-pharmacological methods seems appropriate. Common complementary and non-pharmacological treatments include yoga, guided imagery, guided imagery therapy, biofeedback, relaxation techniques, lifestyle changes, music therapy, and biofeedback. The relaxation strategy has been offered as an additional, non-pharmacological nursing intervention that is secure and effective (**Harorani et al., 2020**). To reduce the adverse effects of abdominal surgery, complementary and non-pharmacological intervention has been advised. According to the findings of recent studies, complementary and non-pharmacological interventions are more efficient, less invasive, and more accessible than other treatments, reducing stress over its effect on physical and psychological symptoms such as pain and stress (**Van Dijk et al., 2016**).

One of the best methods for patients to relax their muscles is Benson's Relaxation Therapy (BRT). This method was developed by Herbert Benson in 1975, who claimed that it can produce a relaxation response by reducing autonomic nervous system activity (**Benson and Klipper, 2017**). It is the easiest and most efficient method of nurse intervention. It involves mindfulness techniques that, thanks to the impact of complete muscular relaxation on patients, have an impact on a variety of medical and psychological issues. One of the aims that

nurses work toward is making patients more comfortable, and complementary and non-pharmacological interventions aid in achieving this goal (**Jordan et al., 2013**).

Aromatherapy, meditation, massage treatment (or Massotherapy), muscular relaxation, music therapy, and guided visualization are examples of non-prescriptive complementary therapies. The advantages of complementary therapies include their low cost, ease of use, non-invasive nature, lack of pharmaceutical components, and lack of the chemical reactions associated with their prescription-only equivalents. According to research, stress-relieving techniques like yoga, progressive muscle relaxation, and massage can help pregnant women have healthier pregnancies (**Benson and Klipper, 2017**).

The relaxation technique is one of the nursing interventions that has been widely used in several studies as an additional therapy and, in some situations, as an alternative to pharmacological therapy. Stress issues can be effectively treated with relaxation. After a limited period of training, relaxation is a behavioral therapy that is easy to use, practical, and beneficial (**Apóstolo J., Kolcaba, 2019**).

Benson's relaxation is one of the techniques for relaxing that is often employed. Benson thinks that a crucial aspect of meditation is reducing stress. He found that four factors—a peaceful setting, a comfortable condition, a mental tool—such as a term that one's mind may focus on, and a passive attitude—increase the de-stressing effect of various stress alleviation techniques. In Benson's relaxation technique, the patient can get rid of a wide range of physical and mental symptoms, including anxiety, depression, tension, and pain, by relaxing their muscles and concentrating on their senses (**Hanifi et al., 2015**).

Studies demonstrated the impact of Benson's relaxation technique on patients waiting to have open heart surgery in terms of their level of anxiety. According to the findings of this study, Benson's relaxation helps heart surgery patients feel less anxious. The researcher sought to

ascertain the impact of Benson's muscle relaxation technique on the anxiety of nulliparous women scheduled for a cesarean section due to the high frequency of cesarean deliveries, the emphasis on anxiety as one of the most common psychological symptoms, and the importance of comfort in the practice of nursing (**Hazrati et al., 2016**).

To ensure the effectiveness of the procedure, medical-surgical nurses are crucial in post-abdominal surgery patient counseling, education, and advice. Additionally, you should be crucial in supporting patients so they can lessen and manage their pain, fatigue, and worry. Pharmaceutical therapy, information, diversion, attention-focusing techniques, and relaxation techniques are some non-pharmacological therapeutic strategies and interventions used to reduce pain (**Lilly and Dakshayani, 2018**).

Significance of the study:

Following surgery, pain management should be a top priority for all female patients. To effectively manage postoperative pain, nurses at all practice levels are crucial patient advocates. BRT can be used to improve patient comfort, but adverse effects must be avoided and managed to preserve patients' quality of life and enable them to proceed safely (Ward, 2015). According to the most recent study results and best nursing practice, a complementary and non-pharmacological intervention is more effective, less invasive, and more accessible than other treatments. It also reduces the cost of treatment.

