The Effect of Benson's Relaxation Therapy on Pre-Cesarean Section Fear and Anxiety among Nulliparous Women

Samah Nasser Abd ElAziz ElShora[1], Hanan Elsayed Mohamed Elsayed[2], Nagwa Ibrahim El-Feshawy[3] & Hend Abd Elmegiued Abd Elaziz Hassen[4]

[1.] Lecturer of Woman's Health and Midwifery Nursing, Faculty of Nursing Mansoura University, Egypt.
[2.] Professor of Woman's Health and Midwifery Nursing, Faculty of Nursing Mansoura University, Egypt.
[3.] Lecturer of Woman's Health and Midwifery Nursing, Faculty of Nursing Mansoura University, Egypt.
[4.] Lecturer of Obstetric and Gynecologic Nursing Faculty of Nursing, Alexandria University, Egypt.

Abstract:
Background: Fear and anxiety are considered the most common symptoms experienced by nulliparous women before a cesarean operation. Benson's therapy is one of the non-pharmacological strategies that has been associated with positive effects on various physical and psychological conditions and promoting relaxation before cesarean operation. **Aim:** The current study aimed to investigate the effect of Benson's relaxation therapy on pre-cesarean section fear and anxiety among nulliparous women. **Design:** A quasi-experimental research design was employed. **Setting:** The study was carried out at Mansoura New General Hospital, Mansoura City, Egypt. **Sampling:** A purposive sample of one hundred and sixty nulliparous women. **Tools:** Data was gathered through three tools: A personal data questionnaire, the State Anxiety Inventory, and the Childbirth Attitudes Questionnaire. **Results:** There was a highly statistically significant reduction in the total mean fear score from 44.4±8.7 pre-intervention to 35.4±13.4 post-implementation of Benson's relaxation therapy. Also, there was a highly statistically significant reduction in the total mean anxiety scores from 54.7±11.1 pre-intervention to 37.9±12.4 post-intervention. Furthermore, there was a significant positive correlation between anxiety scores and fear of CS scores after implementing Benson's relaxation therapy. **Conclusion:** Benson's relaxation therapy is a simple, feasible, and valuable therapeutic approach that doesn't necessitate specialized equipment. It can be easily implemented after a brief instruction. Also, it has a significant beneficial effect on alleviating fear and anxiety among nulliparous women who go through cesarean sections. **Recommendation:** Applying Benson's relaxation therapy to alleviate fear and anxiety prior to a cesarean section.

Keywords: Anxiety, Benson Relaxation Therapy, Cesarean section, Fear & Nulliparous women.

Introduction

A Cesarean Section (CS) is a procedure performed on women during childbirth. It involves making an incision in the wall of the abdomen and uterus to safely deliver the baby. CS is typically recommended when there are risks to the health of either the mother or the baby if a vaginal delivery is pursued. However, there are situations where a C-section may be performed based on request or preference **(Lupu et al., 2023)**. When done in this manner a C-section can be lifesaving by preventing complications such as dystocia. Nevertheless, it's important to acknowledge that it can also be emotionally challenging for mothers and may lead to anxiety disorders **(Chen et al., 2020)**.

Anxiety related to having a cesarean section has been associated with physiological and psychological risks. For instance, according to **Almedhesh et al. (2022)** research, fear and anxiety linked to CS increase the likelihood of experiencing postpartum depression. The fear and anxiety experienced prior to undergoing CS can trigger responses from both the sympathetic nervous system and parasympathetic nervous system along with affecting hormone levels. As a result,

these responses can lead to an elevated pulse, blood pressure, and cardiac arrhythmia **(Koca et al., 2021)**.

Moreover, excessive fear and anxiety before and during surgery can have impacts. These impacts can lead to a chance of complications related to anesthesia during the surgery, increased need for pain relief after the operation, longer recovery time, delayed start of breastfeeding and discharge, higher cost, and reduced satisfaction with the childbirth experience **(Schaal et al., 2020 & Hepp et al., 2018)**.

The level of fear and anxiety during childbirth may vary depending on whether a woman has had children. Women who have not given birth before generally tend to feel fear and anxiety compared to multiparous women who have had previous childbirth experiences. Furthermore, the impact of labor during a woman's first childbirth can have implications for subsequent childbirth experiences **(Sun et al., 2019)**. It is crucial to address and reduce fear and anxiety specifically related to CS since lower levels of preoperative and intraoperative fear and anxiety have been linked to greater maternal satisfaction and a more positive overall birth experience **(Noben et al., 2019)**.

