Effect of Benson Relaxation Technique on Pain Intensity, Anxiety Level and Sleep Quality among Post Caesarean Women

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Abstract

Background: Pain, sleep disturbances, and anxiety are the most complains of the women post caesarian section (Cs). Benson's relaxation technique is one of the non pharmacological pain management strategies, reducing the side effects of analgesics and pain intensity in post caesarean mothers. Administering Benson's relaxation therapy can have an effect on pain among post caesarean mothers. **The aim of the study**: assess effect of Benson relaxation technique on Pain intensity, anxiety level and sleep quality among post caesarean women. **Research Design:** A quasi-study design (pre and post intervention). **Sitting:** The study was conducted in obstetric and gynecological department at Ismailia University Hospital. **The study sample:** convenience sample included 160 women undergoing Cs was recruited. Randomly assigned 80 women who received Benson relaxation technique and 80 women who received standard hospital routine care. **Tools:** Five tools were used for data collection: personal and socio demographic data, visual analogue scale (VAS), Pain Rating Index (PRI), Hospital Anxiety Scale, and Groningen Sleep Quality Scale and Benson relaxation technique. **Results:** The main results yielded in a significant difference effect of Benson's relaxation technique when applied among post cesarean section women on reducing level of anxiety of the study group. **Conclusion:** the Benson relaxation technique had a a highly statistically in reducing intensity level of pain , level of anxiety and improving quality of sleep among post CS women in the study group than the control group. **Recommendations** Benson's Relaxation Technique should be incorporated in the nursing intervention protocols post-Cs women.

Keywords: Caesarean section, Benson Relaxation Technique, sleep quality, pain intensity and anxiety level

Introduction:

Child birth is considered as a multi-dimensional experience. During the journey of pregnancy, women undergo anxiety, fear, and stress especially before delivery. Giving birth to a new life is the most painful experience in a woman's life, both in normal vaginal delivery as well as in caesarean deliveries; while post-cesarean section women experience pain due to operative trauma **(Mohammad and Mohammad, 2009 & Preethi Jaznams, Jebakumari, 2016).**

Cesarean section (Cs) rate suddenly surge over the world specifically in Egypt demographic and health survey 2014, Cs rate surged from 6.6% in 1995 to 51.8% **(Ministry of Health and Population, 2014).** Although, Cs is an end for pregnancy physical and psychological problems, it is the beginning of others posts Cs physical and psychological problems. Generally, woman during post-partum period is exhausted physically and psychologically, this exhaustion is doubled or even tripled in cases of Cs. However, post-partum is a critical period in which maternal and neonatal death may occur especially post Cs, if neglected by health care providers. Post Cs

women complain from physical and psychological problems. Physical problems include: incision pain, activity limitation, gastrointestinal disturbances, and anesthesia complications. Psychological problems include anxiety, depression, sleep disturbances, loss of control, and disturbed body image **(Knapp, and Borucki et al., 2013; World health organization, 2013).**

Caesarean section is easier to undergo but after pain is much worse. The numbness around the incision and occasional aches and pain can last for several months intermeddle with the mother-child interaction. If the mother is comfortable it will be easier to breast feed the baby and can also complicate in neonate oversight, which helps in achieving mother infant bonding (**DeCarvalho and Varanda et al., 2016; Borges and de Moura et al., 2016).**

Nursing interposition plays an important party embodies relaxation techniques, a complementary therapy and choice curative therapeutics. Relaxation techniques imply melodious practices as guided emotional imagery, progressive relaxation, self-hypnosis, biofeedback, and breathing exercises (**Barabady, and Baghdassarians et al., 2020)**. Benson's relaxation the key role natural and psychological to subdue disquiet, restlessness, mood and self-expectation, despondency, and lessens force This technique ought to be complete in a recreate surrounding environment, calm relaxed state, mental concentration, and in a positive attitude to form a real effect (**Fatemeh and Vahid et al., 2019)**.

