护理杂志
Journal of Nursing
Volume 70 Number 7
ISSN: 0047-262X
DOI: 10.17605/OSF.IO/869AU

Effect of Back Massage and Affirmation Relaxation on psychological status of caesarean section mothers - a Pilot Study

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Abstract

The postpartum psychological status and quality of life of mothers after caesarean section is poor while comparing to mothers following vaginal delivery. The aim of the study was to assess the effect of combination of back massage and affirmation relaxation on psychological status of caesarean section mothers. ***Materials and Methods:*** *This was a quantitative research study with pre test post test control group design. 24 samples were selected by non-probability purposive sampling technique at Fatima Hospital, Mau, and U.P. Data were collected using tool on socio personal, obstetric and newborn data and DASS 21 questionnaire. Data collection was done on 3rd and 6th post-operative days. Back massage and affirmation relaxation was given 4 times a day for 10 minutes each on 4th, 5th and 6th post-operative days. Data was analyzed using descriptive and inferential statistics.* ***Results:*** *Baseline characteristics and pre intervention mean maternal depression score 8±2.09 vs 8.50±2.28, p=0.030, anxiety score 11.67±3.06 vs 11.50±2.97, p=0.932 and stress score 10.33±3.17 vs 11.00±2.63, p=0.590 were comparable in both groups. There was a significant reduction observed in maternal stress score (6±2.83 vs 8.67±2.31, p=0.033) and anxiety score (6.50±3.53 vs 9.17±1.99, p=0.052). The depression score was not statistically significant. It may be due to the small sample size.* ***Conclusion:*** *The combination of back massage affirmation relaxation technique may be an effective intervention to improve the psychological well-being of caesarean section mothers.*

Keywords: *Back massage, Affirmation Relaxation, Psychological status, caesarean section*

INTRODUCTION

Pregnancy and related events are very significant in the life of a woman, were life is going through tremendous changes, physiologically, biologically, physically, emotionally and psychologically. The birth of a baby naturally brings joy to the mother and her family. But for few, pregnancy and childbirth are stressful due to various factors and can alter their psychological and emotional wellbeing[1]

Approximately 10-30% women experience postpartum depression worldwide[2]. A meta-analysis of 38 Indian studies reported that about 22% Indian mothers suffer from post partum depression. The findings further explains that in southern region, the pooled prevalence was 26%, eastern region 23%, south western region 23% and western region 21% mothers experience post-partum depression. The lowest prevalence was in northern region (15%) [3]

Postpartum depression may give rise to emotional problems, behavior problems, psychiatric problems, and hyperactivity in children born to such mothers. Women commonly experience stress, sadness, loneliness or tiredness after childbirth[4].

Postpartum depression can affect any women and most commonly, young age during pregnancy, high risk pregnancies and primipara mothers[5].

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Caesarean section is the one of the most common surgeries around the world. However, it may cause mental and physical complications in the mother. Physical complications associated with caesarean section include intra and post-operative bleeding, infections, intra-abdominal adhesions, deep vein thrombosis and pulmonary embolism, hysterectomy due to uncontrollable bleeding, brain hazards, increased risk of wound dehiscence, maternal death etc[6].

Anxiety and stress are also considered psychological complications affecting mothers undergoing caesarean section[7].

Stress is a response one experiences at the physiological, mental and emotional levels to the day to day demands of life and anxiety is one of its side effects. The experience and understanding of stress by an individual depends on their preconceived perceptions, existing coping mechanism and their interactions with their environment rather than the cause of stress itself[8]. Coping strategies will be different from person to person. Stress bearing capacity also will differ.

Anxiety is a very unpleasant sensation and appears in the form of severe fear or distress or suspicion of an unknown factor[7]. Stress and anxiety caused by surgery stimulates the sympathetic, parasympathetic, and endocrine systems and cause symptoms such as high BP, palpitations, shortness of breath, tremors, palm sweating and flare ups, decreased saliva, dry mouth, increased gastric and intestinal motility and urinary incontinence[9]

Stress affects both pregnant women and her fetus. Maternal stress reduces blood supply to the placenta and fetus through epinephrine secretion and uterine contractility[10]. Stress inhibits oxytocin release and may increase postpartum haemorrhage[11].