Managing fear and anxiety can be approached through both pharmaceutical and nonpharmacological methods. While pharmaceutical approaches are commonly used before sections, they can be expensive, sometimes painful, and carry the risk of potential adverse effects on the fetus if they pass through the placenta **(Eslami et al., 2020).** Therefore, there is a focus on utilizing non-pharmacological techniques to alleviate fear and anxiety in women undergoing cesarean sections **(Abadi et al., 2018).** One effective example is the use of relaxation techniques to reduce fear and anxiety **(Vagnoli et al., 2019).**

Relaxation techniques, such as meditation or mindfulness, are non-pharmacological approaches that offer significant benefits without relying on medications. There are ways to achieve the relaxation response, including meditation, massage therapy, muscle relaxation exercises, acupuncture, energy healing practices, different breathing techniques like controlled breathing or diaphragmatic breathing, yoga sessions or classes specifically designed for pregnant women, as well as prayer or spiritual practices **(Mohamady et al., 2022).** The relaxation response is associated with decreased oxygen consumption levels and a reduction in activity within the sympathetic nervous system **(Ibrahim et al., 2019).**

One recognized method for achieving relaxation is Benson's relaxation therapy (BRT), developed by Dr. Herbert Benson in 1970. Because of its simplicity, BRT has become increasingly popular compared to other relaxation techniques **(Mahmoudirad et al., 2017).** BRT, which stands for Behavioral Relaxation Technique, is a method that focuses on breathing as a way to manage anxiety **(Riddhi & Tiwari, 2020).** It involves four components: creating a peaceful environment, attaining the right mental state, and utilizing a specific word or phrase for concentration, and adopting a peaceful thought **(Fateme et al., 2019).** Furthermore, Benson relaxation therapy has shown results in reducing the activity of the sympathetic nervous system and levels of naturally occurring catecholamines. It has been linked to positive outcomes in physical and mental conditions, such as promoting muscle relaxation, easing tension, lowering blood pressure during pregnancy, and providing relief from depression, anxiety, and stress in first-time pregnant women **(Mahmoudirad et al., 2017).** Engaging in BRT has also been associated with an increase in self-esteem. By focusing on breath control and concentration, women can regulate their pulse and blood pressure while avoiding responses to anxiety **(Jourabchi et al., 2020).**

Nurses specializing in maternity care play a role in supporting women throughout their pregnancy journey and childbirth. They serve as educators, organizers, and advocates for women's health. Nurse educators must stay updated on non-pharmacological approaches like Benson relaxation therapy to effectively manage fear and anxiety. Acquiring skills in delivering BRT can enhance their ability to provide effective care **(Radha et al., 2019).**

The Significance of the study

The rate of CS has been increasing globally, with a rise in the number of CS deliveries worldwide **(Abdelrahman et al., 2020).** WHO reported that approximately 18.6 million CS deliveries occur annually, with a range of 6% to 27.2% in developed countries and the rest in developing countries **(Fitri et al., 2020).** Egypt has one of the greatest rates of CS deliveries, with a rate of 54% **(Jadoon et al., 2020).** At Mansoura New General Hospital in Egypt, the CS rate was 65.44% in 2017, 61.29% in 2018, and 64.84% in 2019 **(El-Shora & El-Nemer, 2020).** Despite its popularity, more than 80% of women experience fear and anxiety before and during CS surgery **(Abarghoee et al., 2022; Salmanzadeh et al., 2018).**

A significant number of women who undergo cesarean sections experience heightened levels of anxiety before the procedure **(Maleki et al., 2022).** Research suggests that 63–86% of women undergoing CSs have higher levels of fear and anxiety compared to those undergoing general surgeries **(Ferede et al., 2022).** These preoperative fears and anxieties, along with the use of medications aimed at alleviating them, can have negative effects on both the mother and the baby. Hence, it is important to have methods that can reduce the fear and anxiety experienced by women who are going through CSs **(Abarghoee et al., 2022).** Healthcare professionals should think about adopting techniques to ease these concerns like incorporating relaxation methods. One practiced relaxation technique is known as BRT, which has been credited as an effective and cost-efficient method for reducing fear and anxiety **(Bagheri et al., 2021).** Given the elevated incidence of CS and the prevalence of anxiety and fear as psychological symptoms, providing comfort and support is crucial in the field of nursing. The researchers sought to explore the influence of BRT on fear and anxiety levels in nulliparous women who were scheduled for a CS.

Aim of the study:

This study aimed to investigate the effect of Benson's relaxation therapy on pre-cesarean section fear and anxiety among nulliparous women.

Study Hypotheses:

After the implementation of Benson's relaxation therapy, pre-cesarean nulliparous women will experience a significant reduction in their level of fear and anxiety compared to before the application.

Operational Definitions

Benson's relaxation therapy: In the present study, it means complete muscle relaxation followed by regulated breathing to alleviate fear and anxiety of CS. It is done for 20 minutes and repeated four times during the two hours before the cesarean section.

Fear: In the present study, it means an unfavorable state of feeling tense, uneasy, apprehensive, or frightened that seems chiefly before CS; this was measured by the Childbirth Attitudes Questionnaire (CAQ).

Anxiety: In the present study, it means an unfavorable state of feeling restlessness, concern, or worry due to fear of CS; this was measured by the State Anxiety Inventory (SAI).

Method

Study Design

A quasi-experimental research design was employed, which is specifically a one-group pre- and post-test design. The purpose of this design was to examine the effect of BRT on the levels of fear and anxiety among expectant mothers scheduled for a CS. In this study, data is collected without the presence of a control group. The participants underwent baseline assessments to measure the dependent variables, then performed Benson's relaxation therapy, after which they underwent a post-test to assess any changes in the dependent variables **(LoBiondo-Wood & Haber, 2018).**

Study Setting:

The study was carried out at Mansoura New General Hospital, specifically in the obstetrics and gynecology department, which provides various healthcare services in the Delta Region. The department has fourteen beds, and the operating room consists of three rooms, each equipped with an operating table. On average, about 67 cesarean sections are done each month, with a total of 836 cases in 2022.