Benson's relaxation is a prosperity-emitting technique example to complete relaxation of all body muscles and sleep disorders management. Also urge charge decreases the uneasiness horizontal, mood disturbance, embody discomfort, body discomfort, activity of autonomic nervous system and as a minimum it might have an effect on sleep quality. Moreover, relaxation therapy impairs the measure needful to fall sleeping, lodge-storming latency, and also the frequency of waking up **(Sahar and Taghreed, 2017).** Achieving the choice effective wish external, psychological, social and heavenly-minded well beings outcomes, the role of midwifery and psychiatric nursing specialty are to support and educate women, Cs. **(Kurtz and Ong et al., 2007).**

Operational Definitions

The Benson relaxation method (BRM) is a non-pharmacological, behavioral method devised to cope with anxiety. Among relaxation methods, BRM is among the easiest to learn and apply to a given patient. A typical session for BRM covers the following steps: sitting in a comfortable position, closing the eyes, deeply relaxing all the muscles, beginning at the feet and progressing up to the face, breathing through nose while becoming aware of one's own breathing, continuing this practice for 20 minutes, and finally sitting quietly for several minutes, at first with closed eyes and later with eyes open **(Fatemeh and Vahid et al., 2019).** Those are reducing pain, relaxation, relieving stress and anxiety, and improving sleeping in women after cesarean section

Significance of the Study

The most common women complain post-operative Cs were pain, stress, anxiety, and sleeping disorders. A recent study reported that moderate to severe postoperative pain had been experienced by over eighty percent of patients undergoing surgeries. Nearly all over the world, pain physiological response is considered to be negative, and undiminished causes a fatal unstable hemodynamic state, immune system function alteration, increased blood glucose level, and increased catecholamine, cortisol and anti-diuretic hormones excretion **(Yilmaz and Kapucu, 2017).** Furthermore, uncontrolled pain had a task in different psychosocial influences, together with depression, anxiety and sleep disturbances **(Yilmaz and Kapucu, 2017).**

Aim of the Study

The study aimed to assess the effect of Benson Relaxation Technique on Pain intensity, anxiety level and Sleep quality among Post Caesarean women.

Specific objective:

1.To assess the effect of Benson Relaxation Technique on Pain intensity among Post Caesarean women.

2.To assess the effect of Benson Relaxation Technique on anxiety level among Post Caesarean women.

3.To assess the effect of Benson Relaxation Technique on Sleep quality among Post Caesarean women.

Hypotheses:

1- There would be a significant reduction in severity of pain after Benson's relaxation technique

2- There would be a significant reduction in the level of anxiety after Benson's relaxation technique

3- There would be a significant improving quality of sleeping after Benson's relaxation technique

Subjects and methods

Study design:

A Quasi-study (pre-post) research design was used in the study.

Study setting:

This study was carried out in the obstetric and gynecological department at Ismailia University Hospital.

Study Sample:

Convenience sample included all parturient women (160) who undergoing Cs and attending the obstetric and gynecologic departments. The sample consisted of two groups Control group (A) consisted of 80 women who were receiving standard hospital routine care and study group (B) consisted of 80 women who were receiving Benson relaxation technique. The study sought was done two hours after the operation and after the effects of anesthesia were lost and conscious.

Tools of data collection: Each women post cesarean section was evaluated through five tools:

Tool I: An interview questionnaire: It was designed by the researcher after reviewing related literature. It was written in an Arabic language in the form of close and open-ended questions. It encompassed two parts: **First part**: Included personal demographic data such as (age, grade, and residence., and **Second part**: Included data related to reproductive profile as parity, number of abortion, mode of previous delivery and complications accompanied with pervious pregnancy.

Tool II: The visual analogue scale (VAS) devolved by **Melzack and Torgerson (1987),** to assess severity of pain. It is simple to use but it requires that the woman be able to conceptualize pain in this assessment tool. For ease of measurement a 10 cm line usually used, consisting of three mains parts: The first part graded from 1-3 cm which reflected mild pain, the second part graded from 4-7 cm for moderate pain and the third part graded from 8-10cm for severe pain. Scoring system: the score zero (0) indicated no pain and the top score (10) indicated the worst possible pain. These scores were recorded every 20 minute for both groups.

Tool III: The Pain Rating Index (PRI) developed by **Melzack (1987),** to assess sensory and affective descriptors of pain. It composed of 15 items that described both sensory (11 items) and affective sensations (4 items) associated with pain. Each item rated as (none =0), (mild=1), (moderate =2) and (sever =3). The total score for the 15 items ranged from 0 to 45. The women considered to have: No pain if her total score ranged from 0 to 11, Mild pain if total score ranged from 12 to 23, Moderate pain if total score ranged from 24 to 35, severe pain if total score ranged from 36 to 45.

