



Section A-Research paper

A STUDY TO ASSESS THE EFFECTIVENESS OF JACOBSON'S PROGRESSIVE MUSCLE RELAXATION TECHNIQUE (PMRT) ON SOCIAL ANXIETY AMONG ADOLESCENT OF SELECTED SCHOOLS OF SAGAR, (M.P.)

Mr. Vashishtha¹, Dr. Mamta Vyas²

^{1,2} Department of psychology, Sri Satya Sai University of Technology & Medical Sciences, Sehore Madhya Pradesh, 466001, India

Corresponding author mail id: vashishthaselvan91@gmail.com

Abstract

Adolescence is a transitional phase of growth and development between childhood and adulthood. The unique nature and importance of adolescents mandates explicit and specific attention in mental Health. The aim of the study is to assess the level of social anxiety among the adolescent in selected schools of Sagar, M.P. The objectives of the study are to demonstrate the Jacobson's Progressive Muscle Relaxation Technique (PMRT) to the adolescents, to compare the Post-test social anxiety scores in both the groups and to find out the association between the social anxieties Post-test scores with the demographic variables of both groups. A true experimental research design was used with the experimental and control group, with 60 samples in the experimental group and 60 in control group. Total of 120 adolescents were found to have social anxiety, which was categorized as Mild, Moderate and Severe on the basis of anxiety scores on the 1st day. Jacobson's Progressive Muscle Relaxation Technique was administered for 10 days, once a day and social anxiety was assessed on the 11th day. Based on the findings the conclusion was drawn that Jacobson's Progressive Muscle Relaxation Technique is effective in reducing social anxiety among adolescent.

Keywords: Social Anxiety, Jacobson's Progressive Muscle Relaxation Technique (PMRT), Adolescent

DOI: 10.48047/ecb/2023.12.si7.316



INTRODUCTION

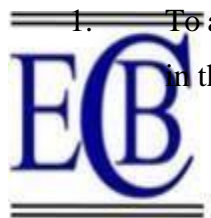
The period of growth and development known as adolescence occurs between childhood and maturity. Adolescents require clear and focused attention in mental health because of their special characteristics and significance. [1] Every student's life includes stress and anxiety. The period of adolescence is crucial for the emergence of anxiety disorders. [2] A study suggested that 70% of teens reported that their peers suffer from psychological problems such as anxiety and depression. Anxiety and stress can have their roots in a person's environment, lifestyle, and social and academic circumstances. Teens that suffer from social anxiety disorder frequently and persistently avoid social and performance settings including school, parties, sports events, and other activities. One of the main stressors for adolescents has been identified as academic stress, which can lead to low self-esteem in them. In any given school, about 7% of teenagers will be diagnosed with social anxiety, which affects both boys and girls equally. [3] The two most common mental health issues among adolescents are social phobia and depressions which are typically goes unnoticed. Adolescents most prevalent issues are growth and development; the school childhood illness that persists into adolescence and leading to mental health concerns. Feeling of inferiority or superiority may arise at this time; hence teenagers are more vulnerable to poor amour-propre, loneliness, and even suicidal impulses throughout the transition from childhood to maturity, besides overwhelming emotions can lead to impulsive behavior which can be harmful to them.

‘The current study is proposed with the goal of assessing the prevalence of social anxiety disorders (social phobia) and depression among teenagers in order to explore our understanding of social phobia and depression in adolescents’. [4]

Problem Statement

“A study to assess the Effectiveness of Jacobson’s Progressive Muscle Relaxation Technique (PMRT) on Social Anxiety among Adolescents of Selected Schools of Sagar, (M.P.)”.

Objectives:



1. To assess the pretest and post-test level of social anxiety among the adolescents in the experimental and control group.

Section A-Research paper

2. To assess the effectiveness of Jacobson's Progressive Muscle Relaxation Technique on social anxiety among adolescents in the experimental group.
3. To compare the pretest and post test level of social anxiety among the adolescents control group.
4. To compare the pretest and post test level of social anxiety among the adolescents between the experimental and control group.
5. To associate the post test social anxiety score among the adolescents with selected demographic variables in the experimental group.

Materials and methods

Research Methodology

Quantitative research approach was adopted in the study.

Research Design

Quasi experimental with experimental and control group research design was adopted in the study.