Research hypothesis:

Women who will implement the Benson relaxation therapy have less pain and stress than those who do not implement it.

There will be a statistically significant difference and reduction in the pain and stress levels among women undergoing cesarean section in the study group as compared to the control group.

Aim of the study

To evaluate the effect of Benson relaxation therapy on post-operative pain and stress among nulliparous women undergoing cesarean section through:

- Assessing pain level among women undergoing cesarean section.
- Assessing pain level among women undergoing cesarean section.
- Evaluating the effect of Benson Muscle Relaxation Technique on incisional pain and stress levels among those undergoing cesarean section**.**

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Design:

A quasi-experimental design was used to achieve the aim of this study.

Setting:

The study was conducted in the obstetrics and gynecology department affiliated to Mansoura University Hospital.

Subjects:

Non-probability purposive sampling technique was used to select a sample of 100 post-operative women undergoing cesarean section who were randomly assigned into two groups, 50 for each of the study and control groups. 50 for the study group (who underwent Benson Relaxation therapy) and 50 for the control group (who received routine care only). They were chosen for six months, commencing in July 2021 and ending in December 2021. They were split into two equal groups based on their hospitalization admission code number (even or odd)

Sample size calculation:

The sample size was computed using the level of significance of power analysis of 0.95(=1-0.95=0.5) at alpha. The significance was set at 05 (one-sided) with a big effect size (0.5), and the high significance was set at 0.001.

Inclusion criteria included:
- Adult women who are over the age of 18 of both sexes.
- Not suffering from any other chronic disease
- Undergone cesarean section
- Agreed to participate in the study

Exclusion criteria included:
- Patients are having other chronic illnesses and mental diseases.
- History of chronic pain

Tools of data collection:

**Four tools were used in the current study as follows:**

Tool (I): A structured interview questionnaire: Was developed by the researchers after reviewing related literature. It was composed of two parts:

Part (1): It included demographic data which involved four items related to age, gender, educational level, and residence.

Part (2): It included the medical history of patients; it consisted of 4 items about previous hospitalization, previous surgery, type of surgery, and history of analgesic consumption.

Tool (II):- Numeric Rating Scale (NRS) for pain (McCaffery, 1991).

The Numeric Rating Scale (NRS) is a common standardized pain assessment scale for determining pain severity. However, literate patients (r = 0.94) outperformed uneducated ones (r = 0.71). The Numeric Rating Scale (NRS) is used as a single 11-point numeric scale to allow respondents to select a value between 0 and 10 to describe the intensity of their pain. NRS has good test-retest reliability in both literate and illiterate patients (r = 0.96 & 0.95, respectively). As a result, NRS was used to quantify pain severity before and after each massage session in this study, with patients asked to select a number that matched their level of discomfort. The NRS uses a 0-10 scale. The NRS has a 0–10 scale that can be used to describe pain severity as no pain (0), mild pain (1-3), moderate pain (4-6), and severe pain (7-8). (7-10).
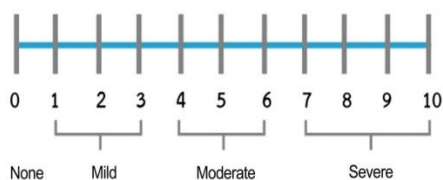
Tool II: Perceived Stress Scale-10 (PSS-10):

The Perceived Stress Scale-10 (PSS10) tool was adopted from **Cohen et al., (1983)** it consists of a ten-item self-report scale that examines individual stress levels. The nurses are asked to rate their feelings and thoughts during the past month. Each item was answered by the nurses on a five-point scale ranging from never (0) to very often (4). Therefore, each nurse's score ranged from 0 to 40. Higher scores indicated higher perceived stress levels.

Scoring system:

Perceived Stress Scale scores between 0 and 13 indicated low-stress levels; 14-26 indicated moderate stress, and 27 or above indicated severe stress. Four items used reverse scoring (items 4, 5, 7, 8). Convergent validity was obtained through correlational analysis of the PSS with measures on anxiety, depression, helplessness, and disease activity. The scale internal consistency was 0.78.