There are many factors that aggravate caesarean mothers' emotional instability during postpartum period. Hormonal changes, existing psychological problems, incision pain, unwanted or risky pregnancy, difficult birth process, conflicts in the family, lack of social support, not being able to get support from health team, a stressful life style, obstetrical complications such as diabetes mellitus, pre - eclampsia, low birth weight babies, low socio economic status, anxiety and depression during pregnancy, the stress created by baby care and breastfeeding can all be recognized as predisposing factors[12]. Postpartum stress give rise to poor health outcomes and advancement of psychological problems. The factors affecting stress levels during this period include any form of pre-existing stress, mental health status at the baseline, history of psychiatric illness in mother, lack of support from husband, birth of a female baby, sick baby or death of a baby, substance abuse by husband, high parity and low maternal education are some other associated risk factors[3].

The psychological distress if not recognized and treated can have adverse long term effects in the life of mother, child and family and can cause to emotional, behavioural and cognitive problems to the child[12]

Stress bearing capacity differs from person to person. Studies revealed that there was rise in postpartum stress during covid 19 pandemic and there was occurrence of postpartum depression symptoms, anxiety, and perceived stress. In North America, an alarming pervasiveness of 34.8% of high level of anxiety and 43.3% prevalence of high level of stress has been observed. So, it is vital to know the origin of postpartum maternal stress at the earliest and alleviate it on time to reduce the incidence of postpartum depression[8].

(Surya Though there are multiple studies conducted to assess the prevalence of depression, anxiety, and stress among postnatal mothers, only few interventional studies are conducted to reduce the psychological distress of caesarean section mothers. So, the researcher considered combination of

护理杂志
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back massage and affirmation relaxation to reduce the psychological distress of postpartum mothers concentrating on caesarean section mothers.

When massage is applied, the nerves and sensory receptors are stimulated and messages are sent along the nerve pathways via spinal cord to the brain. Massage calms down sympathetic nervous system and trigger Parasympathetic nervous system. When the body is massaged, blood and lymph circulation is increased throughout the body and the neurotransmitters serotonin and endorphins are secreted, which helps to promote positive feelings of happiness and pleasure while reducing anxiety and depression[13, 14]. The parasympathetic nervous system slows down body activity, lowers B.P and decreases the amount of sweat. It promotes production of hormones oxytocin and prolactin which leads to improved breast milk production. Thus massage helps to reduce anxiety and depression by decreasing stress during post-partum[15, 16]. Massage relaxes the body and mothers get better sleep too. Breastfeeding being a pleasant experience, relaxation will be felt by the mother.

Affirmation relaxation technique is a combination of deep breathing and repetition of simple positive, affirmative sentences based on Benson's theory of relaxation response [17, 18] and theory of self-affirmation, [19, 20, 21, 22]. This technique can adequately shift our focus from negative emotions or stressors to positive energy, confidence and instill hope for the future. This will reduce the stress and anxiety of the mothers by improving their self-confidence[23, 24, 25].

Aim: The aim of the study is to assess the impact of back massage and affirmation relaxation on psychological status of caesarean section mothers.

Objective

1. To assess the effect of combination of back massage and affirmation relaxation on psychological status of caesarean section mothers.

Hypotheses

All hypotheses will be tested at 0.05 level of significance.

H1-There will be a statistically significant improvement in psychological status among the experimental group caesarean section mothers after back massage and affirmation relaxation technique.

H2– There will be a statistically significant improvement in psychological status of caesarean section mothers in experimental group than control group after back massage and affirmation relaxation technique.

MATERIALS AND METHODS

Research Approach

Quantitative approach

Research Design

Non randomized pre-test post-test control group design

Setting of the study

The present study was conducted in obstetrical and Gynaecological wards of Fatima Hospital, Mau, U.P.

护理杂志
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Population

All postnatal mothers undergone caesarean section with a full-term normal baby

Sampling Technique

24 caesarean mothers were selected through non-probability sampling, purposive sampling technique.

Sample size

24 caesarean section mothers with full-term normal baby were selected for the study.

Inclusion Criteria

- Mothers who delivered normal term babies by lower segment caesarean section.
- Mothers with single baby
- Mothers between 48-72 hours of lower segment caesarean section
- New born with normal sucking, swallowing and rooting reflexes

Exclusion Criteria

- Mothers who are critically ill
- Mothers experiencing any complications of surgery or anaesthesia
- Mothers with nipple or breast anomalies
- Mothers with post-partum psychosis
- New-born with major congenital anomalies.

Variables under study

The variables selected for the study are as follows:

Independent Variable – Combination of back massage and Affirmation Relaxation

Dependent Variable – Psychological status – Depression, anxiety, and stress

Tools and technique

This tool consists of two sections

Section I – This section deals with structured questionnaire on socio personal, obstetrical, and newborn data.