Reliability For the internal consistency reliability a Cronbach's alpha of r>0.75. it was found to be 0.85 with strong test re-test agreement.

Tool V: Hospital Anxiety Scale (HAS) It was introduced by **(Zigmond and Snaith, 1983)**, to assess the levels of anxiety among post Cs woman it's a fourteen- item scale with two subscales for detecting clinically significant anxiety (HADS- A). It consisted of seven questions related to anxiety and marked "A", and 7 questions. Patients asked to choose one response from the four given for each item. Scores ranged from zero to three and the total score was twenty one divided into four ranges. Score as Normal: zero – seven, mild: eight – ten, moderate: eleven – fifteen and severe: sixteen– twenty one.

The reliability of the inventory was calculated to be 0.9451 using Cronbach's alpha. It was considered significant at two levels (0.05 and 0.01).

Tool IV: Groningen Sleep Quality Scale (GSQS): It was developed by **(Mulder and Wijnberg et al., 1981),** to assess client's previous night's sleep quality. It composed of fifteen statements about the previous night's sleep, answered with true or false. The sum of this scale expressed a generalized score of the previous night's sleep quality. A higher score in the GSQS meant a more disturbance of sleep. Scoring system: The first question isn't counted among the total score. One mark was given if the answer was "True" for questions (2, 3, 4, 5, 6, 7, 9, 11, 13, 14, 15) and One mark was given if the answer was "False" for questions (8, 10, 12) Groningen Sleep Quality Scale total scores were summed that ranged from zero to fourteen. Maximum higher score of fourteen points indicated poor sleep the night before. The quality of sleep was ranged as follow: Good sleep: zero – five, fair sleep: six – eight and poor sleep: nine – fourteen. The reliability of the questionnaire that a Cronbach's alpha of 0.90 was calculated with high test re-test.

Tool Validity: Tools was submitted to a penal of three medical and nursing experts in the filled of obstetrics and gynecology professor of obstetrics and gynecological nursing faculty of nursing Zigzag university, associative professor of psychiatric mental health nursing faculty of nursing Port Said university and professor obstetrics and gynecological faculty of medicine Suez canal university to test the content validity, modification was carried out according to the penal judgment on clarity of sentences and the appropriateness of content. The reliability of the study tools was assessed in a pilot study by measuring their internal Consistency using Cronbach's alpha method. This turned to be (α =0.85) to study tool.

Methods:

An official permission was obtained from the director of Ismailia University Hospital to conduct the study. Then, the researcher translated the tools and tests the content validity of the tools.

Ethical consideration:

Oral consent was obtained from all post Cs women they informed that participation in this study was voluntary. The investigator explained to all women in the study aim of the study, benefits, and complications.

Pilot study:

A pilot study was conducted of 10 % of the study subjects include eight post Cs women in study and eight post Cs women in control group to clarify the feasibility, applicability, clarity or objectivity of the data collection tools and then modification was done as well to estimate the time needed for data collection.

Assess Pain intensity, anxiety level and Sleep quality women post cesarean to be included in the study. Benson Relaxation Technique for women post cesarean beginning by two sessions per day and lasts for four weeks.

Field of work

Assessment and planning Phase:

Assess Post Cs women included personal demographic data, visual analogue scale (VAS), Pain Rating Index (PRI), Hospital Anxiety Scale, and Sleep Quality Scale and assigned Benson Relaxation Technique for women post Cs beginning by. Two sessions per day lasts for four weeks. Each session lasted for 20 minutes and consisted of the following; beginning with a few minutes of relaxed breathing, performed in sitting positions, mothers were instructed to take diaphragmatic breathing.

♣ Methods of teaching have been used in each session includes demonstration and role-play. Media that has been used in each session includes pamphlet, demonstration, video, and Pictures.

