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Effect of Progressive Muscle Relaxation on Anxiety among Antenatal Mothers Attending Antenatal OPD of GGSMC & Hospital, Faridkot, Punjab

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Abstract

Introduction: During pregnancy many changes occur in women's self-concept and the changes in their self-image and the shift in focus from themselves to the needs of the foetus and unfamiliar territory of pregnancy and early motherhood creates anxiety. Relaxation techniques are a great way to help in managing anxiety such as progressive muscle relaxation technique(PMRT) which may be very useful for treating anxiety symptoms during pregnancy.

Aim: The aim of this study is to assess the effect of progressive muscle relaxation on anxiety among antenatal mothers.

Material & Method: Quasi Experimental design with two group pre-test and post-test design was used. Conceptual framework for the study was adopted from Ludwig Von Bertalanffy (1968) General System Model was chosen to conduct the study. Through convenience sampling, 35 subjects were selected in experimental and 35 in control group. Subjects in experimental group (n=35) were provided PMRT and conventional care and in control group (n=35) only conventional care was provided. Perinatal Anxiety Screening Scale (PASS) and Socio demographic data sheet was used to collect the data.

Results: Results revealed that there was significant difference in level of anxiety after four weeks of progressive muscle relaxation technique in experimental group (p value 0.005) as compared to control group. However, there was no association of pre-test level of anxiety with selected demographic variables

Conclusion: The study concluded that progressive muscle relaxation technique was effective in reducing anxiety among antenatal mothers after 4 weeks of intervention in experimental group.

Keywords: *Antenatal mothers*, *Progressive muscle relaxation technique, Perinatal Screening Anxiety scale, anxiety.*

Introduction

Pregnancy is an important event, one of the great honours and God's gift to woman, for this woman is respected everywhere. It is surrounded by many positive values ranging from enhancement of the self-esteem to social approval. Pregnancy and child birth is a great event in the life of every woman for which she aspires and longs for, with great expectation. She has fantasies about pregnancy and motherhood.[1] The psychological changes also depend upon whether the pregnancy was planned or unplanned, fear of problems associated with the pregnancy or the baby, fear of childbirth and lack of support and being alone, the amount of help the couple might expect to receive in raising the child, the type of

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relationship whether stable or transient with the partner, pressure from the partner or family to become pregnant.[2]

During pregnancy many changes occur in women's self-concept. Women may feel having lost some control over their lives. The changes in their self-image and the shift in focus from themselves to the needs of the foetus and unfamiliar territory of pregnancy and early motherhood creates stress and anxiety.[3]

Anxiety can arise when the expectations are not met culminating in the delivery of a healthy baby is threatened. Pregnancy can increase anxiety in a woman's life. .The extent of anxiety during pregnancy is determined by a combination of a degree of awareness and the magnitude of their unmet needs.[4] Maternal stress and anxiety were found to be the predictors of adverse pregnancy outcomes including low birth weight and prematurity. The consistent increase in the frequency of IUGR, preterm delivery and LBW were noted among the infants of women with high baseline levels of psychological distress and low levels of social support. Anxious pregnant women are more likely to have asthmatic children.[5]

The common non-pharmacological therapies given during antenatal period to alleviate stress and anxiety are massage, muscle relaxation, breathing technique, aroma therapy, herbal therapy, yoga, guided imagery, meditation and psychotherapy.[6]

Muscle relaxation technique is equally non-invasive, cost-effective, and easily applicable during pregnancy Progressive muscle relaxation therapy is an effective and widely used mind body interventional strategy for stress and anxiety relief. It is a therapy with tensing and relaxation of muscle groups. It was developed by Chicago physician Edmund Jacobson in the year of 1934. The contraction of skeletal muscle fibres leads to the sensation of muscle tension, the result of a complex interaction of the central and peripheral nervous system with the muscular & the skeletal systems and relaxation occur during the absence of perceived muscle tension. The sympathetic and parasympathetic nervous systems often work reciprocally in that elevated activation of one leads to deactivation of the other. Sympathetic activation is called the ergo tropic or 'fight or flight' response, Parasympathetic activation has been called the relaxation response or trophotropic in that it promotes rest and repair. Parasympathetic responses include reductions in HR and BP, stress and anxiety.[7]

The premise of PMR is that by tightening and releasing all the major muscle groups of the body in an exaggerated fashion, which will end up feeling more relaxed and at peace with yourself, and much less anxiety then you otherwise would. Practice of progressive muscle relaxation assist in relieving muscle tension, greatly improve overall feeling of well-being and most importantly, reduce stress and anxiety during pregnancy and make the pregnancy as joyous one.[8]

Statement of Problem: An Experimental Study to Assess the Effect of Progressive Muscle Relaxation Technique on Level of Anxiety among Antenatal Mothers attending Antenatal OPD of GGSMC & Hospital, Faridkot, Punjab.