Part A - Socio personal data

Part B – obstetrical and newborn data

Technique – Self report

Section II- Structured questionnaire to assess psychological status (DASS 21)

Technique – Self report

Data Collection Procedure

After obtaining approval from institutional ethical committee and permission from the Administrator of the institution and head of the department of Obstetrics and Paediatrics Department, orientation about the study and protocol were given to doctors and nursing staff working in the post-natal wards.

护理杂志
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The investigator met each mother, established rapport, and explained the purpose and protocol of the present study. Ensured confidentiality and obtained informed consent from all mothers who were willing to participate in the study. The study subjects were selected as per purposive sampling technique

Data collection was done from control group and from experimental group on 3rd (Pre-Test) and 6thpost operative day (Post-test). Socio personal, obstetrical, and new-born data were collected. Experimental Group mothers were given intervention, Back massage, and Affirmation relaxation. The steps of procedure were explained to the mother before doing it. First, the mother was asked to sit upright on a chair with a table in front and support the incision by holding a pillow. Take a few (5) normal breaths and then take a slow deep breathe in. Hold it for 2-5 seconds; gently and slowly breathe out through mouth. Repeat it for 5 times. Then she was asked to lean forward by keeping the head on a table and then after exposing the back, gentle pressure was given on the back using both thumbs on either side of the spine in circular motion between shoulder blades. While doing massage investigator asked the mother to repeat simple positive affirmative sentences silently like "I am calmer and more relaxed, milk production is smooth and plenty, my baby is healthy and I am a great mother, my baby is getting enough milk, I get enough support from my family; I get enough support from my hospital staff etc… Then the whole procedure was repeated. It was given continued for 10 minutes. Just after massage, fullness of breast was assessed and baby was put to breast for feeding. This procedure was done 4 times a day for 3 days. (7.00am, 11.00 am and 3.00p.m and 7.00pm. The psychological status of mother was assessed on 3rd day (baseline) and at 7.00pm on 6thpostoperative day. Mothers of control group were not be given any treatment except the routine health assessment and health education regarding the postnatal care, importance of breast feeding etc. Data was collected on 3rd and 6th post-operative days.

RESULTS

Section I: Part A - Description of Socio personal data.

Table 1: Frequency and percentage distribution of socio personal variable of mothers underwent lower segment caesarean section in the experimental and control group. n = 24 (12+12)

Socio personal Variables	Experimental Group		Control Group		Fisher Exact Test for homogeneity
	Frequency	Percentage	Frequency	Percentage	
Age in years					
18 – 25	7	58.3%	5	41.7%	p=0.684 (N.S)
26 – 30	5	41.7%	6	50.0%	
31 – 35	-	-	-	-	
36 – 40	0	0.0%	1	8.3%	
Type of family					
Nuclear family	5	41.7%	3	25.0%	p=0.667 (N.S)
Joint family	7	58.3%	9	75.0%	
Education					
Primary	1	8.3%	2	16.7%	p=0.856 (N.S)
Secondary	1	8.3%	1	8.3%	
Higher secondary	3	25.0%	4	33.3%	
Graduate and above	7	58.3%	5	41.7%	

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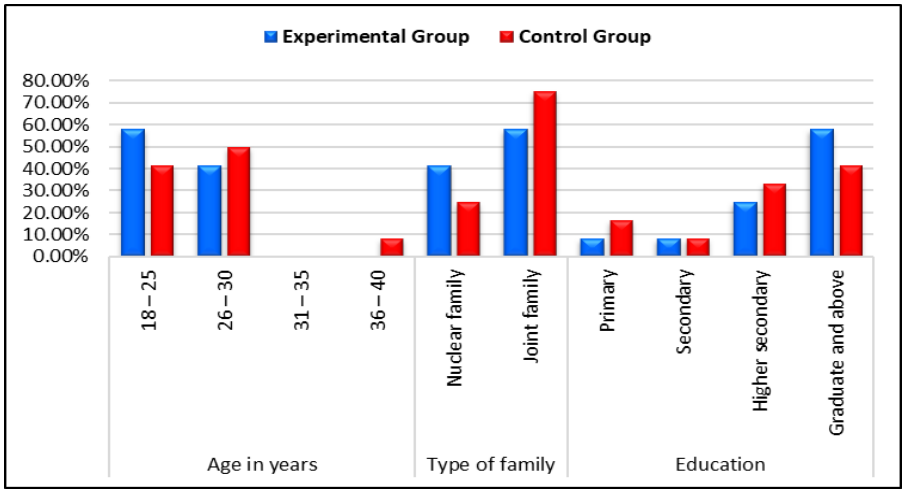
- In experimental group, 58.3% of caesarean section mothers were in the age group of 18-25years and 41.7% of mothers were in the age group of 26-30years, whereas in the control group, 50% of caesarean section mothers were in the age group of 18-25 years, 41.7% of mothers were in the age group of 26-30years and 8.3% mothers were in the age group of 36-40years.
- In the experimental group, 58.3% of caesarean section mothers belonged to joint family and 41.7% of mothers belong to nuclear family whereas in control group, 75% of caesarean section mothers belong to joint family and 25% of mothers belonged to nuclear family.
- In experimental group, 58.4% of caesarean section mothers had educational qualification of graduation and above, 25% of mothers had higher secondary education, 8.3% of mothers had secondary and 8.3% of mothers had primary education whereas in control group, 41.7% of mothers had graduation and above, 33.3% mothers had higher secondary education, 8.3% of mothers had secondary education and 16.7% of mothers had primary education.