Validity and reliability of the tool:

Content validity: The content validity of the tools was tested by selected juries of obstetrics and gynecology nursing professionals to assess the clarity, feasibility, and applicability of the tools. The content validity index (CVI) was 88% for tool 1. Internal consistency of reliability was measured using the alpha Cronbach test and R was 0.89 for tool 1.

Methods of data collection:

The study included 100 women undergoing cesarean section. The researchers visited the previously selected settings two days / a week from 9 am to 1 pm on the morning shift (Sunday and Monday). Data were collected within six months, from the beginning of July 2021 to the end of December 2021. Approximately, 40-50 minutes were taken to complete each interview tool.

Pilot study

A pilot study was applied to 10% of women (10 women) to ensure and test the clarity and applicability of the tool. No modification in the tools was found. Women involved in the pilot were included in the current study.

Ethical considerations:

The researchers met with the medical and nursing directors of the selected facilities to discuss the study's objectives and secure their consent before starting. Women's assistance was obtained in exchange for their signed consent. The goal of the study and the anticipated results from its execution was mentioned to obtain permission for data gathering. The participants were informed of the purpose of the study. Women were made aware that their participation in the study was completely optional and that they might withdraw at any time, without having to give a reason. Women were informed that their data would be kept private and solely used for research.

Fieldwork:

The researchers met - women undergoing cesarean section individually at previously selected settings and explain the aim of the study after introducing themself to them. The researchers used face-to-face interviews and read the questions and possible answers to the women undergoing cesarean section to help them fill their responses in the tools.

• The women undergoing cesarean section were met over three consecutive times to do the following:
- For the first time, the researchers complete the questionnaires and interviewed each patient before applying the technique to collect baseline data (demographic and medical history, pain NRS and Stress Scale), and the first application of Benson's relaxation therapy, which is followed by the NRS and Stress Scale.
- The second time, the researchers re-complete the pain NRS and Stress Scale assessment scale pre-application of Benson's relaxation therapy.
- The third time, the researchers re-complete the pain NRS and Stress Scale post-application of Benson's relaxation therapy, two days post-surgery.
- The researchers instructed the women to practice the relaxation therapy correctly twice a day in the morning and evening for 20 min, for two months in their homes

Intervention

The instruction of Benson's relaxation therapy included the following steps:

-Sit in a comfortable position.
-Close the eyes.
-Relax all muscles beginning from the soles for the feet to the top of the head moving forward up, and relax all parts of the body.
-Take a breath from the nose. Exhale from the mouth whenever exhaling, repeat one word or number (as Allah or one) inhale, and exhale with comfort and confidence.
-Do this for 20 minutes. Try to keep the body and muscles relaxed and repeat the desired word in their mind. Then open the eyes slowly and do not move or stand up for a few minutes. Patients in the control group received routine hospital care only such as examination, wound dressing, and medication administration.

Administrative design:

Administrative permission was obtained through an issued letter affiliated to Mansoura University Hospital Directors of the previously selected department to achieve this study.

Statistical analysis:

Version 20 of SPSS statistical software was used to analyze the data. For three days, continuous data were collected and expressed as mean standard deviation before and after the massage (SD). Numerals and percentages were used to express categorical data. The two groups were compared using the independent t-test, and the variations in each group before and after a massage session were compared using the paired t-test. A one-way repeated-measures analysis of variance was used to investigate changes in the levels of discomfort, tiredness, and anxiety (ANOVA). For variables that did not match the parametric assumptions, the Mann-Whitney test was applied. The chi-square test was applied to examine the relationship between the two variables. The chi-square test was used in the case of non-contiguous data to look at the relationship between two variables. Statistical significance was defined as a P value of less than 0.05.

Results:

Table (1) shows that the mean age of women undergoing cesarean section in the study group was 43.17 ± 12.45, whereas, in the control group, it was 42.16 ± 7.46 years, 52%

and 54% of the studied patients in both groups were females. Regarding the level of education, more than half of the undergoing cesarean section in the study group (54%) had secondary education, and the same in the control group. In terms of residence, the same table revealed that (72%) of the studied women in the studied group lived in urban areas, compared to the same percentage in the control group. In terms of sociodemographic variables, there was no statistically significant difference between the study and control groups.