Objectives:

1. To assess the pre-test level of anxiety among antenatal mothers in experimental and Control group.
2. To assess the post-test level of anxiety among antenatal mothers in experimental and control group.
3. To compare the pre-test and post-test level of anxiety among antenatal mothers in experimental and control group.
4. To determine the association of pre-test level of anxiety with selected demographic variables.

Hypotheses:

- **H_0:** The post-test level of anxiety among antenatal mothers in experimental and control group will be same.

Material and Method

The researcher has adopted the quantitative research approach and pre-testpost-test two group design. **Settings of the study**: study was carried out in Antenatal OPD of GGSMC & Hospital, Faridkot, and Punjab. **Population:** Target population for the study consisted of Antenatal mothers with a period of gestation ≥20 weeks attending antenatal OPD of GGSMC & Hospital, Faridkot, and Punjab. **Independent variable:** Progressive Muscle Relaxation Technique **Dependent variable:** Anxiety **Sample:** Antenatal Mothers. **Sample size:** 70 (35 in experimental and 35 in control group). **Sampling Technique:** Convenience sampling technique was used. **Description of the tool: Section A:** The demographic profile of the staff nurses was prepared by the investigator

under the guidance of guide and Co-guide. It includes variables such as Age (years),Education,Type of family, Monthly family income,Occupation, Period of gestation (in weeks), Gravida, No of live children, Sex of live children, Previous mode of delivery, History of miscarriage, Duration of sleep in 24 hrs. **Section B:** Perinatal anxiety screening scale.

Range of Scores	Level of Anxiety
0-20	Asymptomatic
21-41	Mild-Moderate Symptoms
42-93	Severe Symptoms

Criteria Measure:

Reliability: The reliability coefficient was 0.85 and the tool was found to be reliable. **Validity:** The validity was established by 6 experts. **Pilot Study:** The pilot study was being carried out on 10 subjects (5 in experimental and 5 in control group).

Results

Table 1: Frequency and percentage distribution of sample according to pre-test level of anxiety among experimental and control group N=35

Groups	Pre-Test Level of Anxiety		
	Asymptomatic (0-20)	Mild-Moderate (21-40)	Severe (42-93)
Experimental Group	6(17.14%)	19(54.2%)	10(28.5%)
Control Group	05(14.2%)	20(57.14%)	10(28.5%)

Table 1 depictsthe frequency distribution of antenatal mothers according to pre-test level of anxiety among experimental group & Control group. In the experimental group most of the antenatal mothers 19(54.2%), were in the category of mild to moderate anxiety followed by 10(28.5%) in severe category and only 6(17.14%) were in the asymptomatic category where as In the control group most of the antenatal mothers 20(57.14%) were in the category of mild to moderate anxiety, followed by 10(28.5%) in severe category and only 5(14.2%) were in the asymptomatic category.

Table 2: Frequency and percentage distribution of antenatal mothers according to post-test level of anxiety among experimental & control group N=35

Groups	Post-Test Level of Anxiety		
	Asymptomatic (0-20)	Mild-Moderate (21-40)	Severe (42-93)
Experimental Group	11(31.4%)	19(54.2%)	05(14.2%)
Control Group	05(14.2%)	16(45.7%)	14(40%)

Table 2 depicts the frequency distribution of antenatal mothers according to post-test level of anxiety among experimental group & Control Group. In the experimental group most of the antenatal mothers were in the category of mild to moderate anxiety 19(54.2%), followed by 11(31.4%) in asymptomatic category and only 5(14.2%) were in the severe category whereas In the control group most of the antenatal mothers were in the category of mild to moderate anxiety 20(57.14%), followed by 10(28.5%) in severe category and only 5(14.2%) were in the asymptomatic category.