Fisher Exact Test values were calculated for checking the homogeneity of the groups with respect to their socio personal variables. The p value for age (0.684, p>0.05), type of family (0.667, p>0.05) and education (0.856, p>0.05) show that the groups are homogenous in terms of age, type of family and education.



Part B- Description of obstetrical and new-born data

Table 2: Frequency and percentage distribution of newborn and obstetrical variables of mothers underwent lower segment caesarean section in the experimental and control group. n=24 (12+12)

Obstetric and Newborn Variables	Experimental Group		Control Group		Fisher Exact Test for homogeneity
	Frequency	Percentage	Frequency	Percentage	
Parity					
Primipara	5	41.7%	6	50.0%	1.000 (N.S)
Multi para	7	58.3%	6	50.0%	
Type of LSCS					
Elective	7	58.3%	4	33.3%	0.414 (N.S)
Emergency	5	41.7%	8	66.7%	
Gender					
Male	4	33.3%	6	50.0%	0.680 (N.S)
Female	8	66.7%	6	50.0%	

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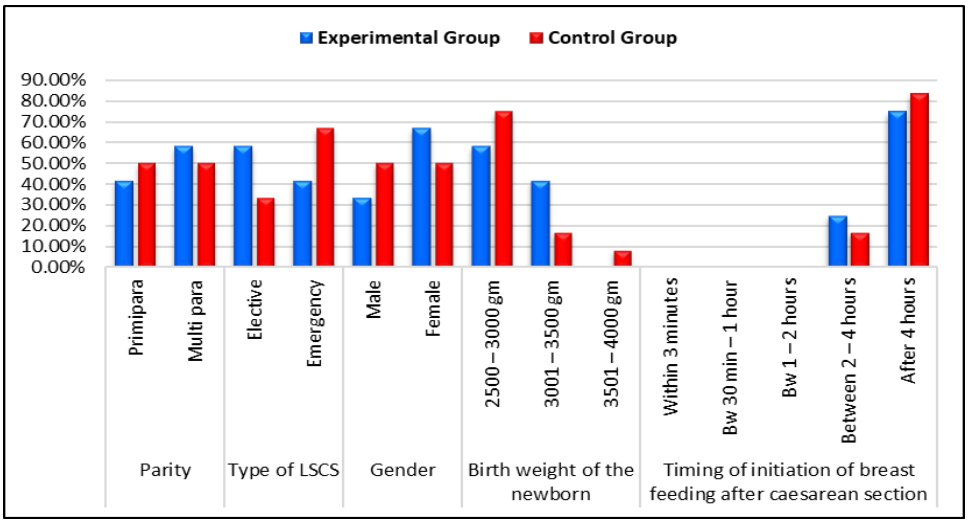
Birth weight of the newborn					
2500 gm – 3000 gm	7	58.3%	9	75.0%	0.371 (N.S)
3001 gm – 3500 gm	5	41.7%	2	16.7%	
3501 gm – 4000 gm	0	0.0%	1	8.3%	
Timing of initiation of breast feeding after caesarean section					
Within 3 minutes	-	-	-	-	1.000 (N.S)
Between 30 minutes – 1 hour	-	-	-	-	
Between 1 – 2 hours	-	-	-	-	
Between 2 – 4 hours	3	25.0%	2	16.7%	
After 4 hours	9	75.0%	10	83.3%	

- In experimental group, 58.3% of mothers were multipara and 41.7% of mothers were primipara. In control group, 50% of mothers were multipara and 50% of mothers were primipara.
- In experimental group, 58.3% of mothers undergone elective L.S.C.S and 41.7% mothers undergone emergency L.S.C.S. In control group, 66.7% of mothers undergone emergency LSCS and 33.3% mother undergone elective LSCS.
- In experimental group, 66.7% of new-borns were girls and 33.3% of new-borns were boys. In control group, 50% of new-borns were boys and 50% of new-borns were girls
- In experimental group, 75% of new-borns started their breast feeding after 4 hours and 25% of new-borns started breast feeding within 2-4 hours. In control group, 83.3% of new-borns started breast feeding after 4 hours and 16.7% of new-borns started breast feeding within 2-4 hours.
- In both experimental and control group, 100% babies were given formula feed before breast feeding.

