EFFECTS OF APPLIED RELAXATION TRAINING PROGRAMME ON REDUCING ANXIETY AND PERCEIVED STRESS IN PREGNANT WOMEN

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Abstract:

Background of the Study: Practicing relaxation can take on a variety of forms; one of these forms is called "applied relaxation," and it includes activities such as breathing exercises and muscle relaxation. When it comes to treating anxiety problems, applied relaxation is just as helpful as cognitive treatment. **Objective:** The purpose of this study is to assess the efficacy of a relaxation training programme in lowering stress and anxiety in pregnant women. **Methodology:** Research design adopted in the study is based on pre-experimental design. Settings of the study was selected antenatal care centres in Panipat. Haryana. Size of the sample was 30 pregnant women. Sampling technique used for selecting samples were based on the purposive sampling technique. Data collection tools are Spielberger state-trait anxiety inventory and Cohen's Perceived Stress Scale. The applied relaxation training delivered to a participants consisted of seven 30 minutes group instruction sessions over the course of seven weeks. Statistical methods including descriptive and inferential were used to examine the data. **Results:** The results revealed a significant difference in the levels of state anxiety, trait anxiety, and perceived stress before and after the relaxation training programme [State Anxiety ('t' = 22.4, 'P' 0.001), Trait Anxiety ('t' = 23.33, 'P' 0.001), Perceived Stress ("t' = 22.89, 'P' 0.001)]. It was also discovered that no demographic variables were significantly related to pre-test levels of state anxiety, trait anxiety, or perceived stress. **Conclusion:** This study suggests that teaching applied relaxation may be a nonpharmacological way to help nervous pregnant women, at least throughout pregnancy. Future research must determine the intervention's long-term effects. Learning relaxation techniques could make women more health-conscious, which could contribute to healthy childbirth and childrearing. Maternity nurses and midwives should be trained in relaxation techniques to improve maternal mental health.

Keywords: Effectiveness, Applied Relaxation Training Program, Anxiety, Perceived Stress, Pregnant Women.

Introduction:

Pregnancy, Particularly the third trimester, is frequently accompanied by maternal worry. Depending on personality attributes, prior experience, hereditary factors, and social support, pregnant women react differently to identically stressful stimuli. In addition., normal pregnancy is linked with physical changes, hormonal shifts and anxiety about labour or foetal prognosis, all of which may exacerbate the stress response.[1] In the past two decades. There has been a substantial interest, both

from a clinical and a scientific point of view, in the influence of stress and anxiety during pregnancy on the health and the well-being of both the mother and her baby.[2]

Physically demanding employment, prolonged standing, shift and night work, and a high cumulative work tiredness score were shown in a meta-analysis of 29 studies to be strongly correlated with pre-term birth. Pregnancy related hypertension and preeclampsia were also associated with physically demanding jobs.[3] The emotional and mental health of women is often overlooked in poor nations in favour of resolving obstetric problems and decreasing maternal mortality. Pregnant women are more prone to brush off symptoms like insomnia, and fatigue, which point to a potential problem with their mental health, as being unavoidable side – effects of pregnancy.[4]

Hormonal shifts, altered mental outlooks, and reorganisation of one's career and social life are only some of the hallmarks of pregnancy.[5] Depending on the nature of the changes, the extent to which they are supported by the environment, and a host of other (personal) variables, these transitions can cause significant emotional upheaval and stress.[6] Negative maternal emotions or prolonged maternal stress influence not just the mother's mental health but also the child's development. Several studies suggest that prenatal distress and peripartum mental problems have harmful consequences on foetal and new-born development.[7]

To avoid or compensate for detrimental effects of maternal stress, preventive methods including as relaxation techniques are important. Most research show that mother relaxing during pregnancy reduces stress and improves wellbeing.[8] In pregnant women, a number of research have indicated that relaxation tactics positively affects the autonomic nervous system and reduce anxiety and depression. Di Pietro and colleagues gave pregnant women 18 minutes of guided imagery and music to relax and found that significant alterations in maternal heart rate (HR) and skin conduction level (SCL). [9] In a questionnaire – based study, Nwebube and colleagues found that pregnant women who listened to relaxation music for 12 weeks throughout their pregnancy exhibited fewer anxiety and depressed symptoms than women the control group. A substantial drop in maternal systolic and diastolic blood pressure, heart rate and uterine contractions was recorded after a prenatal music intervention for relaxation. Moreover, relaxation may improve the feeling of maternal labour pain.[10]