Study Sample: A purposive sample was used.

Study Subjects: included 160 nulliparous women. They were chosen from the previously declared setting according to the following criteria:

Inclusion criteria:

Pregnant women aged 18–35 years are nulliparous; a fear score between 33 and 48 on the Childbirth Attitudes Questionnaire equates to moderate fear; an anxiety score above 39 on the State Anxiety Inventory represents a moderate to severe anxiety level.

Exclusion criteria:

Pregnant women who had an emergency cesarean section, who needed additional medical care before CS, and who had mental or psychiatric disorders.

Sample size estimation:

Based on data from the literature **(Salmanzadeh et al., 2018)**, considering a level of significance of 5% and a power of study of 80%, the sample size can be calculated using the following formula:

$$n = \frac{(Z\alpha/2 + Z\beta)^2 \times 2(SD)^2}{d^2}$$

where SD = the standard deviation obtained from the previous study; $Z_{\alpha/2}$, for 5%, is 1.96; Z_β, for 80%, is 0.84; and d, for the expected difference. Therefore,

$$n = \frac{(1.96 + 0.84)^2 \times 2(5.1)^2}{(1.6)^2} = 159.3$$

Based on the above formula, the sample size required is 160.

Tools for data collection:

Three tools were used to gather data:

I: A personal data questionnaire, to collect personal and obstetric data on the studied women, including their age, education, occupation, economic status, residence, gestational age, and number of antenatal visits.

II: The Childbirth Attitudes Questionnaire (CAQ): It was adopted from Lowe (2000). It was applied to rate the level of childbirth fear. The CAQ consists of 16 items, such as "I am really afraid of giving birth" and "I am afraid of painful labor contractions." and so on….,

Scoring system: Each item is rated on a four-point scale ranging from "no fear" to "high fear." The sum scores on the CAQ can range from 16 to 64, with higher scores indicating a higher level of childbirth fear. A score equal to or less than 32 indicates low fear, a score between 33 and 48 indicates moderate fear, and a score more than 48 denotes a high level of fear "(Abd El-Aziz et al., 2017).

III: The State Anxiety Inventory (SAI): It was adopted from **(Spielberger, 1970).** It was used to measure anxiety levels among nulliparous women who had cesarean section. The SAI consists of 20 items, such as "I'm presently worrying over possible misfortunes &I feel over-excited and rustled" and so on….,

Scoring system: Each item is rated on a four-point Likert scale, ranging from "Not at all" to "Very much so." Scores on the SAI Anxiety scale can range from 20 to 80, with higher scores suggesting higher levels of anxiety. The scoring categories for anxiety levels are mild anxiety (score 20-39), moderate anxiety (score 40-59), severe anxiety (score 60-75), and very severe anxiety (score above 76).

Validity and reliability of the tools:

The tools' content validity was verified by three experts specializing in women's health and midwifery nursing, ensuring that its content is accurate, relevant, and comprehensive. The researchers conducted a reliability analysis using Cronbach's alpha coefficient. The Childbirth Attitudes Questionnaire had a test-retest reliability of 0.897 and the State Anxiety Inventory had a reliability coefficient of 0.901, indicating high reliability of the tools.

Pilot study:

A pilot study was carried out on 16 nulliparous women (10%) in the same setting to assess the clarity and pertinency of the tools. Considering the results obtained from the pilot study, a few modifications were made, such as simplifying some sentences to be clearly understood, and the pilot data was excluded from the final sample.

Ethical Considerations:
Ethical approval was acquired from the Research Ethics Committee at the Faculty of Nursing, Mansoura University (Ref. No. P. 0532). Before the research commenced, formal written consent was taken from the studied nulliparous women after describing the purpose and goals of the study. Studied nulliparous women were aware that participation was non-compulsory, and that they had the right to depart at any time. Ambiguity, privacy, security, and secrecy were ensured during the research.

Research process:
The research process was completed over three-months, from September 2023 to the end of November 2023, encompassing the planning, assessment, implementation, and evaluation phases.

Phase (1): Preparatory phase
During the preparatory phase, ethical approval was obtained, and approval from the hospital administrator was sought. Relevant literature was reviewed, study tools were prepared and validated, and a pilot study was conducted.

Phase (2): Interviewing and Assessment:
In the interviewing and assessment phase, the researchers interviewed pre-cesarean section women who met the inclusion criteria at the hospital, explaining the study's aim and obtaining informed written consent. Then general and obstetric data were collected; after that, the Childbirth Attitudes Questionnaire (CAQ) and the State Anxiety Inventory (SAI) were collected as a pre-test (it took about 20–25 minutes per woman). This phase aimed to establish baseline data on childbirth fear and anxiety levels. The data were collected three days per week, from 9 a.m. to 5 p.m. About 3–7 nulliparous women were interviewed per day.

Phase (3): Implementation of intervention
The intervention phase involved implementing Benson's relaxation technique. The women were individually instructed by the researchers on the technique by demonstrating the steps of Benson's relaxation therapy. To ensure the accurate performance of the technique, the women were requested to describe it back to the researchers and demonstrate the technique, and modification instructions were made.