Fisher Exact Test values were calculated for checking the homogeneity of the groups with respect to their obstetrical and new-born variables. The p value for parity (1.000, p>0.05), type of L.S.C.S (0.417, p>0.05) gender (0.680, p>0.05) , timing of initiation of breast feeding after caesarean section (1.000, p>0.05) show that the groups are homogenous in terms of parity, type of L.S.C.S, gender, timing of initiation of breast feeding after caesarean



Section II: Description of data on psychological status of caesarean section mothers

护理杂志
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Table 3: Frequency and percentage distribution of depression among mothers underwent lower segment caesarean section before and after intervention in the experimental and control group.
n=24 (12+12)

Depression	Experimental Group				Control Group			
	Before intervention		After intervention		Before intervention		After intervention	
	f	%	f	%	f	%	f	%
Normal (0 – 9)	8	66.67	11	91.67	8	66.67	10	83.33
Mild (10 – 13)	4	33.33	1	8.33	3	25.00	2	16.67
Moderate (14 – 20)	0	0.00	0	0.00	1	8.33	0	0.00
Severe (21 – 27)	-	-	-	-	-	-	-	-
Extremely Severe (28+)	-	-	-	-	-	-	-	-

- In both experimental and control group, before intervention, on day 0, 66.67% mothers were in normal and 33.3%in mild level of depression. On day 3, after intervention, in experimental group, 91.67% mothers were in normal level and 8.33% in mild level depression. In control group, 83.3% mothers were in normal level, 16.67% mild level of depression on day 3.

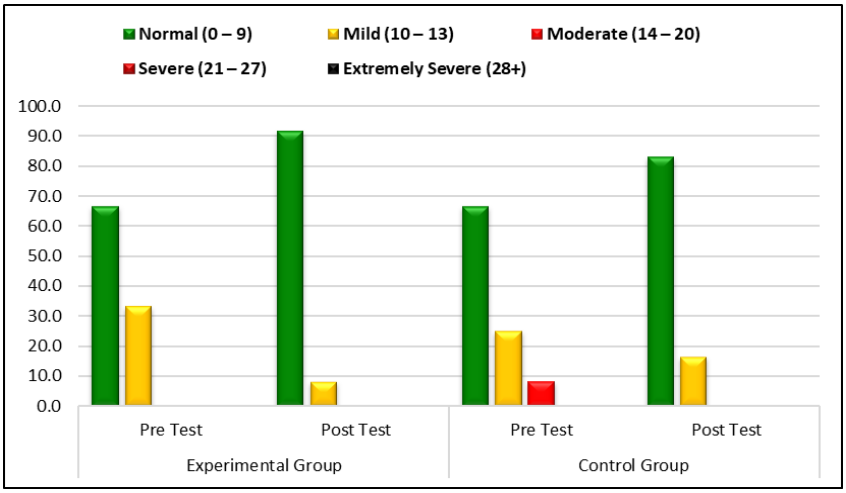

Table 4: Frequency and percentage distribution of anxiety of mothers underwent lower segment caesarean section before and after intervention in the experimental and control group
n=24 (12+12)

Anxiety	Experimental group				Control Group			
	Pre Test		Post Test		Pre Test		Post Test	
	f	%	f	%	f	%	f	%
Normal(0-7)	1	8.33	6	50.00	0	0.00	2	16.67
Mild (8-9)	2	16.67	3	25.00	4	33.33	3	25.00
Moderate (10-14)	8	66.67	3	25.00	7	58.33	7	58.33
Severe (15-19)	1	8.33	0	0.00	1	8.33	0	0.00
Extremely Severe(20+)	-	-	-	-	-	-	-	-

- In the experimental group, before intervention, on day 0, 8.33% mothers were with normal level of anxiety, 16.7% mild, 66.66%moderate and 8.33% with severe anxiety. In control group on day 0, before intervention, 33.33% mothers were with mild, 58.3%with moderate and 8.33%

护理杂志
Journal of Nursing
Volume 70 Number 7
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with severe anxiety. On day 3, after intervention, in experimental group, 50% were with normal anxiety, 25% mild and moderate anxiety. In control group, on day 3, 16.66% mothers were with normal anxiety, 25% mild and 58.33% with moderate anxiety.