Program Implementation:

Session 1: Orientation and building trustful relationship

Session 2: Initially, an educational pamphlet was given to Post Cs women and watching video about steps to perform Benson relaxation technique for the study group. Post Cs women of this group were trained in session on how to properly perform the Benson relaxation technique, and their questions were answered an individual training session was held for each Post Cs women, in a suitable atmosphere away from noise. During the training sessions, Post Cs women were in very comfortable positions, and music was played to cover the noise that came from outside. The relaxation technique was started while Post Cs women in a supine or sitting position. The Benson relaxation technique for each Post Cs women individually was carried out for 20 minutes. Post Cs women must (1) be in a relaxed sitting position, (2) close his eyes, (3) relax all his muscles beginning at his feet and progressing up to his face followed by relaxing all body parts, (4) inhale through his nose, (5) listen to his breathing sound, (6) say the word “one” silently to himself while exhaling, and continue for 20 minutes. Music was played back for 20 minutes. When the music finished, the eyes remained closed for a few minutes, and then they were opened. Post Cs women sat there for a few minutes and then slowly rose. At the end of the training session, Post Cs women were given a daily schedule to record their training. It was emphasized that the relaxation training should be done regularly twice per day for four weeks, and the interval between each relaxation training should be 4 to 6 hours.

Evaluation of the Benson relaxation program for the mothers used two times one before
the program by using personal and socio demographic data, visual analogue scale (VAS), Pain Rating Index (PRI), Hospital Anxiety Scale, and Groningen Sleep Quality Scale and the next time immediately after applied program.

Statistical method:

After completing the fieldwork, data were processed, extensively reviewed. Each answer sheet was coded and scored, So that data could be prepared for computer use. Data were statistically analyzed using SPSS Version 20 statistical software packages. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and cross-tabulation variables. Test of significance used in table (chi square and t test). it was used in significance if p value 70.05 and significant if P value < 0.05.

Results

Table1. Reveals that 46.3%of the study group and 62.5% of the control group aged 30 to 35 years with Mean ±SDage 25.3900±3.29338 and 24.6200±3.75992 for study and control group respectively. While nearly an equal percent (37.5 % and 46.3%) of both groups had secondary education or its equivalent. The largest proportion of study (56.3,) and control (62.5%) group were housewives respectively. In addition, 62.5% and 61.3% of study and control group respectively were rural area residence. The mean numbers of antenatal visits are 5.200±1.340 among study group and 5.275±1.617 among control group. No statistically significant differences were found between both groups in relation to their

personal characteristics and number of antenatal visits.

According to table (2) it is clear that, Visual analogue pain scale mean score, it was observed that before the intervention, among the study group was higher than that of the control group (9.050±1.377 and 8.475±1.695 respectively), there was no statistically significant difference between the both group, where (P=0.100). After intervention, the VAS mean score among the study group was lower than that of the control group (1.825±1.318 and 7.825±2.352 respectively), there was highly statistically significant difference was found between the both group, where (P=0.000). The difference between the means of the VAS scoring system among the study group before and after the intervention was statistically significant (P=0.000). Whereas the same difference among the control group was not statistically significant (P=0.088).In relation to mean PPI, the table shows that before the intervention the PPI mean score among the study group was 4.400±0.744 compared to 4.050±0.876 among the control group, there was no statistically significant difference between the both group, where (P=0.058). The difference between the means of the PPI scoring system among the study group before and after the intervention was statistically significant (P=0.000). Whereas the same difference among the control group was not statistically significant (P=0.996).

In relation to PPI, the table (3) shows that 48.75% of the study group had provenience discomforting pain before the intervention, while 1.25% of them had such pain intensity after the intervention. This compared with 55.0% and16.25% of the control group who had experience such discomforting pain before and after intervention, respectively. Also excruciating pain 11.25% in study group before intervention while 0.00% after intervention compared to 13.75 % and2.5% of excruciating pain in control group before and after intervention respectively. The difference between the severity of pain according to the PPI scoring system among the study group before and after the intervention was statistically significant (P=0.001) compared to control group.

Concerning the Pain Rating Index (PRI) table 4 shows that, 70.0%of the study group had severe pain before the intervention while 2.5% of them had such pain intensity after the intervention. This compared with 77.5% and 6.25 % of the control group who had experience such a severe pain before and after the intervention, respectively. The difference between the severity of pain according to the PRI scoring system among the study group before and after the intervention was statistically significant (P=0.000). Whereas the same difference among the control group statistically significant (P=0. 001). The difference between the two groups after the intervention, in this respect was statistically significant (P=0.001).