The women were positioned in relaxed positions and were requested to close their eyes and concentrate on their breathing to eliminate interrupting thoughts from their minds as much as possible. They were advised to inhale deep breaths from the nose and exhale with the lips while saying the names of Allah or the word that has a reassuring sense to the women, repeatedly spoken at a regular pace with resignation.

Simultaneously, they began to relax their muscles from the tips of their toes and worked their way up to the muscles in their head and upper body until all of the muscles were completely relaxed. They were also advised not to think about the efficacy of this therapy. The therapy was practiced for at least twenty minutes, followed by 10 minutes as a resting period, aiming to achieve inner peace and relaxation. They were instructed to open their eyes and stand still for a while to accomplish the anticipated relaxation. BRT was repeated four times, two hours before the cesarean section under the supervision of the researchers. The steps are summarized in the following figure:
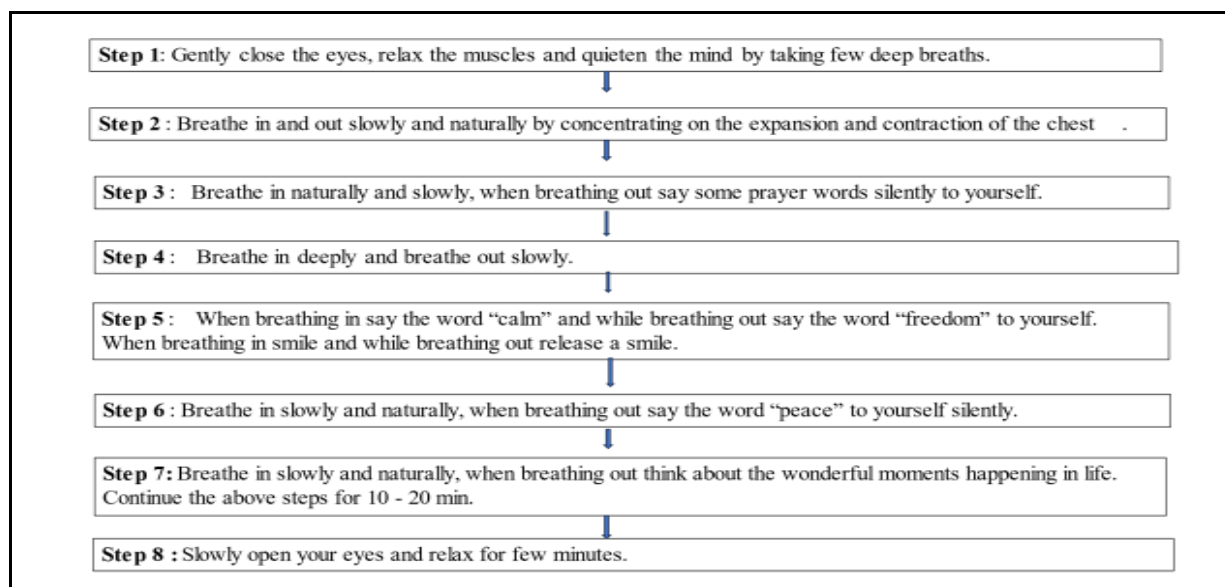

Step 1: Gently close the eyes, relax the muscles and quieten the mind by taking few deep breaths.

Step 2: Breathe in and out slowly and naturally by concentrating on the expansion and contraction of the chest .

Step 3: Breathe in naturally and slowly, when breathing out say some prayer words silently to yourself.

Step 4: Breathe in deeply and breathe out slowly.

Step 5: When breathing in say the word "calm" and while breathing out say the word "freedom" to yourself. When breathing in smile and while breathing out release a smile.

Step 6: Breathe in slowly and naturally, when breathing out say the word "peace" to yourself silently.

Step 7: Breathe in slowly and naturally, when breathing out think about the wonderful moments happening in life. Continue the above steps for 10 - 20 min.

Step 8: Slowly open your eyes and relax for few minutes.

Figure (1): Steps of Benson relaxation therapy.
Adopted from: **Harichandana & Anju Philip (2023).** Effectiveness of Benson relaxation therapy on prenatal anxiety among mothers in a tertiary care hospital, Kochi. International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 12 (10), 3149-3153. DOI: https://doi.org/10.18203/2320-1770.ijrcog20232963

Phase (4): Evaluation phase

The effectiveness of BRT was assessed by the same tool that was used as the pre-test to confirm the level of fear and anxiety experienced by the pre-cesarean section nulliparous women after the fourth relaxation session.

Statistical Analysis:

Statistical analyses were conducted using SPSS for Windows version 20.0 (SPSS, Chicago, IL). Continuous data, represented as mean ± standard deviation (SD), followed a normal distribution. Categorical data were presented as numbers and percentages. The Chi-square test was employed to compare variables with categorical data. The correlation coefficient test was used to examine relationships between two variables with continuous data. The reliability (internal consistency) of the study's questionnaire was assessed. Statistical significance was determined at $p<0.05$.