Variables under Study

- **Independent Variable :-** Progressive Muscle Relaxation Therapy on social anxiety.
- **Dependent Variable: -** Social Anxiety among adolescents.
- **Demographic Variables**
Age, gender, education, Number of siblings, birth order and socio economic status

Sample: The adolescents of both male and female of selected schools at Sagar (M.P)

Sample size: Total 120 (Experimental 60 and control 60)

Setting

The study was conducted at selected schools at Sagar.

Criteria for Sample Selection



Inclusion Criteria

The adolescents who are willing to participate

Section A-Research paper

- **Exclusion Criteria**

The adolescents who are not willing to participate

Sampling

Purposive sampling technique.

Duration of Study

6 weeks.

Method

Two coed schools were selected for the conduct of the study and a formal administrative approval was obtained from the concerned school authorities. After screening of the participants for the study's considering inclusion and exclusion criteria, the researcher gave self-introduction and explained them about the study and its goal to develop rapport with them. The selected study subjects had given informed written consent after explaining the study and on the assurance that their data would remain confidential. The standardized tool Kutcher Generalised Social Anxiety Scale for Adolescents along with a semi-structured questionnaire to gather demographic information was used to measure Social Anxiety among Adolescents of Selected Schools of Sagar, (M.P.)".

Method of Data Collection

The subjects selected under experimental group were given PMRT for fifteen minutes per day followed by discussion on the subjects regarding the therapy. This was done for ten days and on eleventh day the post test was done whereas the control group was not exposed to any intervention by the researcher but the pre and post test were conducted for both the groups on eleventh day.

Result

Table 1: Frequency and percentage distribution of demographic variables of adolescents of selected schools in the experimental and control group



N =120 (60+60)

Section A-Research paper

Demographic Variables	Experimental Group		Control Group		Chi-square Value
	No.	%	No.	%	
Age					$\chi^2=0.563$
12-13 Years	36	60.0	34	56.7	P=0.755
14-15 Years	16	26.7	15	25.0	N.S
16-17 Years	8	13.3	11	18.3	
Gender					$\chi^2=0.302$
Male	34	56.7	31	51.7	P=0.583
Female	26	43.3	29	48.3	N.S
Number of siblings					$\chi^2=0.544$
One	25	41.7	29	48.3	P=0.762
Two	20	33.3	18	30.0	N.S
More than two	15	25.0	13	21.7	
Birth order					$\chi^2=0.322$
First	36	60.0	39	65.0	P=0.851
Second	15	25.0	13	21.7	N.S
Third or more	9	15.0	8	13.3	
Socio economic status					$\chi^2=0.155$
Middle economic status	42	70.0	40	66.7	P=0.925
High economic status	10	16.7	11	18.3	

Low economic status	8	13.3	9	15.0	N.S
---------------------	---	------	---	------	-----

N.S – Not Significant

Table 1 shows the frequency and percentage distribution of demographic variables of

adolescents of selected schools in the experimental and control group.

Regarding age, majority 36(60%) in the experimental group and 34(56.7%) in the control group were aged between 12 – 13 years.

With respect to educational qualification in the experimental group, 34(56.7%) were male and 31(51.7%) in the control group were male.

In terms of number of siblings, 25(41.7%) in the experimental group and 29(48.3%) in the control group had one sibling.

With respect to birth order, 36(60%) in the experimental group and 39(65%) in the control group were first born child.

In terms of source of information, 42(70%) in the experimental group and 40(66.7%) in the control group belongs to the middle economic status.

OBJECTIVE 1 TABLE

Table 2: Frequency and percentage distribution of pretest and post test level of social anxiety among the adolescents in the experimental group

N = 60

Level of Anxiety	Pretest		Post Test	
	No.	%	No.	%
No anxiety (0 – 29)	0	0	18	30.0
Mild social anxiety (30 – 49)	0	0	31	51.67
Moderate social anxiety (50 – 64)	9	15.0	11	18.33