Practicing relaxation can take on a variety of forms; one of these forms is called "applied relaxation," and it includes activities such as breathing exercises and muscle relaxation is just as helpful as cognitive treatment.[11] It was observed in a study that involved 118 firefighters that the practise of applied relaxation considerably lowered both the participants' state and their trait anxiety.[12] In the current study, we wanted to determine whether or not practising relaxation techniques helps pregnant women feel less stressed and anxious about their pregnancy.

Statement of the Problem:

A study to evaluate the effectiveness of applied relaxation training programme on reducing anxiety and perceived stress among pregnant women in selected hospital, Cuttack. Odisha.

Objectives of the Study:

1. To assess the level of anxiety among pregnant women before and after applied relaxation training programme.
2. To assess the level of perceived stress among pregnant women before and after applied relaxation training programme.
3. To evaluate the effectiveness of applied relaxation training programme on reducing anxiety and perceived stress among pregnant women.
4. To determine correlation between anxiety and perceived stress among pregnant women,
5. To find out the association between level of anxiety and demographic variables of pregnant women.
6. To find out the association between level of perceived stress and demographic variables of pregnant women.

Methodology:

This study was prospective in nature, consisting of a set of pre- and post-tests, in this study, a course of 7 weekly applied relaxation training was used as the independent variable. Anxiety (both state and trait) and perceived stress were the primary outcomes of the interest. We took these readings both before and after the intervention was over, seven weeks later.

Thirty women who were pregnant for the first time were taken from three different antenatal care facilities to serve as a convenience sample. Women between the ages of 18 and 30 who were carrying a singleton pregnancy without any known medical or obstetric risks were considered eligible. All participants were educated adults who spoke Hindi fluently.

Participants were selected from a pool of people whose scores on the Spielberger State/Trait Anxiety Inventory ranged from 20 to 60, indicating moderate to high anxiety. Research was done in the three antenatal care centres of Panipat City, between October 2016 and February 2017. The Prem Institute of Medical Sciences Review Board in Panipat, Haryana, gave the study the green light from an ethical point of view.

During routine visits to the antenatal clinic, subjects completed questionnaires in a small private room. The applied relaxation training delivered to a participants consisted of seven 30 minutes group instruction sessions over the course of seven

weeks. For the majority of topics of interest to pregnant women, group instruction is more effective and less expensive than the individual instruction.

Classes were planned at the convenient times of participants. During the applied relaxation training, the women sat in a quiet room at the prenatal clinic and were instructed to imitate the various exercises performed by the instructor. Participants were also instructed to consistently practise the applied relaxation, and they kept daily records of their home relaxation practise throughout the day.

Table – I: Applied Relaxation Technique Session Schedule

Session	Activities	Content
One	**Introductory Session**	Group discussion of anxiety and stress-related problems in pregnancy, as well as a general and logical explanation of what applied relaxation is for.
Two	**Teaching Relaxation**	Teaching subjects to relax with a reduced version of progressive relaxation (tight for 5 seconds, relax for 10 seconds) in the hands, arms, face, shoulders, back, chest, stomach, breathing, hips, legs, and feet.
Three	**Relax Only Sessions**	The third session included "release-only" relaxation, which removes muscular tensing to speed relaxation.
Four	**Deep Breathing Techniques**	The fourth session emphasised deep breathing techniques to bring more oxygen to muscles and tissues.
Five	**Cue-Controlled Relaxation**	Cue controlled relaxation connects the self-instruction "relax" to being relaxed. This exercise emphasised breathing. For 5 breath cycles, the women were taught to "inhale" and "calm" before each breath.
Six	**Differential Relaxation**	This lesson teaches women to relax body regions not engaged in standing or walking.
Seven	**Rapid Relaxation**	Participants relaxed when making a phone call or unlocking a cabinet. The target was 20 to 30 seconds.