Table 3: Comparison of effectiveness of progressive muscle relaxation technique on level of anxiety between experimental and control group N=70

Pre/Post test	Experimental Group N=35		Control Group N=35		t-test	Df	P-value
	Mean	±SD	Mean	±SD			
Pre-test	33.82	14.4	34.28	12.6	0.141	68	0.888
Post-test	28.88	11.6	38.45	14.37	3.056	68	.003 **

*Significant at p value<0.05

Table 3 depicts that the mean score of level of anxiety of antenatal mothers before intervention between experimental and control group was 33.82 & 34.28 and SD was 14.4 & 12.6 respectively. To compare the mean score between two groups, t test was applied. The t value on df 68 was 0.141 and p value was 0.888. There was no significant difference among the two groups with regard to anxiety at p value 0.05. Hence it can be interpreted that the pre-test level of anxiety was almost same between both groups. The mean score of post-test anxiety after four weeks was 28.88 & 38.45 and SD was 11.6 & 14.37 in experimental and control group respectively. The t value on df 68 was 3.056. There was significant difference at p value 0.003 between the two groups with regard to post- test level of anxiety after four weeks at p value 0.05. Hence it can be interpreted that there was significant difference in post -test level of anxiety after four weeks in experimental and control group. The level of anxiety after four weeks had reduced in experimental group as compared to control group.

Table 4: Comparison of effectiveness of progressive muscle relaxation technique on level of anxiety within the groups (experimental & Control group) N=70

Pre/Post test	Pre-Test		Post-test		t-test	Df	P-value
	Mean	±SD	Mean	±SD			
Experimental group (N=35)	2.1143	0.67	1.828	0.66	2.380	34	0.023*
Control group (N=35)	2.1429	0.64	2.314	0.67	1.358	34	0.183

*Significant at p value<0.05

Table 4 depicts the mean scores and standard deviation of pre-test level of anxiety of antenatal mothers was 2.1143±0.67 which was reduced to 1.8286±0.66 after intervention in experimental group. Paired t test was applied and t value on df 34 was 2.995. There was significant difference (p value 0.005) within the experimental group at p value 0.05. Hence it can be interpreted that there was significant difference in the level of anxiety among antenatal mothers within the experimental group. On the other hand, the mean score and standard deviation in control group was increased from 2.1429 ± 0.64 to 2.314 ± 0.67 On comparison of mean score, Paired t test was computed and t value on df 34 was 2.100. Hence it can be interpreted there was no significant difference (p value 0.043) within the control group at p value 0.05.

Table 5: Findings related to association of anxiety level with socio-demographic variables N=70

Sr.No.	Variable	X^2	Df	P value	Association
1.	Age	2.967	4	0.563	NS
2.	Education	10.772	8	.215	NS
3.	Type of family	4.708	4	0.319	NS
4.	Monthly family income	9.512	8	0.301	NS
5.	Occupation	0.213	2	0.899	NS
6.	Period of gestation	1.951	4	0.745	NS

Sr.No.	Variable	X^2	Df	P value	Association
7.	Gravida	2.115	2	0.347	NS
8.	No of live children	6.425	6	0.377	NS
9.	Sex of live children	3.021	6	0.806	NS
10.	Previous mode of delievery	4.190	4	0.381	NS
11.	History of miscarriage	2.052	2	0.358	NS
12.	Duration of sleep	3.611	6	0.729	NS

Table 5 depicts that there was no association of socio-demographic variables with pre-test level of anxiety among antenatal mothers which revealed the non-significant relationship at p>0.05.

Discussion

Present study revealed that maximum 35(50%) antenatal mothers were in the age group 25- 31 and minimum 6 (8.6%) in 32-38 age group. These findings were supported by **S Rajeshwari (2013)**[9] that maximum antenatal mothers 117(46.8%) were in the age group of 20-25 yrs and minimum 65(32%) in the age group of 36-40 yrs. Similar findings were reported by **Ika Mardiyanti (2018)**[10] maximum antenatal mothers 30(93.8%) were in the age group 20-25 and least 2(6.2%) in the age group 36-40.

The present study revealed that in experimental group, 19(54.2%) mothers had mild-moderate level of anxiety whereas in control group 20(57.14) antenatal mothers had mild-moderate anxiety during pre-test. These findings were supported by **S Rajeshwari (2013)** during pre-test 81(64.8%) antenatal mothers had mild-moderate level of anxiety among experimental group whereas in control group 87(69.6%) antenatal mothers were with mild-moderate anxiety.

Similarly, in the present study during post-test 19(54.2%) antenatal mothers were with mild-moderate anxiety in experimental group and 16(45.7%) antenatal mothers with mild-moderate anxiety in control group. These findings were supported by **S Rajeshwari (2013)** 97(78.9%) antenatal mothers were with mild-moderate anxiety in experimental group and while 84(67.2%) among control group in post-test.