Regarding to the table 5, the majority ((86.25 % & 78.75 %) of study and control groups respectively had poor quality of sleep before intervention with no statistically significant difference between them where (P=0.346). After the intervention, about (92.5%) of the study group had good quality of sleep compared to 3.75% of the control group. And 1.25% of study group had poor quality of sleep compared to 72.5% of control group, the relationship between both groups was statistically highly significant where, (P= 0.000). The difference between the quality of sleep scoring system among the study group before and after the intervention was statistically significant (P=0.000). Whereas the same difference among the control group was not statistically significant (P=0.167).

Table 6 illustrated that there was a statistically significant effect of Benson's relaxation technique when applied among post cesarean section women on reducing level of anxiety of the study group at p value (<0.001*). Also the same table clarify that the clear majority (66.3% &53.8%) of the study and control groups had normal hospital anxiety before the intervention with statistically significant difference between them, where (P =0.003*). The difference between the hospital anxiety scale (HAS) scoring system among the

study group before and after the intervention was statistically significant (P=0.001). Whereas the same

Table 7. Illustrates that total anxiety level mean score in study group was 8.375±4.453 and the Mean score in control group was 37.800±8.815. The t value was 18.844 which significant at P< 0.001 level thus it becomes evident that the Benson's relaxation therapy was found to be effective in reducing the level of anxiety in study group.

Table 8 Reveals that total of pain intensity mean score was significantly reduced among study group after using Benson's relaxation technique than control group. it was 4.73+0.81 study group and 6.13 ±2.16 for control group. Also the table shows the t value was 3.646*which was significant at p<0.001 level.

Table 9 represents relationship between level of pain intensity, level of anxiety and quality of sleep among study and control grouped after intervention there were statistical significant differences was found as regard quality of sleep (0.032) and level of pain intensity (P_value 0.032).

Table (1): Frequency and percentage distribution of general characteristics' of the studied subjects (No. 80) .

Personnel characteristics	study group (No. 80)		Control group (No. 80)		Chi square Test	P value
	No	%	No	%		
Age in years						
20-<25	23	28.8%	10	12.5%		
25-<30	20	25.0%	20	25.0%	3.45	>0.05
30-35	37	46.3%	50	62.5%		
Mean ±SD	25.3900±3.29338		24.6200±3.75992			
Residence						
Rural	50	62.5%	49	61.3%	3.06	>0.05
Urban	30	37.5%	31	37.8%		
Educational qualification						
Illiterate	5	6.3%	3	3.8%		
Read and write	10	12.5%	9	11..3%	5.09	>0.05
Secondary	30	37.5 %	37	46.3%		
University	35	43.8%	31	38. 8 %		
Occupation						
Yes	35	43.8%	30	37.5%	0.070	>0.05
No	45	56.3%	50	62.5%		
Number of antenatal visits: Mean ±SD	5.200±1.340		5.275±1.617		0.825	>0.05

Table (2): Comparison between the studied groups according to pain mean scores before and after the intervention (No.80).

Mean total score of pain	Study Group (No. 80) Mean + SD	Control Group (No. 80) Mean + SD	T test (P)
- Mean Visual analogue pain scale:			
• Before intervention	9.050±1.377	8.475±1.695	1.666 (0.100)
• After intervention	1.825±1.318	7.825±2.352	14.073 (0.000) *
T test (P)	34.67 (0.000) *	1.748 (0.088)	
- Mean Present Pain Intensity (PPI			
• Before intervention	4.400±0.744	4.050±0.876	1.926 (0.058)
• After intervention	1.000±0.679	3.500±1.240	11.180(0.000) *
T test	31.67 (0.000) *	2.805 (0.996)	

T-test & P for T-test*: Significant at P ≤0.01

Table (3): Comparison between the studied groups according to Present Pain Intensity before and after the intervention to each group (No.80).

