



ISSN: 2456-0057  
IJPNPE 2019; 4(1): 1291-1293  
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www.journalofsports.com  
Received: 20-11-2018  
Accepted: 21-12-2018

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## Effect of progressive muscular relaxation technique on stress and anxiety among women students

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### Abstract

The purpose of the study was to find out the effect of progressive muscular relaxation technique on stress and anxiety among women students. To achieve the purpose of these study thirty women students were selected from JBAS College for Women Chennai, University of Madras within the aged range from 18 to 25 years. The selected subjects were randomly assigned into two equal groups of 15 each, such as experimental and control group. The experimental group participated in the progressive muscular relaxation training for six weeks, training session for thrice in a week, each section lasted 30minutes and the control group did not participate in any kind of training programme apart from the daily activities. The selected variables such as stress and anxiety were measured by using Spielberger (1979) and Everly and Girdano's (1973) Questionnaires. The subjects of two groups were tested on selected variables prior and immediately after the training period. The collected data were analysed statistically through analyze of covariance (ANCOVA) to find the significance difference. The 0.05 level of confidence was fixed to test the level of significance difference, the result of the study showed that systematic practice of six weeks progressive muscular relaxation training programme were significance differences on selected criterion variables such as stress and anxiety among women students.

**Keywords:** Progressive muscular relaxation training, stress and anxiety

### Introduction

The entire world has become a global village with information technology. Despite technological advances, human suffers from stress and anxiety much more than ever before. According to Mohan (2005) <sup>[1]</sup> the last century has seen the immense changes in the escalation of anxiety into stress and burnout. Mental problems, stress and anxiety are considered as major problems in womanhood. Globalization, automation, competition and science have brought about tremendous changes the life style of the society.

Progressive muscle relaxation (PMR) is stress and anxiety-reduction technique first introduced by American physician Edmund Jacobson in the 1930s. The technique involves alternating tension and relaxation in all of the body's major muscle groups. Progressive muscle relaxation is generally used along with behavioral therapy techniques such as systematic desensitization. However, practicing the technique alone will give you a greater sense of control over your body's anxiety response.

### Methods

To achieve the purpose of these study thirty women students were selected from JBAS College for Women Chennai, University of Madras within the aged range from 18 to 25 years. The selected subjects were randomly assigned into two equal groups of 15 each, such as experimental and control group. The experimental group participated in the progressive muscular relaxation training for six weeks, training session for thrice in a week, each section lasted 30minutes and the control group did not participate in any kind of training programme apart from the daily activities. The selected variables such as stress and anxiety were measured by using and Questionnaires.

### Training Programme

During the experimental training period the experimental group underwent six weeks of progressive muscle relaxation programme in addition to their daily routine activities

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as per the schedule. The duration of training were planned for 30 minutes that is from 7.00am to 7.30am on Mondays, Wednesdays and Fridays. All the subjects involved in this study were carefully monitored throughout the training programmes, each session consist of 30 minutes, after completion of six weeks of progressive muscular relaxation training period, the participants were retested as the pre-test.

**Progressive muscle relaxation technique**

1. Find a quiet place free from distractions. Lie on the floor or recline in a chair, loosen any tight clothing and remove glasses or contacts. Rest your hands in your lap or on the arms of the chair.
2. Take a few slow even breaths. If you have not already, spend a few minutes practicing diaphragmatic breathing.
3. Forehead. Focus attention on your forehead. Squeeze the muscles in your forehead, holding for 15 seconds. Be careful only to tense the muscles of your forehead and to leave the rest of your body relaxed. Feel the muscles becoming tighter and tenser.
4. Then, slowly release the tension in your forehead while counting for 30 seconds. Notice the difference in how your muscles feel and the sensation of relaxation. Continue to release the tension in your forehead until it feels completely relaxed. Continue breathing slowly and evenly.
5. Jaw. Now, shift attention to your jaw. Tense the muscles in your jaw holding for 15 seconds. Then, release the tension slowly while counting for 30 seconds. Notice the feeling of relaxation and continue to breathe slowly and evenly.
6. Neck and Shoulders. Now, shift attention to your neck and shoulders. Increase tension in your neck and shoulders by raising your shoulders up towards your ears and hold for 15 seconds. Slowly release the tension as

you count for 30 seconds. Notice the tension melting away.

7. Arms and Hands. Slowly draw both hands into fists. Pull your fists into your chest and hold for 15 seconds, squeezing as tight as you can. Then, slowly release while you count for 30 seconds. Notice the feeling of relaxation.
8. Buttocks. Slowly increase tension in your buttocks over 15 seconds. Then, slowly release the tension over 30 seconds. Notice the tension melting away. Continue to breathe slowly and evenly.
9. Legs. Slowly, increase the tension in your quadriceps and calves over 15 seconds. Squeeze the muscles as hard as you can. Then, gently release the tension over 30 seconds. Notice the tension melting away and the feeling of relaxation that is left.
10. Feet. Slowly, increase the tension in your feet and toes. Tighten the muscles as much as you can. Then, slowly release the tension while you count for 30 seconds. Notice all the tension melting away. Continue breathing slowly and evenly.
11. Enjoy the feeling of relaxation sweeping through your body. Continue to breathe slowly and evenly.