Conclusion

- The anxiety among antenatal mothers in the experimental and control group during pretest and posttest revealed that in the pretest, maximum antenatal others 19(54.2%) & 20(57.14%) had mild-moderate level of anxiety, followed by 10(28.5%) had severe level of anxiety and only 6(17.14%) & 5(14.2%) were asymptomatic in both the groups.
- In the posttest also, majority of the antenatal mothers 19 (54.2%) from the experimental group and 16(45.7%) from the control group had mild-moderate anxiety and only 5(14.2%) in the experimental group were asymptomatic and only 5(14.2%) in the experimental group and 14(40%) in the control group had severe level of anxiety.
- The findings of the study revealed that there was significant effect of progressive muscle relaxation on anxiety among antenatal mothers in experimental group.
- There was statistically non-significant association of pre-test level of anxiety with selected demographic variables

Recommendation for Future Study:

1. Comparative study to assess efficacy of the intervention between normal mothers and high-risk mothers.
2. Biochemical markers can be used to assess stress and anxiety on efficacy of the intervention
3. A similar study on primigravidae can be conducted at different period of gestation.
4. A comparative study can be done between muscle relaxation therapy and some other complementary and alternative therapies
5. Knowledge, practice and attitude about PMR among other health care team members can be studied.

Limitations: It is a small sample sized study.

Conflict of Interest: Nil

Source of Funding: Self

Ethical Clearance: This study has been approved by the ethical committee of University College of

Nursing, BFUHS (Baba Farid University of Health Sciences). Permission of data collection was taken from the Medical Superintendent (MS) of the GGS medical College and Hospital, Faridkot. Written Informed consent was taken from each study subject.

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References

1. Annandale E. How Midwives Accomplish Natural Birth: Managing Risk and Balancing Expectations. Social Problems [Internet]. 1988;35(2):95-110. Available from: https://journals.sagepub.com/doi/10.1177/0891243202238978
2. Huizink A, Mulder E, Buitelaar J. Prenatal Stress and Risk for Psychopathology: Specific Effects or Induction of General Susceptibility. Psychological Bulletin. 2004;130(1):115-142.
3. Darvill R, Skirton H, Farrand P. Psychological factors that impact on women's experiences of first-time motherhood: a qualitative study of the transition [Internet]. Pubmed. 2019 [cited 13 September 2019]. Available from: https://www.ncbi.nlm.nih.gov/pubmed/18783860
4. Andersson L, Sundström-Poromaa I, Wulff M, Åström M, Bixo M. Implications of Antenatal Depression and Anxiety for Obstetric Outcome. Obstetrics & Gynecology [Internet]. 2004;104(3):467-476. Available from: https://www.ncbi.nlm.nih.gov/pubmed/15339755 67-476. Available from: https://www.ncbi.nlm.nih.gov/pubmed/15339755
5. Cookson H, Granell R, Joinson C, Ben-Shlomo Y, Henderson A. Mothers' anxiety during pregnancy is associated with asthma in their children. Journal of Allergy and Clinical Immunology[Internet].2009;123(4):847-853.e11.Availablefrom: https://www.ncbi.nlm.nih.gov/pubmed/19348924
6. Conde-Agudelo A, Belizán J, Lammers C. Maternal-perinatal morbidity and mortality associated with adolescent pregnancy in Latin America: Cross-sectional study. American Journal of Obstetrics and Gynecology. 2005;192(2):342-349.
7. Jacobson, E. (1938). Progressive Relaxation. Chicago, IL University of Chicago Press. - References - Scientific Research Publishing [Internet]. Scirp.org. 2019 [cited 13 September 2019]. Available from: http://www.scirp.org/(S(i43dyn45teexjx455qlt3d2q))/reference/referencespapers.aspx?Referenceid=1209603
8. Carlson C, Hoyle R. Efficacy of abbreviated progressive muscle relaxation training: A quantitative review of behavioral medicine research. Journal of Consulting and Clinical Psychology. 1993;61(6):1059-1067.
9. Rajeswari S. Efficacy of progressive muscle relaxation on stress anxiety and pregnancy outcome among Primigravida [Internet]. Shodhganga inflibnet. 2019 [cited 13 September 2019]. Available from: http:// shodhganga inflibnet .ac.in / handle/10603/17938
10. Mardiyanti I. The effects of progressive muscle relaxation on the level of anxiety experienced by the primigravid women in the third trimester in bpm. Proceeding of surabaya international health conference. 2019.