To enhance the event, the researchers employed, posters and handouts. A leaflet featured information on anxiety and stress in pregnancy and applied relaxation. Simple Hindi was used to ensure comprehension. As the eighth and final week of the study progressed, the participants were given a questionnaire to fill out as the post-test. This was done oneweek following the final session.

Self – administered questionnaire containing state / trait anxiety and perceived stress ratings were used to collect data. These were administered as pre- and post – tests prior to and during seven – week instructional programme.

Statistical methods including descriptive and inferential were used to examine the data. State anxiety, trait anxiety, and perceived stress data were also summarised using descriptive statistics, as were the demographics of the study population.

Results:

Table – I: Distribution of Study Participants According to Socio-Demographic Variables

(n = 30)

S. No	Demographic Variables		Frequency	Percentage
1.	**Age (Years)**	18 – 22	3	10.0
		23 – 26	14	46.7
		27 – 30	13	43.3
2.	**Gestational Age (Weeks)**	21 – 28	18	60.0
		29 – 36	12	40.0
3.	**Education**	Middle school	2	6.7
		High school	18	60.0
		Diploma / graduate	10	33.3
4.	**Occupation**	Housewife	18	60.0
		Laborer	4	13.3
		Employee	8	26.7
5.	**Family Type**	Joint	12	40.0
		Nuclear	18	60.0
6.	**Residence**	Rural	18	60.0
		Urban	12	40.0
7.	**Socio-Economic Status**	Poor	1	3.3
		Moderate	21	70.0
		Good	8	26.7

Table I indicates research participants' socio-demographics. Most study participants were between 23 and 26 years old (46.7%).Most study participants (60%) were between 21- and 28-weeks gestation.Most study participants (18,60%) had high school education.In terms of occupation, housewives constituted the majority (18 (60.0%) of study participants.According to the study participants' family type, the majority of them (18 (60.0%) belonged to a joint family. Majority of the study participants 18 (60.0 %) were residing in rural areas. Results showed that 18 people (60.0%) who participated in the study were from rural areas.Of the total number of people who took part in the study, 21 (or 70.0% of the total) come from middle-class backgrounds.

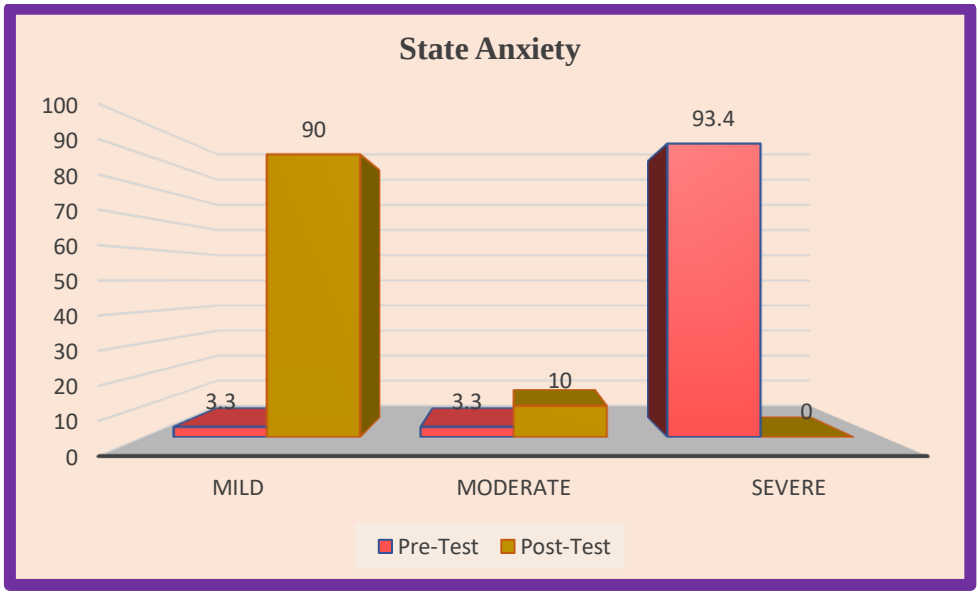

Figure – 1: Clustered Column Chart Shows the Level of State Anxiety

At the time of the pre-test, the vast majority of the study's participants, a total of 28 (93.3%), were experiencing severe levels of state anxiety. At the time of the post-test, the majority (90%) of participants had minor state anxiety.