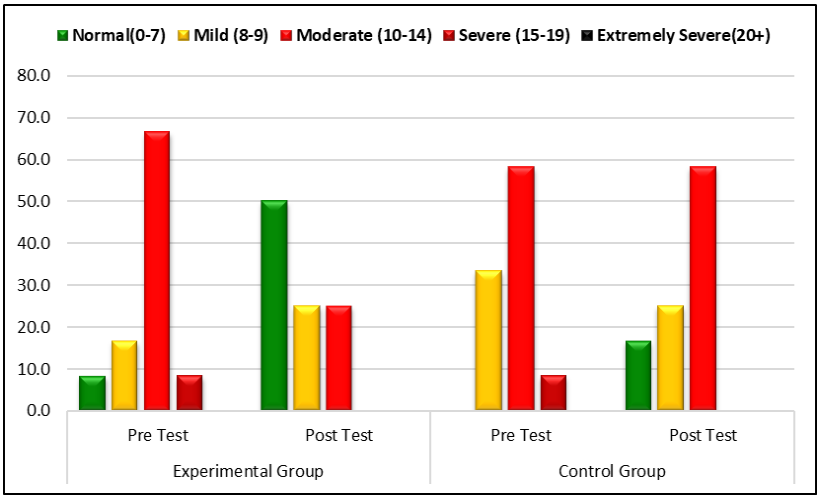

Table 5: Frequency and percentage distribution of Stress of mothers underwent lower segment caesarean section before and after intervention in the experimental and control group.
n=24 (12+12)

Stress	Experimental Group				Control Group			
	Pre Test		Post Test		Pre Test		Post Test	
	F	%	f	%	f	%	f	%
Normal (0-14)	11	91.67	12	100.00	11	91.67	12	100.00
Mild (15-18)	1	8.33	0	0.00	1	8.33	0	0.00
Moderate (19-25)	0	0.00	0	0.00	0	0.00	0	0.00
Severe (26-33)	-	-	-	-	-			
Extremely Severe (34+)	-	-	-	-	-	-		

- In both experimental and control group, before intervention on day 0, 91.66% mothers had normal level of stress and 8.3% had mild level of stress. On day 3, in experimental and control group, all (100%) mothers had normal level of stress.
- In experimental group, the mean depression score was reduced from 8.00±2.09 to 6.50±1.93 and in control group, the mean depression score was reduced from 8.5±2.28 to 7.0±2.49.
- In experimental group, the mean anxiety score was reduced from 11.67±3.06 to 6.50±3.53 and in control group, the mean anxiety score was reduced from 11.50±2.97 to9.17±1.99.
- In experimental group, the mean stress score was reduced from 10.33±3.17 to 6.00±2.83 and in control group, the mean stress score was reduced from 11.00 ±2.63 to 8.67±2.31

护理杂志
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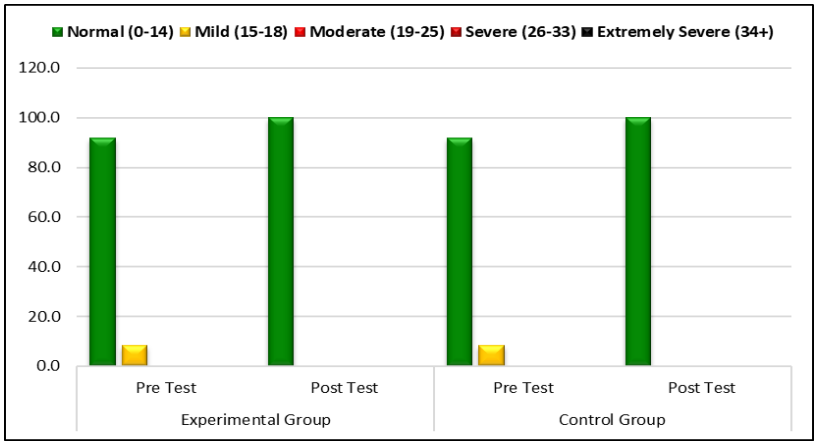
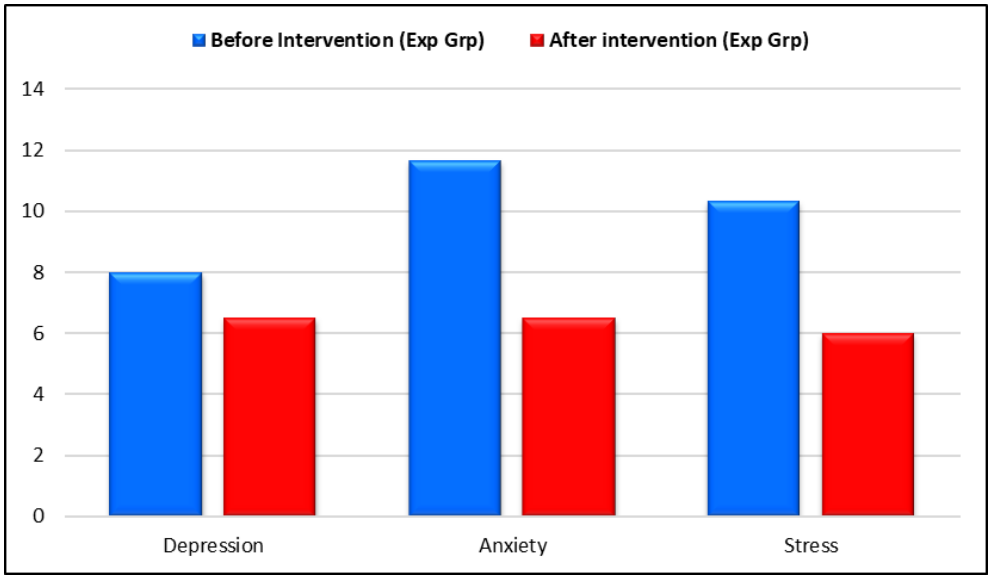