Present Pain Intensity (PPI):	Study group (No.80)		Control group (No. 80)		FET/χ 2 (P)	
	Before NO%	After NO%	Before NO%	After NO%	Before	After
• No pain=0	0(0.00)	69(86.25)	0(0.00)	26(32.5)		
• Mild pain=1	0(0.00)	10(12.5)	0(0.00)	30(37.5)		
• Moderate pain=2	60 (75.0)	1(1.25)	56 (70.0)	21(26.25)	3.835 (0.573)	38.563 (0.000) *
• Sever pain =4	20 (25.0)	0 (0.00)	24(30.0)	3(3.75)		
Mean + SD	17.54± 8.68	9.89± 9.37	29.18±12.03	15.85±11.23		

*: Significant at P ≤0.01

Table (4): Comparison between the studied groups according to Pain Rating Index (PRI) before and after the intervention (No.80).

- Pain Rating Index (PRI)	Study group(N=80)		Control group(N=80)		FET/χ 2 (P)	
	Before NO%	After NO%	Before NO%	After NO%	Before	After
• No pain (0 to 11)	0(0.0)	55(68.75)	0(0.0)	33(41.25)		
• Mild pain (12 to 23)	3(3.75)	17(21.25)	4(5.0)	2430.0()	1.867	35.937
• Moderate pain (24 to 35)	21(26.25)	6(7. 5)	14(17.5)	18(22.0)	(0.600)	(0.000) *
• Sever pain (36 to 45)	56(70.0)	2(2.5)	62(77.5)	5(6.25)		
FET/χ 2 (P)	17.607* (p<0.001*)		45.263* (p<0.001*)			

χ 2 (P): Chi-Square Test &P for χ 2TestFET (P): Fisher Exact Test & P for FET-Test *: Significant at P ≤0.01

Table (5): Comparison between the studied groups according to their total Quality of Sleep before and after the intervention (No. 80).

Total Score of Quality of Sleep	♀Study Group		Control Group		T FET/χ 2 (P)	
	Before intervention NO%	After intervention NO%	Before intervention NO%	After intervention NO%	Before	After
• Good quality of sleep (0-5)	1(1.25)	71 (92.5)	0(0.00)	3(3.75)		
• Fair quality of sleep (6-8)	10(12.5)	8(10.0)	17(21.25)	19(23.75)	0.346 (0.841)	39.936 (0.000) *
• Poor quality of sleep (9-14)	69 (86.25)	1(1.25)	63(78.75)	58(72.5)		
FET/χ 2 (P)	49.829 (0.000) *		6.581 (0.167)			

χ 2 (P): Chi-Square Test & P for χ 2TestFET (P): Fisher Exact Test & P for FET-Test *: Significant at P ≤0.01

Table (6): Comparison between the studied groups according to level of anxiety before and after the intervention (No.80).

Hospital Anxiety Scale (HAS)	Study Group		Control Group		FET/χ 2 (P)	
	Before intervention NO%	After intervention NO%	Before intervention NO%	After intervention NO%	Before	After
• Normal (zero- seven)	53(66.3)	70(87.5)	43(53.8)	47(58.8)	13.562* (0.003*)	21.124* (<0.001*)
• Mild (eight- ten)	23(28.8)	10(12.5)	17(21.3)	21 (26.3)		
• Moderate (eleven- fifteen)	4(5.0)	0 (0.0)	14(17.5)	10 (12.5)		
• Severe (sixteen- twenty one)	0 (0.0)	0 (0.0)	6(7.0)	2(2.5)		
FET/χ 2 (P)	34.872* (<0.001*)		19.144* (0.001*)			

χ2 (P): Chi-Square Test &P for χ2TestFET (P): Fisher Exact Test & P for FET-Test *: Significant at P ≤0.01

Table (7): Total level of anxiety mean score in study and control group among post caesarean women (No.80)

Groups	Mean ±SD	T test (P)
Study group	8.375±4.453	
Control group	37.800±8.815	18.844 (0.000) *

*Significant at p< 0.05

Table (8): Total level of pain intensity mean score in study and control group among post caesarean women (No.80)

Groups	Mean ±SD	T test (P)
Study group	4.73 ± 0.81	t=3.646* (p<0.001*)
Control group	6.13 ±2.16	

*Significant at p<0.001

Table (9) the Correlation between level of pain intensity, level of anxiety and quality of sleep after intervention among studied groups (N0. 80).