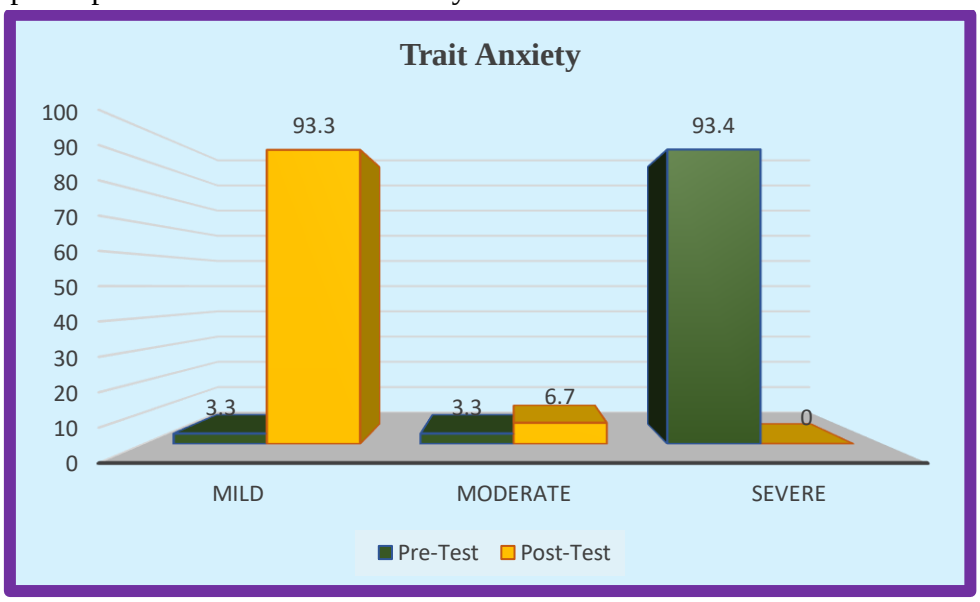

Figure – 2: Clustered Column Chart Shows the Level of Trait Anxiety

The vast majority of study participants (28.93.3%) had severe trait anxiety at the time of the pre-test assessment, and the overwhelming majority of study participants (29.93.3%) had mild trait anxiety at the time of the post-test assessment.

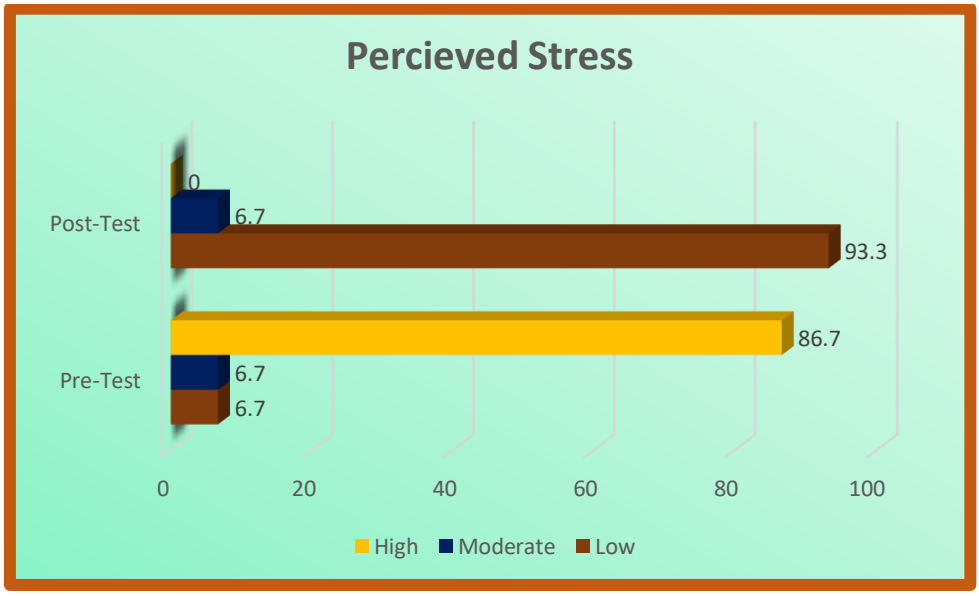

Figure – 3: Clustered Bar Chart Shows the Level of Perceived Stress

The perceived stress level of study participants reveals that during the pre-test assessment, most of them (26.7%) had high perceived stress, while during the post-test assessment, the majority (28.3%) had low perceived stress.