Table 6: Comparison of means in psychological status of mothers in experimental group after intervention
n=12

Variables	Before Intervention		After intervention		Wilcoxon Sign Rank Test (Z)	p Value
	Mean	S.D	Mean	S.D		
Depression						
Experimental Group	8.00	2.08	6.50	1.93	-2.50	**0.013***
Anxiety						
Experimental Group	11.67	3.06	6.50	3.53	-2.95	**0.003****
Stress						
Experimental Group	10.33	3.17	6.00	2.83	-3.12	**0.002****

**p<0.01, *p<0.05 S - Significant

Table 6 illustrates that the z value obtained for the depression, anxiety, and stress in experimental group differed significantly after intervention p <0.05 and it is inferred that combination of back massage and affirmation relaxation had a significant effect on psychological status of caesarean section mothers.



护理杂志
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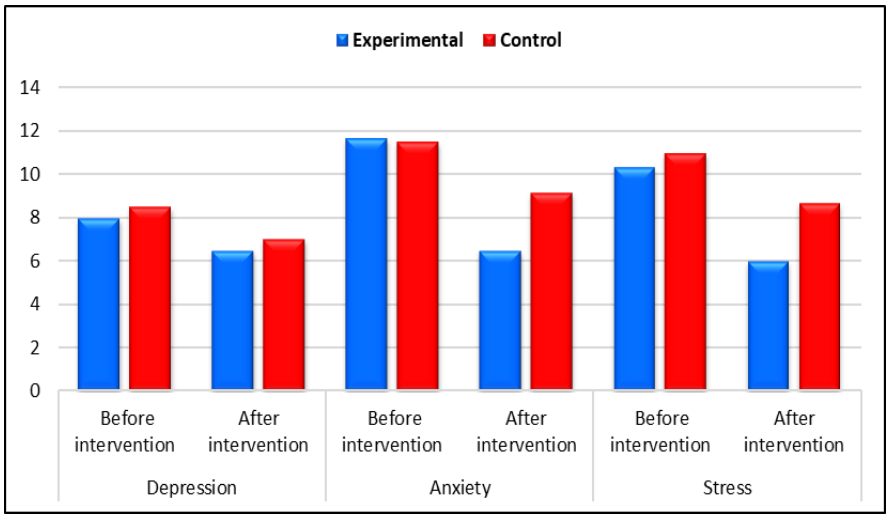
Table 7 : Mean, Standard Deviation and U value showing the effect of combination of back massage and affirmation relaxation on psychological status among mothers underwent lower segment caesarean section between experimental and control group n=24 (12+12)

Variables		Experimental		Control		Mann Whitney "U" Test	
		Mean	S.D	Mean	S.D	U value	p Value
Depression	Before intervention	8.00	2.09	8.50	2.28	63.5	0.630
	After intervention	6.50	1.93	7.00	2.49	65.0	0.713
Anxiety	Before intervention	11.67	3.06	11.50	2.97	70.0	0.932
	After intervention	6.50	3.53	9.17	1.99	38.5	0.052
Stress	Before intervention	10.33	3.17	11.00	2.63	62.5	0.590
	After intervention	6.00	2.83	8.67	2.31	**35.0**	**0.033**

*p<0.05, S – Significant, N.S – Non Significant

Table 7 shows that the U value 35.0 (p=0.033) obtained for Stress after intervention was statistically significant at 0.05 level. The "U" value 38.5 (p=0.052) obtained for anxiety was nearly statistically significant at 0.05 level of significance. Hence it was inferred that combination of back massage and affirmation relaxation was effective to reduce stress and anxiety among mothers underwent lower segment caesarean section. The depression score was not statistically significant. It may be due to the small sample size.