From **table 2**, it was clear that (66% and 68%) of those undergoing cesarean section in both the study group and the control group respectively were not previously hospitalized. Regarding previous surgery, 72% of the studied patients in the study group were and had not had previous surgery compared to 70% in the control group. Both the study and the control groups (54% and 52%) respectively not had a history of analgesic consumption.

Figure 1: Revealed that during the pretest, 20% and 19% of the studied women in the study and control groups, respectively, reported moderate pain. During the posttest, all of the women undergoing cesarean section (42%) experienced mild pain compared to no one in the control group.

Table 3: Illustrated that (16%) of the women undergoing cesarean section experienced a severe stress level pre-Benson Relaxation therapy and no none of them had a severe-stress level post-Benson Relaxation therapy. Overall PSS mean score among the studied women was 18.59 (SD=2.77, range=9 - 28).

Table (1): Frequency and percentage distribution of the studied post-women undergoing cesarean section **according to their demographic characteristics:**

Item	Study group (n=50)		Control group (n=50)		X^2	P - value
	No.	%	No.	%		
Patients' age						
18 < 40	28	56.0	31	62	3	0.5^{NS}
40 ≤ 60	22	44.0	19	38		
Mean ±Stander deviation	43.17 ± 12.45		42.16 ± 7.46			
Gender						
Male	24	48	23	46	4	0.5^{NS}
Female	26	52	27	54		
Patients ' education						
-Primary education	11	22.0	10	20	3	0.7^{NS}
-Secondary education	27	54.0	27	54		
-University education	12	24.0	13	26		
Residence:						
-Urban	35	72	37	72	2	1.6^{NS}
-Rural	15	28	13	28		

NS-non-significant

Table (2): Frequency and percentage distribution of the studied undergoing cesarean section according to their medical history

Medical history	Study group (n=50)		Control group (n=50)		X2	p-value
	No.	%	No.	%		
Previous hospitalization						
Yes	17	34.0	16	32.0	1	0.06
No	33	66.0	34	68.0		
Previous surgery						
Yes	14	28.0	15	30	1	0.04
No	36	72.0	35	70		
History of analgesic consumption						
Yes	23	46.0	24	48	1	0.7
No	27	54.0	26	52		

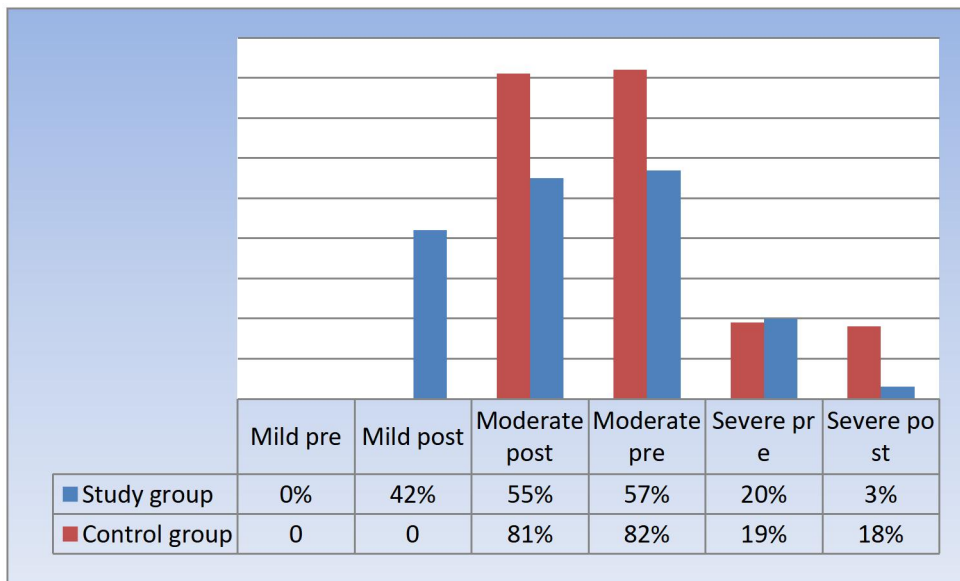|	Mild pre	Mild post	Moderate post	Moderate pre	Severe pre	Severe post
■ Study group	0%	42%	55%	57%	20%	3%
■ Control group	0	0	81%	82%	19%	18%