Table – II: Comparison of Mean, Standard Deviation, Mean % and Variance levels of State, Trait Anxiety and Perceived Stress of the Study Participants

(n = 30)

Variables	Pre-Test			Post-Test		
	Mean (S.D)	Mean %	Variance	Mean (S.D)	Mean %	Variance
State Anxiety	65.6 (6.84)	76.00	46.8	27.5 (6.49)	50.00	42.19
Trait Anxiety	66.5 (7.47)	73.00	55.9	27.4 (6.27)	49.00	39.42
Perceived Stress	32.5(6.46)	38.00	41.7	10.0 (3.67)	26.00	13.51

The mean and standard deviation score for state anxiety during the pre-test was 65.6 ± 6.84. The mean percentage score was 76.0, while the variance was 46.8. Similarly, the mean and standard deviation scores for the post-test evaluation were 27.5 ± 6.49. The mean percent score was 50 and the standard deviation was 42.19.

Pre-test mean and standard deviation scores for trait anxiety were 66.5 ± 7.47 and 73 was the mean %. Variance was 55.7. Post-test score was 27.4 ± 6.27. Mean % was 49.00. 39.42 was variance.

Mean and standard deviation scores for perceived stress during the pre-test were 32.5 ± 6.46, and the mean percent score was 38. The variance was 41.7, and the post-test score was 10.0± 3.67. The mean percentage was 26.0, while the variance was 13.51.

Table – III: Effectiveness of Applied Relaxation Techniques on State Anxiety, Trait Anxiety and Perceived Stress

(n = 30)

Tests	Mean	Mean Difference	S. D	LL	UL	Paired 't' test Score	'P' Value
				95 % CI			
State - Anxiety							
Pre - Test	65.60	39.0	6.8	34.2	41.5	22.44 (df = 29)	0.001***
Post - Test	27.50		6.4				
Trait - Anxiety							
Pre - Test	66.50	39.07	7.4	35.6	42.4	23.33 (df = 29)	0.001***
Post - Test	27.43		6.2				
Perceived Stress							
Pre - Test	32.57	22.57	6.4	20.5	24.5	22.89 (df = 29)	0.001***
Post - Test	10.00		3.6				

From Table III, we can conclude that the applied relaxation training programme reduced state anxiety, trait anxiety, and perceived stress significantly. The mean and standard deviation of state anxiety prior to the test were 65.6 $\pm$ 27.5. The mean score for difference was 39.0. The paired 't' test score of 22.44 for degree of freedom 29 was statistically significant at 'P' value 0.001. Similarly, the mean and standard deviation scores for trait anxiety were 66.50 $\pm$ 27.43, and the mean difference score was 39.07. The calculated paired 't' test score for the degree of freedom was 23.33, which was statistically significant at P 0.001. Mean and standard deviation for perceived stress were 32.57 $\pm$ 10.00. The mean score was 22.57 percent. The paired 't' test score for degree of freedom 29 was 22.89, which was statistically significant at a 'P' value 0.001.

Table – IV: Level of Association Between Pre-Test State Anxiety and Demographic variables

(n = 30)

S. No	Demographic Variables		N	M (S.D)	LL	UL	F Value	'P' Value
					95 % CI			
1.	**Age (Years)**	**18 – 22**	3	59.3 (17.7)	15.1	103.5	2.04 (2, 27)	0.15^{NS}
		23 – 26	14	67.5 (4.1)	65.1	69.9		
		27 – 30	13	64.9 (5.1)	61.7	68.0		