DISCUSSION

This present study tried to assess the effect of combination of back massage and affirmation relaxation on psychological status of caesarean section mothers in a selected hospital at Mau, U.P. The findings revealed an overall decrease in depression, anxiety, and stress of caesarean section mothers in experimental group than control group. The Wilcoxon sign Rank test shows a statistically significant reduction in depression, anxiety, and stress at p<0.05 of experimental group mothers after the intervention. The Mann Whitney Test shows a statistically significant reduction in stress and anxiety (nearly significant) between experimental and control group after intervention at p <0.05, indicating that combination of back massage and affirmation relaxation was effective to improve the psychological status of caesarean section mothers.

Volume 70 Number 7
ISSN: 0047-262X
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The present study findings were consistent with the study conducted among Iranian post partum mothers which demonstrated that there was a significant reduction in anxiety level after intervention 37.32±9.01vs 30.82±6.22, p≤0.001 and morning after intervention 37.40±8.29 vs 30.66±7.19, p≤0.001 among control group compared to experimental group[26]

The findings of the present study support a pilot study on effect of Benson's relaxation Therapy on post caesarean pain and stress in Gujarat. In this the mean pain score was reduced from 7 to 2.2 among experimental group mothers and 7.60 to 4 .6 among control group mothers. The mean stress score was reduced from 90.60 to 57.60 among experimental group mothers and 92.00 to 75.20 among control group[25].

The findings of another Randomized Controlled Trial study with 76 participants conducted on Self-empowerment Affirmation Relaxation program for postpartum blue mothers also support the present study which demonstrated that there was a significant reduction in the means of post-partum blue scores between intervention group and control group at 1 month, 2 month and 3 month follow up (p=0.01, 0.001 and 0.002 respectively) [24].

The findings of the present study are consistent with the findings of an analytical experimental study with randomized controlled trial which showed that the anxiety scale in the intervention group (median= 24, SD=4.45) was lower than the control group (median =34, SD=6.93) and the difference was statistically significant (p<0.001) [27]

The results found in the current study are at par with the findings of the previous studies and it suggests the success of the intervention – combination of back massage and affirmation relaxation on improving the psychological status of postpartum mothers by reducing depression, anxiety and stress.

CONCLUSION

The study concluded that combination of back massage and affirmation relaxation is an effective, economical, noninvasive patient friendly technique to improve the psychological status of caesarean section mothers during their immediate postpartum period.

Limitations

The result of the study cannot be generalized to all caesarean section mothers as the sample size of the study was small.

RECOMMENDATIONS

- Similar study can be conducted with large sample size to generalize the findings.
- A similar study can be conducted using some other standardized scale to assess the effectiveness the intervention on psychological status of the caesarean section mothers.
- A longitudinal study can be conducted to assess the impact of the intervention on the psychological status of caesarean section mothers.

Nursing Implications

Nurses have a pivotal role in the prevention, assessment and management of postpartum mental health problems. Nurse administrators can promote hospital policies and procedures contusive to improve psychological status of mothers during antenatal, intra natal and post-natal period. They should periodically evaluate the psychological problems of mothers especially caesarean section mothers. During the clinical practice whether in inpatient or outpatient department nurse should develop

Volume 70 Number 7
ISSN: 0047-262X
DOI: 10.17605/OSF.IO/869AU

effective communication and understand the details of the client. She should identify the risk factors and symptoms of postpartum psychiatric disorder and arrange facilities for counseling or referral services. Nurse educators should give due importance to postpartum psychiatric disorder in the curriculum and encourage students to conduct awareness program on post-partum psychiatric disorder, its prevention and management. There is a need for nursing research and evidence based practices in the area of assessment, prevention and management of post-partum psychiatric disorders.

Conflict Of Interest: None

Acknowledgement

The author expresses sincere thanks to all the faculty of Fatima College of Nursing, Lucknow and Administrator and Obstetrical and Gynaecological department and Paediatric department, Fatima Hospital, Mau, U.P for their co-operation and constant support.

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