Figure 1: Percentage distribution of pain levels among the studied undergoing cesarean section in study and control group pre and post-Benson Relaxation therapy (N=100)

Figure 1: Percentage distribution of Perceived stress levels among the studied undergoing cesarean section in study and control group pre and post-Benson Relaxation therapy (N=100)

Perceived stress level	Pre		Post		X^2	P-value
	No.	%	No.	%		
Low stress	5	10	24	48.0	17.024	<0.001*
Moderate stress	37	74	26	52		
Severe stress	8	16	0	0		
Overall Perceived stress	Mean SD					
	18.59	2.77				
	Minimum 9.00			**Maximum** 28.0		

Discussion:

People with both acute and chronic illnesses frequently mention pain as one of their symptoms. The management of postoperative pain involves nurses significantly. The most common post-abdominal surgery symptom is fatigue, which is defined as a severe, ongoing, and subjective feeling of physical, emotional, and/or cognitive tiredness that affects daily activities (**Hisato Takagi & Umemoto, 2017**). Stress makes the pain feel worse and makes people feel much more uncomfortable. Pharmacologic and non-pharmacologic approaches to pain management are the two most popular methods. However, not all aspects of postoperative pain may be completely relieved by the medication. Because of this, non-pharmacological remedies like massage may help to relieve postoperative pain (**Chanif et al., 2019**). As one of the alternative therapies, Benson Relaxation Therapy has been shown to improve postoperative pain and stress.

In the current study, it was discovered that the average age of women having a cesarean section in the study group was 43.17 12.45 years, compared to 42.16 7.46 years in the control group, that more than half of the patients were female in both groups, that more than half had completed secondary education, and that the majority of patients in both groups resided in urban areas. No statistically significant difference existed between the study and control groups in terms of sociodemographic factors. The two groups exhibited similar sociodemographic characteristics. This may be because deliberate random sampling was used to choose the study sample. Since it guaranteed the two studies' homogeneity, this was advantageous for the current investigation, generalization of the study results, and avoiding the confounding variables' effect.

The study's conclusions show that both the study and control groups' cesarean sections involved more than half of the women. This might be the result of how differently males and females react to pain, with females being more sensitive to it. The female sex hormones, according to **Tahmasbi and Hasani, (2016**) may be responsible for these variances. Additionally, compared to men, women complained of discomfort in more anatomical regions and for longer periods (**Elsayed et al., 2019**).

The majority of women undergoing cesarean sections in both the research and control groups, according to the study's findings, had never been hospitalized before, and there was no discernible difference in their medical information between the two groups. This result, in the opinion of the researchers, suggests that the baseline levels of discomfort, tiredness, and anxiety were equivalent in both groups. The study "A Quasi-Experimental Study to Evaluate the Effects of Foot Massage on Incisional Pain in Post-surgery Patients Admitted to Selected Hospitals in Hoshiarpur, Punjab," by **Noruzi et al. (2018)** also reported similar findings.

Kurniasari et al. (2016) concluded in their study titled Prospective examination of the pain experience, beliefs and attitudes, and pain treatment of a cohort of Danish surgical patients that the majority of post-patients in both the experimental and control groups reported a moderate level of pain. The current study found that during the pretest, the majority of both the study and control groups experienced a severe difference.

The results of the current study showed that nearly two-fifths of the women having cesarean sections experienced only minimal pain during the post-test following Benson Relaxation therapy. The researchers claim that this result illustrates the beneficial effects of relaxation application, which meets patients' needs for pain relief.

This discovery is comparable to that made by **Tahmasbi, Hasani, (2016**) who found that 20 minutes of non-pharmacological techniques on the first postoperative day significantly decreased both pain intensity and pain distress in postoperative patients.