Results

Table (1): General Information and Obstetric Data of the Studied Nulliparous Women (n=160)

Items	No. (n=160)	%
Age (Years)		
< 25	65	40. 6
25 – 30	66	41.3
> 30	29	18.1
Mean ±SD	**26.0 ±4.6**	
Educational level		
Read and write	24	15.0
Basic	48	30.0
Secondary	57	35.6
University or more	31	19.4
Occupation		
Housewife	89	55.6
Employed	71	44.4
Economic status (self-reported)		
Weak	50	31.3
Fair	64	40.0
Good	46	28.7
Residence		
Urban	114	71.3
Rural	46	28.7
Gestational Age (per week)		
38	21	13.1
39	98	61.3
40	41	25.6
Mean ±SD	**39.2 ±0.6**	
Number of Antenatal Visits		
<4	34	21.3
≥4	126	78.7

Table (2): Fear Level among the Studied Nulliparous Women pre and post Intervention (n=160)

Fear level	Pre – Intervention		Post – Intervention		Significance test	
	N	%	N	%	X^2	P
Low Fear	0	0	75	46.9		
Moderate Fear	116	72.5	56	35.0		
High Fear	44	27.5	29	18.1	99.012	<0.001**
Total Mean ±SD	44.4 ±8.7		35.4 ±13.4		7.125	<0.001**

**Highly significant at P <0.001

Table (3): Anxiety Level among the Studied Nulliparous Women pre and post Intervention (n=160)

Anxiety Inventory	Pre – Intervention		Post – Intervention		Significance test	
	N	%	N	%	X^2	P
Mild Anxiety	0	0	102	63.75		
Moderate Anxiety	126	78.75	52	32.5		
Severe Anxiety	34	21.25	6	3.75	152.364	<0.001**
Total Mean ±SD	54.7 ±11.1		37.9 ±12.4		12.768	<0.001**

**Highly significant at P <0.001
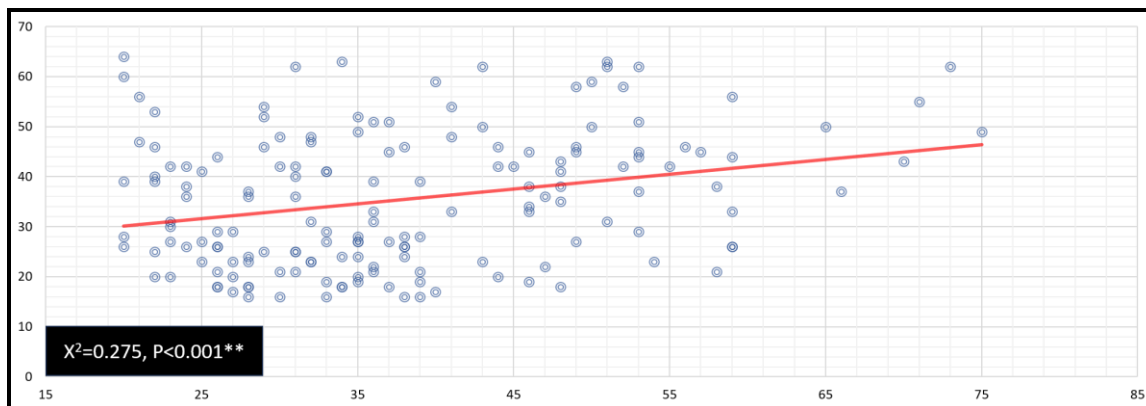
 Figure (1): Correlation between Fear and Anxiety among the Studied Nulliparous Women Post-Intervention
**Highly significant at P <0.001

Table (1): Shows that 41.3% of the studied women were aged between 25 and 30 years. 35.6% and 55.6% of them, respectively, had a secondary education and were housewives. 40.0% of the studied women reported a fair income. 71.3% of them came from rural areas. 61.3% of the studied women had 39 weeks of gestation. 78.7% of them attended ≥4 antenatal visits.

Table (2): Explains that there was a highly statistically significant reduction in fear scores post-intervention, in which moderate fear had decreased from 72.5% pre-intervention to 35.0% post-intervention. Also, high fear had decreased from 27.5% pre-intervention to 18.1% post-intervention (p<0.001). There was a highly statistically significant reduction in the total mean score of fear from 44.4 ±8.7 pre-intervention to 35.4 ±13.4 post-intervention (p<0.001).

Table (3): Displays that there was a highly statistically significant reduction in anxiety scores post-intervention, in which moderate anxiety had decreased from 78.75% pre-intervention to 32.5% post-intervention. Also, severe anxiety had decreased from 21.25% pre-intervention to 3.75% post-intervention (p<0.001). There was a highly statistically significant reduction in the total mean score of anxiety from 54.7 ± 11.1 pre-intervention to 37.9 ± 12.4 post-intervention (p<0.001).

Figure (1): Illustrates that there was a significant positive correlation between fear scores and anxiety scores among the studied nulliparous women post-intervention (p<0.001).

Discussion
This study aimed to investigate the effect of Benson's relaxation therapy on pre-cesarean section fear and anxiety among nulliparous women. The findings of the study indicated the effect of Benson's relaxation therapy in lowering fear and anxiety scores post-intervention compared to pre-intervention scores among the studied nulliparous women. So, the research hypothesis was accepted.