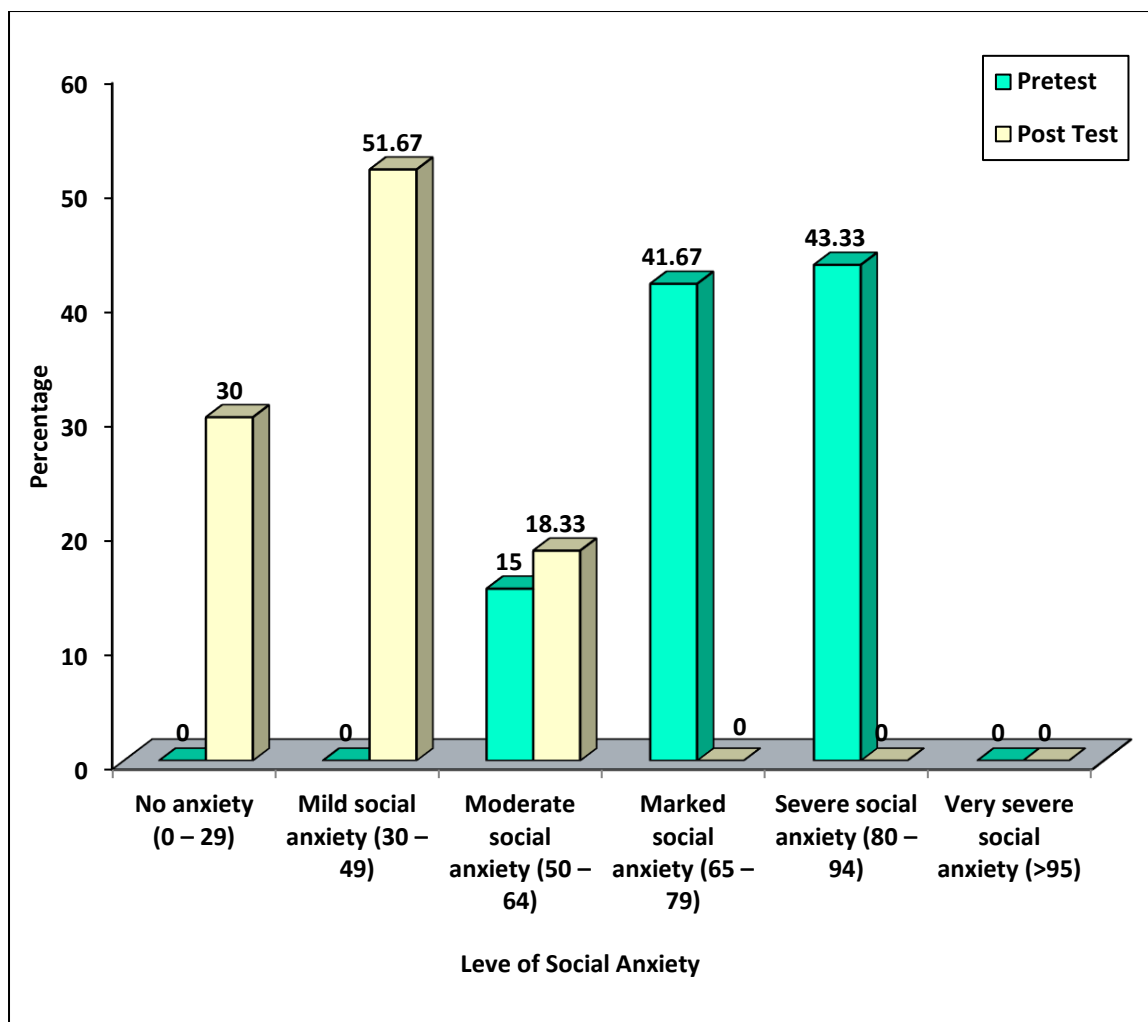
3636

Marked social anxiety (65 – 79)	25	41.67	0	0
Severe social anxiety (80 – 94)	26	43.33	0	0
Very severe social anxiety (>95)	0	0	0	0

The table 2 shows the frequency and percentage distribution of pretest and post test level of social anxiety among the adolescents in the experimental group.

It shows that in the pretest, 26(43.33%) had severe social anxiety, 25(41.67%) had severe social anxiety and 9(15%) had moderate social anxiety.

Whereas in the post test, 31(51.67%) had mild social anxiety, 18(30%) had no anxiety and 11(18.33%) had moderate social anxiety.



Percentage distribution of pretest and post test level of social anxiety among the adolescents in the experimental group

Table 3: Frequency and percentage distribution of pretest and post test level of social anxiety among the adolescents in the control group