**Statistical Technique**

The collected data were analysed statistically through analyze of covariance (ANCOVA) to find the significance difference.

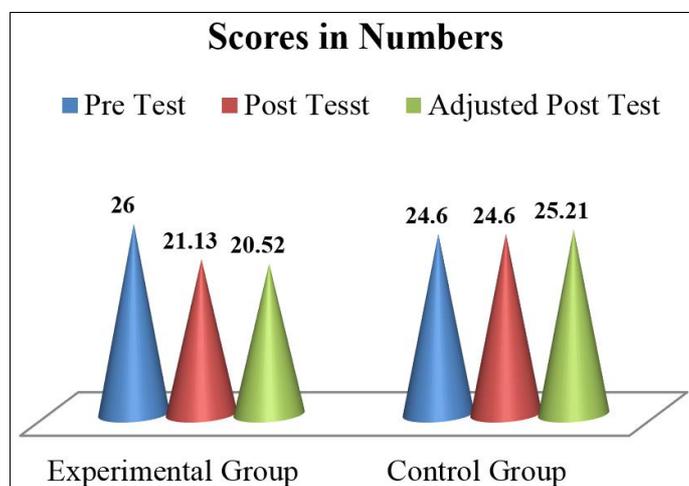
**Analysis of the Data**

The data collected prior and after the experimental periods on stress and anxiety of experimental group and control group were analysed and presented in table – I & II. The level of significance was fixed at 0.05 level of confidence to test the ‘F’ ratio obtained by analysis of covariance.

**Table 1:** Analysis of covariance for pre and post data on stress

Test	PMT	CG	Source of variance	Sum of Squares	df	Mean square	F
Pre-test mean	26	24.60	Between	14.700	1	14.700	0.54
			Within	761.600	28	27.200	
Post-test mean	21.13	24.60	Between	90.133	1	90.133	4.02*
			Within	627.333	28	22.405	
Adjusted mean	20.52	25.21	Between	162.114	1	162.114	103.89*
			Within	42.131	27	1.560	

\* Significant at 0.05 level of confidence. (The table value required for significance at 0.05 level of confidence with df 2 and 28 and 2 and 27 were 3.34 and 3.35 respectively).



**Fig 1:** Bar Diagram showing pre, post and adjusted means on stress

### Discussion on findings of stress

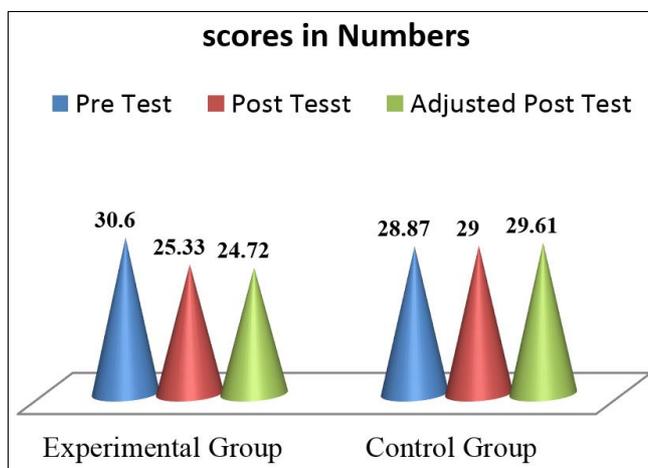
The obtained F value on pre test scores 0.54 was lesser than the required F value of 3.34 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal. The post test scores analysis proved that there was significant difference between the groups as the obtained F value at 4.02 was greater than the required F value

at 3.34. This proved that the differences between the post test mean at the subjects were significant. Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 103.89 was greater than the required F value at 3.35. This proved that there was Significant differences among the means due to six weeks of progressive muscular relaxation training on stress.

**Table 2:** Analysis of covariance for pre and post data on anxiety

Test	PMT	CG	Source of variance	Sum of Squares	df	Mean square	F
Pre-test mean	30.60	28.87	Between	22.533	1	22.533	1.92
			Within	329.333	28	11.762	
Post-test mean	25.33	29.00	Between	100.833	1	100.833	8.52*
			Within	331.333	28	11.833	
Adjusted mean	24.72	29.61	Between	167.699	1	167.699	26.97*
			Within	167.900	27	6.219	

\* Significant at 0.05 level of confidence. (The table value required for significance at 0.05 level of confidence with df 2 and 28 and 2 and 27 were 3.34 and 3.35 respectively).



**Fig 2:** Bar diagram showing pre, post and adjusted means on anxiety

### Discussion on Findings of Anxiety

The obtained F value on pre test scores 1.92 was lesser than the required F value of 3.34 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal. The post test scores analysis proved that there was significant difference between the groups as the obtained F value at 8.52 was greater than the required F value at 3.34. This proved that the differences between the post test mean at the subjects were significant. Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 26.97 was greater than the required F value at 3.35. This proved that there was Significant differences among the means due to six weeks of progressive muscular relaxation training on anxiety.

### Conclusion

1. The selected criterion variable stress was significantly increased due to six weeks of progressive muscular relaxation training among women student while comparing to the control group.
2. The selected criterion variable anxiety was significantly increased due to six weeks of progressive muscular relaxation training among women student while comparing to the control group.

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