Similar to **Kapogiannis et al. (2018),** who investigated "The effect of relaxation technique on pain in women who have had an abdominal hysterectomy at Mangalore's selected hospitals," they found a significant decrease in pain in the study group following relaxation

technique compared to the control group in women who had a hysterectomy.

This result is congruent with those of **Sahrakhil et al. (2017),** who found that in the study group that got the intervention compared to the control group, the mean score of pain intensity was significantly lower.

The current study's findings showed that, at the 0.05 level, there was a statistically significant difference between the mean pretest and post-test ratings of women having cesarean sections in the study group concerning how much pain they experienced. The researchers claim that it proved the beneficial effects of foot massaging for pain reduction.

These results are in line with **Wei et al., (2020)** investigation into the "Efficacy of an Educational Intervention on Levels of Pain, Anxiety, and Self-Efficacy for Patients with Cancer in an Internal Medicine Clinic," which found that intervention therapy resulted in a significant reduction in pain for patients.

The objective and hypothesis of the present study were supported by the results, which showed a considerable positive effect of Benson's relaxation technique on pain levels in patients after abdominal surgery. These results are in line with those of **Harorani et al., (2020),** who concluded that massage was more effective than standard care for affective and sensory pain on postoperative day 2 and confirmed a notable improvement and pain reduction.

The first stress hormone produced by the adrenal glands is cortisol, and cesarean-section patients commonly experience significant levels of psychological stress, worry, and despair (**Harorani et al., 2020**). Muscle tension and cortisol secretion are decreased by BRT (Benson's relaxation technique), which lowers anxiety. Additionally, it affects cardiac workload, respiration, and heart rate (Sahrakhil et al., 2017).

By reducing sympathetic nervous system stimulation and enhancing parasympathetic nervous system activation, this technique modulates the hypothalamus. Non-pharmacological therapies, like Benson's relaxation technique, can help patients by minimizing and controlling their problems and

by enhancing their psychological well-being so they can better manage their physical condition (**Kapogiannis et al., 2018).**

On the other hand, **Sahrakhil et al. (2017)** discovered no connection between Benson's relaxation technique and anxiety levels in hemodialysis patients after conducting a study in Yogyakarta titled "The Effect Benson Relaxation Technique on Anxiety in Hemodialysis Patients."

Less than a fifth of cesarean section patients had significant stress levels before Benson Relaxation therapy, and none of them had extreme stress levels following it, according to the results. It proved the effectiveness of Benson's relaxation method in lowering stress levels, according to the researchers.

Conclusion:

Based on the results and hypotheses of the present study, the study findings concluded that Benson relaxation therapy was found to be useful in minimizing pain and stress levels among nulliparous women undergoing cesarean section. The study revealed that there was a difference between mean pretest and posttest scores were found statistically significant at $p < 0.05$ level in the study group regarding pain and stress levels.

Recommendations:

The following suggestions are made based on the current study's findings:

- Benson relaxation therapy is recommended alongside treatment for nulliparous women undergoing cesarean section to reduce pain and stress.
- Incorporate a systematic pain assessment into their daily routine.
- Nurses can also help post-operative patients and caregivers improve their knowledge and abilities by teaching them how to apply the Benson Muscle Relaxation Technique to decrease pain and stress following surgery.
- Further studies and replication of the current study with a larger sample of nurses in different settings are required for generalizing the results.

   References:

Apóstolo J, Kolcaba K. The Effects of Guided Imagery on Comfort, Depression, Anxiety, and Stress of Psychiatric Inpatients with Depressive Disorders. Arch Psychiatr Nurs. 2019;6(3):411-30.

Armstrong, T.S., & Gilbert, M.R. (2018): Practical strategies for management of fatigue and sleep disorders in people with brain tumors. *Neuro-Oncol*; 14(suppl 4):i65-72. doi:10.1093/neurons/nos210

Baigent M, Baigent R. (2018): Burnout in the medical profession: not a rite of passage. Med J Aust; 208(11):471-472.