N = 60

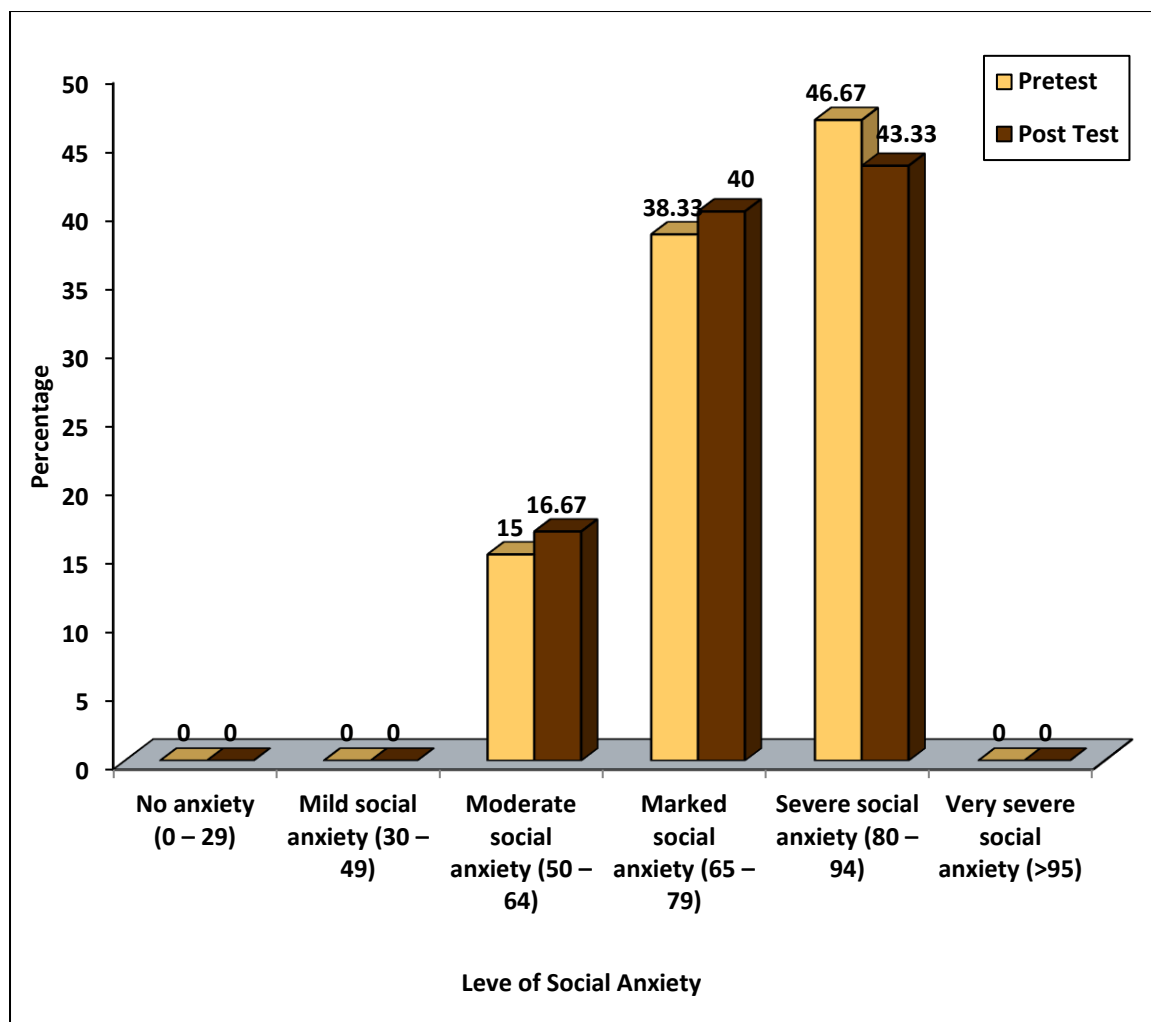
Level of Anxiety	Pretest		Post Test	
	No.	%	No.	%

No anxiety (0 – 29)	0	0	0	0
Mild social anxiety (30 – 49)	0	0	0	0
Moderate social anxiety (50 – 64)	9	15.0	10	16.67
Marked social anxiety (65 – 79)	23	38.33	24	40.0
Severe social anxiety (80 – 94)	28	46.67	26	43.33
Very severe social anxiety (>95)	0	0	0	0

The table 3 shows the frequency and percentage distribution of pretest and post test level of social anxiety among the adolescents in the control group.

It shows that in the pretest, 28(46.67%) had severe social anxiety, 23(38.33%) had marked social anxiety and 9(15%) had moderate social anxiety.

Whereas in the post test, 26(43.33) had severe social anxiety, 24(40%) had marked social anxiety and 10(16.67%) had moderate social anxiety.