2.	**Gestational Age (Weeks)**	**21 – 28**	18	65.3 (8.7)	60.9	69.6	0.06 (1, 28)	0.79^{NS}
		29 – 36	12	66.0 (2.1)	64.6	67.3		
3.	**Education**	**Middle school**	2	68.0 (1.4)	55.2	80.7	0.47 (2, 27)	0.62^{NS}
		High school	18	64.6 (7.3)	60.9	68.2		
		Diploma / graduate	10	66.9 (6.6)	62.1	71.6		
4.	**Occupation**	**Housewife**	18	65.9 (4.9)	63.4	68.4	0.872 (2, 27)	0.42^{NS}
		Laborer	4	61.5 (15.7)	36.3	86.61		
		Employee	8	66.8 (4.0)	63.4	70.26		
5.	**Family Type**	**Joint**	12	66.6 (3.4)	64.4	68.8	0.47 (1, 28)	0.49^{NS}
		Nuclear	18	64.8 (8.4)	60.7	69.0		
6.	**Residence**	**Rural**	18	66.1 (7.8)	62.2	70.0	0.30 (1, 28)	0.58^{NS}
		Urban	12	64.7 (5.2)	61.3	68.1		
7.	**Socio-Economic Status**	**Poor**	1	70.0 (0)	0	0	0.33 (2, 27)	0.71^{NS}
		Moderate	21	65.8 (4.7)	63.6	68.0		
		Good	8	64.3 (11.1)	55.0	73.5		

The level of association between pre-test state anxiety and demographic variables is depicted in Table IV. According to this table, none of the demographic variables such as age, gestational age, education, occupation, family type, residence, or socioeconomic status had a significant relationship with pre-test state anxiety.

Table – IV: Level of Association Between Pre-Test State Anxiety and Demographic variables

(n = 30)

S. No	Demographic Variables		N	M (S.D)	LL	UL	F Value	'P' Value
					95 % CI			
1.	**Age (Years)**	18 – 22	3	58.6 (19.6)	9.84	107.4	2.75 (2, 27)	0.08^{NS}
		23 – 26	14	68.9 (2.4)	67.5	70.3		
		27 – 30	13	64.9 (5.1)	61.8	69.5		
2.	**Gestational Age (Weeks)**	21 – 28	18	65.7 (9.4)	61.0	70.4	0.06 (1, 28)	0.79^{NS}
		29 – 36	12	67.5 (2.5)	65.9	69.1		
3.	**Education**	Middle school	2	69.0 (0)	69.0	69.0	0.24 (2, 27)	0.78^{NS}
		High school	18	65.7 (8.0)	61.7	69.7		
		Diploma / graduate	10	67.3 (7.4)	61.9	72.6		
4.	**Occupation**	Housewife	18	67.1 (5.6)	63.4	68.4	2.10 (2, 27)	0.14^{NS}
		Laborer	4	59.7 (16.1)	36.3	86.61		
		Employee	8	68.3 (3.2)	63.4	70.26		
5.	**Family Type**	Joint	12	68.7 (2.1)	67.3	70.1	1.86 (1, 28)	0.18^{NS}
		Nuclear	18	65.0 (9.2)	60.3	69.6		
6.	**Residence**	Rural	18	67.2 (8.2)	63.1	71.3	0.47 (1, 28)	0.49^{NS}
		Urban	12	65.3 (6.3)	61.3	69.3		
7.	**Socio-Economic Status**	Poor	1	69.0 (0)	0	0	0.24 (2, 27)	0.78^{NS}
		Moderate	21	66.9 (5.5)	64.4	69.4		
		Good	8	65.0 (11.8)	55.0	74.9		

Table V demonstrates the degree of association between pre-test trait anxiety and demographic variables. According to this table, none of the demographic variables such as

age, gestational age, education, occupation, family type, residence, or socioeconomic status had a significant relationship with pre-test trait anxiety.