Benson H. and Klipper MZ. The relaxation response. New York: HarperCollins. 2017; 1975. Book.

Chanif, C., Petpichetchian, W., & Chongchareon, W. (2019). Does Massage Relieve Acute Postoperative Pain? A Literature Review. *Nurse Media Journal of Nursing, 3*(1), 483 - 497. https://doi.org/10.14710/nmjn.v3i1.4452

Cohen S, Kamarck T, Mermelstein R. (1983): A global measure of perceived stress. J Health Soc Behav; 24 (4): 385–396. Doi: 10. 2307/2136404, PMID 6668417

Dechernery AH, Nathan L, Goodwin TM, Laufer N. Current Diagnosis & Treatment Obstetrics & Gynecology. 11, editor. USA: McGraw-Hill Companies,2017.

Elsayed EB, Radwan EH, Elashri NI., and El-Gilany AH. The Effect of Benson's Relaxation Technique on Anxiety, Depression and Sleep Quality of Elderly Patients Undergoing Hemodialysis. International journal of nursing didactics 2019; 9: (02), Available at https://doi.org/10.15520/ijnd.v9i02.2443, 2019

Gan TJ, Habib AS, Miller TE, White W, Apfelbaum JL. (2017): Incidence, patient satisfaction, and perceptions of post-surgical pain: Results from a US national survey. Current Medical Research and Opinion, Jan 1; 30(1):149-60. DOI: 10.1185/03007995.2013.860019

Hanifi N, Ahmadi F, Memarian R, Khani M. Effect of Benson relaxation techniques on hemodynamic variables of a patient undergoing coronary angiography. J Shahid Sadoghi Univ Med Sci. 2015;12(4):78-86.

Harorani M, Davodabadya F, Farahania Z, hezavec, AK, and Rafieid, F. The effect of Benson's relaxation response on sleep quality, pain and anorexia in cancer patients undergoing chemotherapy: A randomized controlled trial. Complementary Therapies in Medicine. 2020; 50, (5), 102344. https://doi.org/10.1016/j.ctim.2020.102344.

Harorani M, Davodabadya F, Farahania Z, hezavec, AK, and Rafieid, F. The effect of Benson's relaxation response on sleep quality and anorexia in cancer patients undergoing chemotherapy: A randomized controlled trial. Complementary Therapies in Medicine. 2020; 50, (5), 102344. https://doi.org/10.1016/j.ctim.2020.102344.

Hazrati M, Hoseini M, Dejbakhsh T, Taghavi SA, Rajaee-fard A. The effect of Benson relaxation therapy on anxiety level and severity of symptoms in patients with irritable bowel syndrome. Arak Medical UniversityJournal. 2016;9(4):1-9.

Hisato Takagi TA, Umemoto T. (2017): Perioperative Depression or Anxiety and Postoperative Mortality in Cardiac Surgery: A Systematic Review and Meta-analysis, Springer. *DOI: 10.1007/s00380-017-1022-3*

Hisato Takagi TA, Umemoto T. (2017): Perioperative Depression, stress, and Anxiety and Postoperative Mortality in Cardiac Surgery: A Systematic Review and Meta-analysis, Springer. DOI: 10.1007/s00380-017-1022-3

Jordan K, Gralla R, Jahn, F. and Molassiotis A. International antiemetic guidelines on chemotherapy-induced nausea and vomiting (CINV): content and implementation in daily routine practice. Eur. J. Pharmacol. 2018; 722, 197–202. doi: 10.1016/j.ejphar.2013.09.073.

Kapogiannis A, Tsoli S. and Chrousos G. Investigating the effects of the progressive muscle relaxation-guided imagery combination on patients with Cancer Receiving chemotherapy treatment: A systematic review of randomized controlled trials. EXPLORE. 2018; 14(2):137–143. DOI: 10.1016/j.explore.2017.10.008

Kaur S, Lobo DJ, Latha T. (2019): Role of foot and hand massage on the anxiety for post-operative open-heart surgery patients: A Randomized Control Trial. International Journal of Nursing Education, Jul 1; 5(2):205.