Percentage distribution of pretest and post test level of social anxiety among the adolescents in the control group



OBJECTIVE 2 TABLE

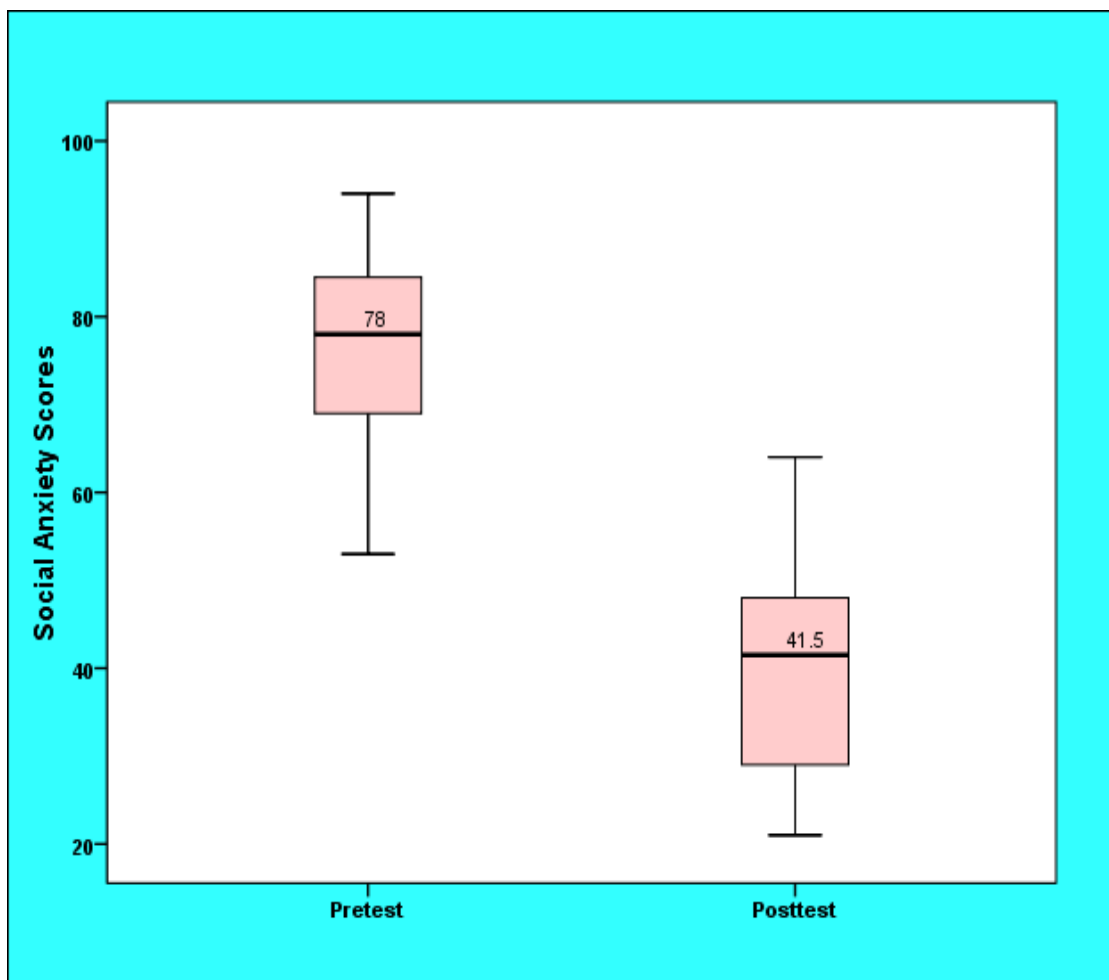
Table 4: Effectiveness of Jacobson's Muscle Relaxation Technique on social anxiety among adolescents in the experimental group

N = 60

Test	Social Anxiety		Mean reduction Score & %	Paired 't' Test & p-value
	Mean	S.D		
Pretest	76.73	10.80	35.68 (24.8%)	t = 32.328 p = 0.0001 S***
Post Test	41.05	12.16		

***p<0.001, S – Significant

The table 4 depicts that the pretest mean score of social anxiety was 76.73 ± 10.80 and post test mean score was 41.05 ± 12.16 . The mean reduction score was 35.68 i.e., 24.8%. The calculated paired 't' value of $t = 32.328$ was found to be statistically significant at $p < 0.001$ level. The above findings clearly indicate that the Jacobson's Progressive Muscle Relaxation technique in reducing the level of social anxiety administered among the adolescents found to be have positive effect which resulted in a significant reduction in the level of social anxiety among adolescents in the experimental group.