Concerning fear scores among the studied nulliparous women, the present study stated that there was a highly statistically significant reduction of fear scores post-implementation of Benson relaxation therapy. This can be described as Benson relaxation therapy enhancing the equilibrium between the anterior and posterior hypothalamus, resulting in a decrease in sympathetic nervous system activity and the release of catecholamines. As a result, it alleviates muscular tension, lowers blood pressure and heart rate, and promotes regulated breathing. By achieving these physiological changes, Benson therapy helps women maintain self-control and reduce sensations of fear. It has been linked to positive outcomes in various physical and mental conditions. Specifically, for women practicing Benson relaxation therapy, the technique allows them to systematically relax all their muscles, leading to the alleviation of fear and anxiety. This finding was aligned with a systematic review done by **Birner & Grosse (2021)**, which also proved a positive impact of relaxation techniques on the fear of childbirth. Similarly, **Boryri et al. (2019)** conducted a study examining the effect of relaxation

exercises on childbirth fear among primiparous women in Iran. Their findings indicated that the score for training relaxation was consistently higher than that of guided imagery in lowering the fear of birth. In addition, **Rahimi et al. (2015)** conducted a study investigating the impact of relaxation training on fear in Iran that demonstrated the efficiency of relaxation in decreasing anxiety and fear of birth among women in the study group.

Regarding anxiety scores among the studied nulliparous women, the current study presented that there was a highly statistically significant reduction of anxiety scores after implementing Benson relaxation therapy, as moderate and severe anxiety scores decreased post-intervention. This observation could be substantiated since Benson relaxation therapy is a relaxation method that incorporates elements of belief and breathing techniques. By ensuring that the body's oxygen consumption is not excessive, this therapy induces a state of relaxation in the muscles, promoting a sense of calmness and comfort. Consequently, it has a beneficial impact on mental well-being.

This finding was in similar line with those of a study performed by **Harichandana & Anju Philip (2023)**, who assessed the role of Benson therapy on antenatal anxiety in India and clarified that the level of antenatal anxiety among women who practiced Benson's therapy was significantly lower than the women in the control group. Similarly, **Zaghloul et al. (2022)** examined the effect of the Benson relaxation technique on anxiety levels in Egypt and found that there was a reduction in anxiety scores post-implementation of Benson relaxation therapy in the study group compared to the control group.

Also, **Abarghoee et al. (2022)** performed a randomized controlled trial involving 105 women scheduled for cesarean sections in Iran. Their study revealed that participants in Benson's relaxation technique group experienced significantly lowered anxiety levels after the relaxation compared to both the music therapy group and the control group. Additionally, **Salmanzadeh et al. (2018)** performed a trial study in Iran titled "The Effect of Benson's Relaxation on Preoperative Anxiety in Cesarean Sections in Nulliparous Women." They demonstrated that the mean and SD of anxiety scores after the relaxation showed a decline in anxiety levels in the relaxation group compared to the control group.

Regarding the correlation between fear and anxiety scores, the present study stated that there was a significant positive association between fear and anxiety. As the level of fear decreased, the level of anxiety also consequently decreased after the implementation of BRT. The finding was supported by **Ahmadi & Bagheri (2017)**, who conducted a clinical trial to assess the efficacy of mindfulness education on anxiety and fear of birth among nulliparous pregnant women in Iran and found that

the improvement of anxiety scores among the studied participants was positively associated with the improvement of fear from childbirth scores.

So, Benson relaxation therapy is a novel approach in midwifery education that can be employed as an effective method to alleviate fear and anxiety in clinical settings, particularly for women undergoing cesarean sections.

Conclusion:
Benson's relaxation therapy is a simple, feasible, and valuable therapeutic approach that doesn't necessitate specialized equipment. It can be easily implemented after a brief instruction. Also, it has a significant beneficial effect on alleviating fear and anxiety levels among nulliparous women undergoing cesarean sections.

Recommendations:
- Implementing Benson's relaxation therapy in various clinical nursing settings to alleviate fear and anxiety before cesarean section.
- Considering Benson's relaxation therapy as a standard nonpharmacological management technique in delivery units

Further research:
- Investigating the effectiveness of Benson's relaxation therapy on women's adaptation before gynecological operations.
- Studying the combined effects of music therapy and Benson's relaxation therapy on anxiety in primiparous women before and after cesarean delivery.
- Assessing factors and cofactors that contribute to increased anxiety and fear among women undergoing cesarean section.

References
▪ **Abadi, F., Abadi, F., Fereidouni, Z., Amirkhani, M., Karimi, S., & Kalyani, M. (2018):** Effect of acupressure on preoperative cesarean section anxiety. Journal of acupuncture and meridian studies, Vol. (11), No. (6), Pp. 361-366.
▪ **Abarghoee, S., Mardani, A., Baha, R., Aghdam, N., Khajeh, M., Eskandari, F., & Vaismoradi, M. (2022):** Effects of Benson Relaxation Technique

and Music Therapy on the Anxiety of Primiparous Women Prior to Cesarean Section: A Randomized Controlled Trial. Anesthesiology research and practice, Vol. (2022), Pp. 1-9. https://doi.org/10.1155/2022/9986587

▪ **Abd El-Aziz, S., Mansour, S., & Hassan, N. (2017):** Factors associated with fear of childbirth: It's effect on women's preference for elective cesarean section. Journal of Nursing Education and Practice, Vol. (7), No. (1), Pp. 133-46.