Table – IV: Level of Association Between Pre-Test State Perceived Stress and Demographic variables

(n = 30)

S. No	Demographic Variables		N	M (S.D)	LL	UL	F Value	'P' Value
					95 % CI			
1.	**Age (Years)**	18 – 22	3	27.3 (13.2)	-5.6	60.3	1.22 (2, 27)	0.31^{NS}
		23 – 26	14	33.7 (4.0)	31.3	36.0		
		27 – 30	13	32.5 (6.7)	28.4	36.6		
2.	**Gestational Age (Weeks)**	21 – 28	18	30.8 (7.9)	61.0	70.4	3.27 (1, 28)	0.08^{NS}
		29 – 36	12	35.0 (0.9)	65.9	69.1		
3.	**Education**	Middle school	2	34.0 (0)	8.59	59.4	0.12 (2, 27)	0.88^{NS}
		High school	18	32.8 (8.0)	29.9	35.7		
		Diploma / graduate	10	31.8 (7.4)	25.9	37.6		
4.	**Occupation**	Housewife	18	33.6 (5.8)	30.7	36.5	2.9 (2, 27)	0.07^{NS}
		Laborer	4	25.7 (10.2)	9.4	42.1		
		Employee	8	33.5 (3.8)	30.2	36.7		
5.	**Family Type**	Joint	12	33.8 (3.2)	31.7	35.9	0.76 (1, 28)	0.39^{NS}
		Nuclear	18	31.7 (7.8)	27.8	35.6		
6.	**Residence**	Rural	18	32.5 (6.2)	29.3	35.6	0.05 (1, 28)	0.94^{NS}
		Urban	12	32.6 (6.9)	28.2	37.1		
7.	**Socio-Economic Status**	Poor	1	36.0 (0)	0	0	0.51 (2, 27)	0.60^{NS}
		Moderate	21	33.1 (5.7)	30.46	35.7		
		Good	8	30.7 (8.4)	23.72	37.7		

The association between perceived stress prior to the test and demographic variables is illustrated in Table V. According to this table, none of the demographic variables, including age, gestational age, education, occupation, family type, residence, or socioeconomic status, had a significant relationship with trait anxiety prior to the test.

Discussion:

This study sought to determine the efficacy of an applied relaxation technique on state anxiety, trait anxiety, and perceived stress in pregnant women. After seven weeks of applied relaxation training, there was a significant difference between pre-test and post-test scores in terms of mean state anxiety, trait anxiety, and perceived stress mean and standard deviation scores.

Preeclampsia can be triggered by stress and worry, and recent reports in different parts of India indicate that these conditions are on the rise among pregnant women there. Therefore, lowering the worry or stress of expectant moms through the use of applied relaxation methods can improve hypertension symptoms and other maternal, foetal, and neonatal outcomes. The philosophy behind the practise of ACT is rooted in the fields of psychology, neurology, and immunology.[12]

Prenatal maternal stress causes birth defects. Relaxation practises may reduce stress then. Tragea C et al. (2014) studied the effects of applied relaxation on pregnant women in their second trimester. N = 31 primigravida women in their second trimester received a 6-week stress management programme (relaxation breathing and progressive muscle relaxation, RB-PMR, twice a day). The study found that the strategies improved pregnant women's mental health. Systematic use of prescribed relaxation techniques reduced perceived stress (mean change 3.23, 95% CI: 4.29 to 0.29) and increased sensation of control (mean change 1.99, 95% CI: 0.02–3.7).[13]

It has been discovered that maternal worry and stress are predictors of unfavourable pregnancy outcomes, such as low birth weight and premature delivery. A study was carried out in Iran on 110 women who were considered to be at a low risk of obstetrical complications and medical complications during their first pregnancies. The purpose of the study was to determine whether relaxation education in anxious pregnant Iranian women in their first pregnancy affects certain pregnancy outcomes. These outcomes included birth weight, the rate of preterm birth, and the rate of surgical delivery. In the study, participants in the control group simply got regular prenatal care, but those in the experimental group also participated in applied relaxation training sessions over the course of seven weeks. Both preeducational and posteducational intervention were used to measure levels of anxiety as well as felt stress. In the experimental group, significant decreases in low birth weight, caesarean section, and/or instrumental extraction were identified compared to the control group's findings. These findings were based on the findings of the study. It was discovered that there were no significant variations in the rates of premature birth.[14]

Conclusion:

According to the findings, there may be positive impacts of participating in relaxation training programmes throughout the prenatal period. This intervention has the potential to act as a resource for improving the outcomes of pregnancies in women who experience high levels of stress and anxiety.

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