Kurniasari A N, Kustanti A. and Harmilah H.

The Effect of Benson Relaxation Technique with Anxiety in Hemodialysis Patients in Yogyakarta. Indonesian Journal of Nursing Practices. 2016; 1(1), 40-47. DOI: 10.18196/ijnp.1149

Lilly AE, Dakshayani B. (2018): Effect of preoperative teaching on the stress and anxiety level of patients with neurosurgery. *Indian J Psychiatr Nurs*; 15(2):1. doi:10.4103/2231-1505.262432

McCaffery M. Pain management: problems and progress. In: McCaffery M, Pasero CL. Pain: clinical manual. 2nd ed. St. Louis: Mosby; 1999:1–14. 1. **https://doi.org/10.1046/j.1365-2702.2000.0374c.x**

Mohammadbeigi a, Mohammadsalehi n, Yazdani M. Factors Influencing Cesarean Delivery Method in Shiraz Hospitals. Iran Journal of Nursing (Nursing Care Research Center). 2019;21(56):37- 45.

Noe, C. E. (2020): Pain Management for Clinicians, 1st, Springer, Switzerland, p; 88. Book.

Noruzi zamenjani M, Masmouei B, Harorani M, Ghafarzadegan, R., Davodabady, F., Zahedi, S. and Davodabady, Z.. The effect of progressive muscle relaxation on cancer patient's self-efficacy. Complement Ther Clin Pract. 2019;34:70–75. DOI: 10.1016/j.ctcp.2018.10.014

Preethi Jazna ms, Reeta Jebakumari p, Santha DNJ. A Study to Assess the Effectiveness of Benson Relaxation Therapy on Blood Pressure and Stress among Women with Pregnancy Induced Hypertension in Selected Hospitals, Madurai. Asian J Nursing Edu and Research. 2016;6(2):167-70.

Sahrakhil, M, Nasrabadi, T. and Ebrahimi Abyaneh, E. Effects of Benson's relaxation technique on the comfort level of patients before coronary artery bypass grafting (A clinical trial) Medical-Surgical Nursing Journal. 2017, 5(4): 60-65.

Tahmasbi, H. and Hasani, S. Effect of Benson's relaxation technique on the anxiety of patients undergoing coronary angiography: A randomized control trial. Journal of Nursing and Midwifery Sciences. 2016; 3(1): 8-14. DOI: 10.18869/acadpub.jnms.3.1.8

Van Dijk JF, Vervoort SC, Van Wijck AJ, Kalkman CJ, Schuurmans MJ. (2016): Postoperative patients' perspectives on rating pain: A qualitative study. International journal of nursing studies, Jan 31; 53:260-9. DOI: 10.1016/j.ijnurstu.2015.08.007

Ward CW. (2015): A decision tree model for postoperative pain management. Urologic Nursing, Sep 1; 35(5):251-7. doi: 10.1097/01.NURSE.0000456385.48273

Wei C, Joshua H, Uhr BA, Mishra BS. and Albert Y. Effectiveness of an educational intervention on levels of pain, anxiety, and self-efficacy for patients with cancer among Patients in an Internal Medicine Clinic. JAMA oncology. 2020; 134(4):424-431. DOI: 10. 1001/JAMA Oncol. 6212.

Yilmaz SG. and Arslan S. Effects of progressive relaxation exercises on anxiety and comfort of Turkish breast cancer patients receiving chemotherapy. Asian Pacific Journal of Cancer Prevention. 2019; 16 (1): 217-20. DOI: 10.7314/apjcp.2019.16.1.217

Yoon HG. And Park H. The effect of auricular acupressure on sleep in breast cancer patients undergoing chemotherapy: A single-blind, randomized controlled trial. Appl Nurs Res. 2019; 48:45–51. DOI: 10.1016/j.apnr.2019.05.009

Zafarghandi n, Hadavand sh, Torkestani f, Zaeri f, Variji M. Evaluation of anxiety and fear of labor in the postpartum period. Journal of medical council of the Islamic Republic of Iran. 2015;2(23):155-60.