▪ **Abdelrahman, A., Samy, M., Shawky, M., & Azmy, G. (2020):** Subcutaneous tissue irrigation with povidone iodine in decreasing the rate of surgical site infection following cesarean section: (randomized control trial). QJM: An International Journal of Medicine, Vol. (113) (Supplement_1), hcaa056-020.

▪ **Ahmadi, L., & Bagheri, F. (2017):** The effectiveness of educating mindfulness on anxiety, fear of delivery, pain catastrophing and selecting caesarian section as the delivery method among nulliparous pregnant women. Nursing Practice Today, Vol. (4), No. (1), Pp. 52-63.

▪ **Almedhesh, S., Elgzar, W., Ibrahim, H., & Osman, H. (2022):** The effect of virtual reality on anxiety, stress, and hemodynamic parameters during cesarean section. Saudi Medical Journal, Vol. (43), No. (4), Pp. 360-369.

▪ **Bagheri, H., Moradi-Mohammadi, F., Khosravi, A., Ameri, M., Khajeh, M., Chan, S., & Mardani, A. (2021):** Effect of Benson and progressive muscle relaxation techniques on sleep quality after coronary artery bypass graft: a randomized controlled trial. Complementary Therapies in Medicine, Vol. (63), 102784.

▪ **Birner, C., & Grosse, G. (2021):** Systematic Review on the Efficacy of Interventions for Fear of Childbirth, Anxiety and Fear in Pregnant Women. PREPRINT (Version 1) available at Research Square https://doi.org/10.21203/rs.3.rs-223224/v1

▪ **Boryri, T., Navidian, A., & Marghzari, N. (2019):** Comparison of the effect of muscle relaxation and guided imagery on happiness and fear of childbirth in primiparous women admitted to health care centers. International Journal of Women's Health and Reproduction Sciences, Vol. (7), No. (4), 490-495.

▪ **Chen, Y., Yang, X., Guo, C., Liao, Y., Guo, L., Chen, W., & Xie, R. (2020):** Prevalence of post-traumatic stress disorder following caesarean section: a systematic review and meta-analysis. Journal of Women's Health, Vol. (29), No. (2), Pp. 200-209.

▪ **El-Shora, S., & El-Nemer, A. (2020):** Effect of leg wrapping technique on prevention of spinal induced hypotension and fetal acidosis during cesarean section: Randomized controlled trial. Journal of Nursing Education and Practice, Vol. (10), No. (2),

Pp. 70-81. DOI: https://doi.org/10.5430/jnep.v10n2p70

▪ **Eslami, J., Hatami, N., Amiri, A., & Akbarzadeh, M. (2020):** The potential beneficial effects of education and familiarity with cesarean section procedure and the operating room environment on promotion of anxiety and pain intensity: A randomized controlled clinical trial. Journal of Education and Health Promotion, Vol. (9), 240. https://doi.org/10.4103/jehp.jehp_31_20.

▪ **Fateme, B., Fatemeh, M., Vahid, M., Arezou, N., Manizhe, N., & Zahra, M. (2019):** The effect of Benson's muscle relaxation technique on severity of pregnancy nausea. Electronic Journal of General Medicine, Vol. (16), No. (2), em125. https://doi.org/10.29333/ejgm/93480

▪ **Ferede, Y., Bizuneh, Y., Workie, M., & Admass, B. (2022):** "Prevalence and associated factors of preoperative anxiety among obstetric patients who underwent cesarean section": A cross-sectional study. Annals of Medicine and Surgery, Vol. (74), 103272.

▪ **Fitri, N., Immawati, S., & Ludiana, P. (2020):** The effect of relaxation of benson on the intensity of section cesarea post women pain at Muhammadiyah Metro Hospital in 2018. European Journal of Molecular and Clinical Medicine, Vol. (7), No. (6), Pp. 630-637.

▪ **Zaghloul, M., Hassan, S., Saraya, O., Abd elmasieh, H., & Ali, H. (2022):** Effect of Benson Relaxation Technique on Pain Intensity, Anxiety Level and Sleep Quality among Post Caesarean Women. Egyptian Journal of Health Care, Vol. (13), No. (3), Pp. 1002-1013.

▪ **Harichandana S., Anju Philip T. (2023):** Effectiveness of Benson relaxation therapy on prenatal anxiety among mothers in a tertiary care hospital, Kochi. International Journal of Reproduction, Contraception, Obstetrics and Gynecology, Vol. (12), No. (10), Pp. 3149-3153. DOI: https://doi.org/10.18203/2320-1770.ijrcog20232963

▪ **Hepp, P., Hagenbeck, C., Gilles, J., Wolf, O., Goertz, W., Janni, W., & Schaal, N. (2018):** Effects of music intervention during caesarean delivery on anxiety and stress of the mother a controlled, randomised study. BMC pregnancy and childbirth, Vol. (18), Pp. 1-8.

▪ **Ibrahim, A., Koyuncu, G., Koyuncu, N., Suzer, N., Cakir, O., & Karcioglu, O. (2019):** The effect of Benson relaxation method on anxiety in emergency care. Medicine, Vol. (98), No. (21). doi: 10.1097/MD.0000000000015452

▪ **Jadoon, B., Assar, T., Nucier, A., Raziq, H., Saad, A., & Amer, W. (2020):** Analysis of the caesarean section rate using the 10-Group Robson classification at Benha University Hospital,

Egypt. Women and Birth, Vol. (33), No. (2), Pp. E105-e110.