Variable	Study Group	Control Group	R- value P –value
Intensity of pain	4.73 ± 0.81	6.13 ±2.16	0.240* 0.032*
Level of anxiety	8.375±4.453	37.800±8.815	0.17 0.113
Quality of sleep	49.829 (0.000) *	6.581 (0.167)	0.268 0.016*

R: Pearson coefficient*: Statistically significant at p ≤ 0.05

Discussion

The rate of CS is incredibly increased worldwide. This surge in the rate of CS necessity the finding of effective and safe measures that can help the women to reassume their ordinary life rapidly. This can be achieved by relieving post Cs pain and consequently improving activity level and sleeping. So, Pain sensation can be reduced by pain management. Pharmacological and non-pharmacological treatments can be used. The Benson Relaxation Technique is a non-pharmacological way suitable to reduce pain, but there are limited studies on its post Cs use.

The present study represented that Benson's Relaxation Technique was significantly decreased pain severity among study group after intervention compared to control group. The result of the present study is in line with at least six studies. First, **Devmurari and Nagrale (2018)** they studied "Effectiveness of Jacobson's progressive muscle relaxation technique for pain management in post-cesarean women". They found that 100% of study group after intervention had pain ranging from 0 to 5 compared to 17.6% of control group. There was significant difference in mean values between pain scores of control and study group on VAS score.

Additionally, the current study found that Benson relaxation techniques had the greatest influence to decrease pain intensity. Benson relaxation technique is a simple and inexpensive technique **Kurtz S, Ong et al., (2007)** and nurses can use it to manage pain. Thus, **Elbohoty et al., (2015)** they point that the maternity nursing services, to use the technique of Benson relaxation as one of the standard operating skills as non-pharmacological pain management in maternal post caesarean section. Besides, Benson relaxation training can be used as training material for nurses in the maternity room. This study had some limitations. One was its small sample size. By increasing the sample size, the possibility of a markedly deviant sample diminishes. The large samples lead to removing atypical values.

In the present result the Benson relaxation technique refers to a state of deep relaxation with concentration on the sense of relaxation by repeating a key word convey the sense of relaxation. This technique is also accompanied with deep breathing exercises. Similar data were confirmed by **Peciuliene and Perminas al., (2015)** they studied "the use of progressive muscle relaxation technique for pain relief in gynecology and obstetrics". Their subjects were patients with abdominal surgery for obstetrics or gynecologic reason. They concluded that progressive muscle relaxation significantly decreased pain perception among study group compared to control group. They further recommended that health care team should prepare their patients to apply Benson relaxation technique during the preoperative period to be used as a pain control method during the post-operative period.

The present study, the study and control groups had normal hospital anxiety before the intervention with statistically significant difference between them. After intervention, the moderate anxiety limitation significantly absent among the entire study group, compared to the control group. This result is supported with **Windartik and Yuniarti et al., (2017)** they conducted a study about "effect of progressive muscle relaxation on stress and disability in subjects with chronic low back pain". They concluded that progressive muscle relaxation significantly reduced disability behaviors and functions related to pain. In addition, **Barabady et al., (2020)** studied "pre-operative and post-operative effect of pain management program prior to post Cs women". They elaborated inside their article that the pain management program mainly depending on systemic regular tonic and relaxation of muscle groups. They elaborated that study group activity score was significantly higher than control grouped. On the other hand, there was a reduction on level of anxiety among the study group with a statistically significant effect of Benson's relaxation technique when applied among post Cs women. Pain level is the most common factor that can affect the sleep quality level for mother undergoing cesarean section.

Conclusion

Based on the result of the present study, it can be concluded that the Benson relaxation technique had a highly statistically significant positive effect on reducing intensity level of pain, level of anxiety and improving quality of sleep among post Cs women in study group than the control group.

Recommendations

Based on the findings of the current study, the following recommendations can be suggested:

Benson relaxation technique is a practice that is inexpensive, effective, and easy to apply during the hospitalization period. Therefore, the nursing team should involve such practices in nursing management for women after Cs. The curriculum of basic nursing education as well as continuing education should entail the Benson relaxation technique for management of women pain and improve their quality of sleeping after Cs.

- Future researches:

a- Replication of the study using a large sample size from a broad geographical area to allow greater generalization of the results.

b- Exploration of the effect of Benson relaxation technique on stress, fatigue, and quality of life during postpartum

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