▪ **Jourabchi, Z., Satari, E., Mafi, M., & Ranjkesh, F. (2020):** Effects of Benson's relaxation technique on occupational stress in midwives. Nursing2022, Vol. (50), No. (9), Pp. 64-68.

▪ **Koca, C., Yıldırım, B., & Şenyuva, İ. (2021).** Association between self-reported bruxism, peripartum depression and myogenous temporomandibular disorders among postpartum women in Turkey. Balkan Journal of Dental Medicine, Vol. (25), No. (3), Pp. 139-146.

▪ **LoBiondo-Wood, G. & Haber, J. (2018):** Nursing research: methods and critical appraisal for evidence-based practice (9th ed.) Elsevier: Pp. 171-179.

▪ **Lowe, N. (2000):** Self-efficacy for labor and childbirth fears in nulliparous pregnant women. Journal of Psychosomatic Obstetrics & Gynecology, Vol. (21), No. (4) Pp. 219-224.

▪ **Lupu, V., Miron, I., Raileanu, A., Starcea, I., Lupu, A., Tarca, E., & Fotea, S. (2023):** Difficulties in adaptation of the mother and newborn via cesarean section versus natural birth— A narrative review. Life, Vol. (13), No. (2), Pp. 300.

▪ **Mahmoudirad, G., Hosseini, M., Nasirizade, M., & Biabani, F. (2017):** The effects of Benson's relaxation response on fatigue during pregnancy: a two-group randomized controlled field trial. Modern Care Journal, Vol. (14), No. (3), e66965.
DOI: https://doi.org/10.5812/modernc.66965

▪ **Maleki, M., Mardani, A., Harding, C., Basirinezhad, M., & Vaismoradi, M. (2022):** Nurses' strategies to provide emotional and practical support to the mothers of preterm infants in the neonatal intensive care unit: A systematic review and meta-analysis. Women's Health, Vol. (18), 17455057221104674. doi:10.1177/17455057221104674

▪ **Mohamady, S., Abd Elmoniem, S., Araby, O., Elrefaeys, S., & Nageeb, S. (2022):** Effect Of Benson Relaxation Technique on Reducing Pain and Stress Among Post Cesarean Section Mothers. Journal of Positive School Psychology, Vol. (6), No. (8), Pp. 6820-6848.

▪ **Noben, L., Goossens, S., Truijens, S., Van Berckel, M., Perquin, C., Slooter, G., & Van Rooijen, S. (2019):** A virtual reality video to improve information provision and reduce anxiety before cesarean delivery: randomized controlled trial. JMIR mental health, Vol. (6), No. (12), e15872.

▪ **Radha C., Bommi K., & Sumithra S. (2019):** Effectiveness of Benson's Relaxation Therapy on Pain and Stress among Post Caesarean Mothers. International Journal of Advances in Nursing

Management, Vol. (7), No. (4), Pp. 316-320. doi: 10.5958/2454-2652.2019.00074.X

▪ **Rahimi F, Ahmadi M, Rosta F, Alavi Majd H, & Valiani M. (2015):** Effect of relaxation training on pregnancy anxiety in high risk women. Safety Promotion and Injury Prevention, Vol. (2), No. (3), Pp. 180-188. [Persian].

▪ **Riddhi, P., & Tiwari, A. (2020):** Literature Review: Effect of Benson's Relaxation Therapy (BRT) on Post Caesarean Section Pain and Stress. Journal of Nurse Midwifery and Maternal Health, Vol. (6), No. (8), Pp. 6820-6848.

▪ **Salmanzadeh, A., Rahgoi, A., Fallahi-Khoshknab, M., Mohammadi-Shahbelaghi, F., &Rahgozar, M. (2018):** The Effect of Benson's relaxation on pre-operative anxiety in Cesarean section in Nulliparus Women. Journal of Advanced Pharmacy Education & Research, Vol. (8), No. (S2), Pp. 194-200.

▪ **Schaal, N., Hepp, P., Heil, M., Wolf, O., Hagenbeck, C., Fleisch, M., & Fehm, T. (2020):** Perioperative anxiety and length of hospital stay after caesarean section–A cohort study. European Journal of Obstetrics & Gynecology and Reproductive Biology, Vol. (248), Pp. 252-256.

▪ **Spielberger, C. (1970):** Manual for the state-trait anxiety, inventory. Consulting Psychologist, Vol. (22), Pp. 220-224.

▪ **Sun, Y., Huang, K., Hu, Y., Yan, S., Xu, Y., Zhu, P., & Tao, F. (2019):** Pregnancy-specific anxiety and elective cesarean section in primiparas: A cohort study in China. PLoS One, Vol. (14), No. (5), e0216870.

▪ **Vagnoli, L., Bettini, A., Amore, E., De Masi, S., & Messeri, A. (2019):** Relaxation-guided imagery reduces perioperative anxiety and pain in children: a randomized study. European journal of pediatrics, Vol. (178), Pp. 913-921.