Boxplot showing the effectiveness of Jacobson's Muscle Relaxation Technique on social anxiety among adolescents in the experimental group

(Median: Pretest – 78.0, Posttest – 41.5)

OBJECTIVE 3 TABLE

Table 5: Comparison of pretest and post test social anxiety scores among adolescents in the control group

N = 60

3642



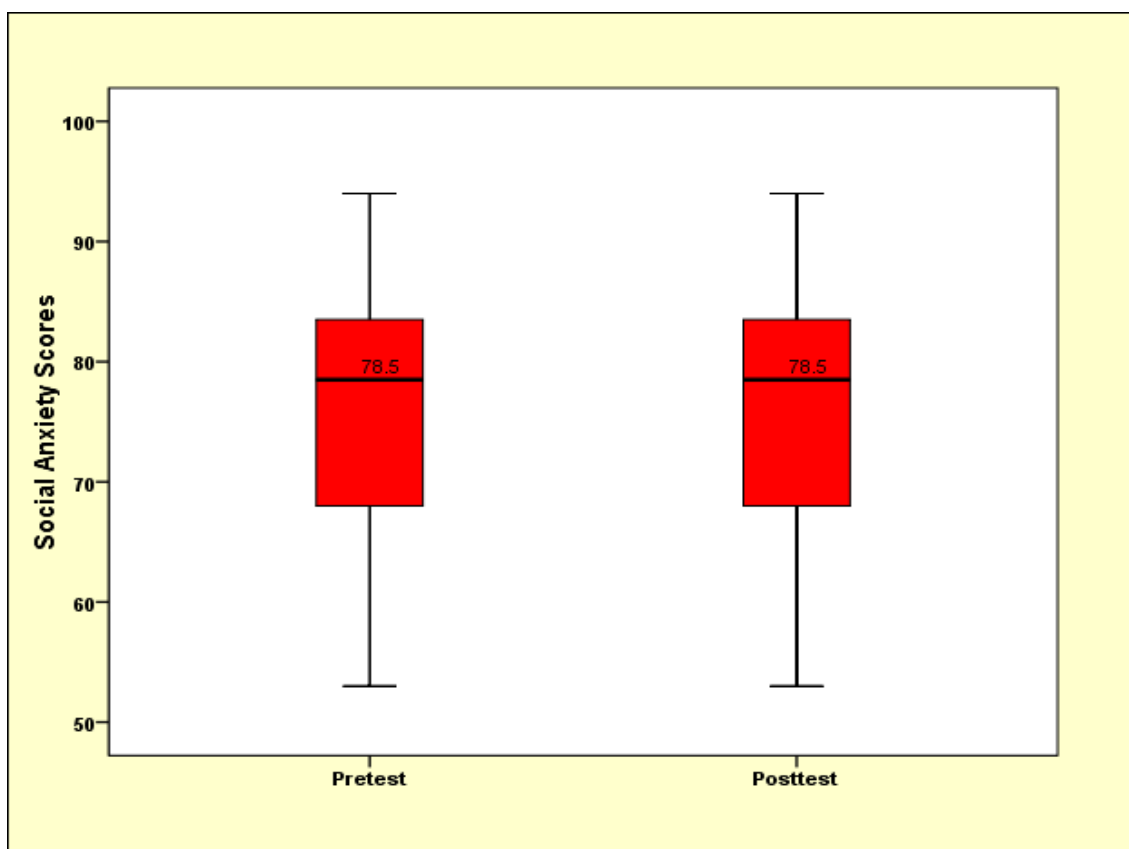
Section A-Research paper

Test	Social Anxiety		Mean reduction Score & %	Paired 't' Test & p-value
	Mean	S.D		
Pretest	76.55	10.77	0.07 (0.05%)	t = 1.657 p = 0.103 N.S
Post Test	76.48	10.78		

N.S – Not Significant

The table 5 depicts that the pretest mean score of social anxiety was 76.55 ± 10.77 and post test mean score was 76.48 ± 10.78 . The mean reduction score was 0.07 i.e., 0.05%. The calculated paired 't' value of $t = 1.657$ was not found to be statistically significant.

The above findings clearly infers that there was no statistically significant reduction between the pretest and post test mean score of social anxiety among the adolescents in the control group.



Boxplot showing the effectiveness of Jacobson's Muscle Relaxation Technique on social anxiety among adolescents in the control group

(Median: Pretest – 78.5, Posttest – 78.5)

OBJECTIVE 4 TABLE

Table 6: Comparison of pretest and post test social anxiety scores among adolescents between the experimental and control group



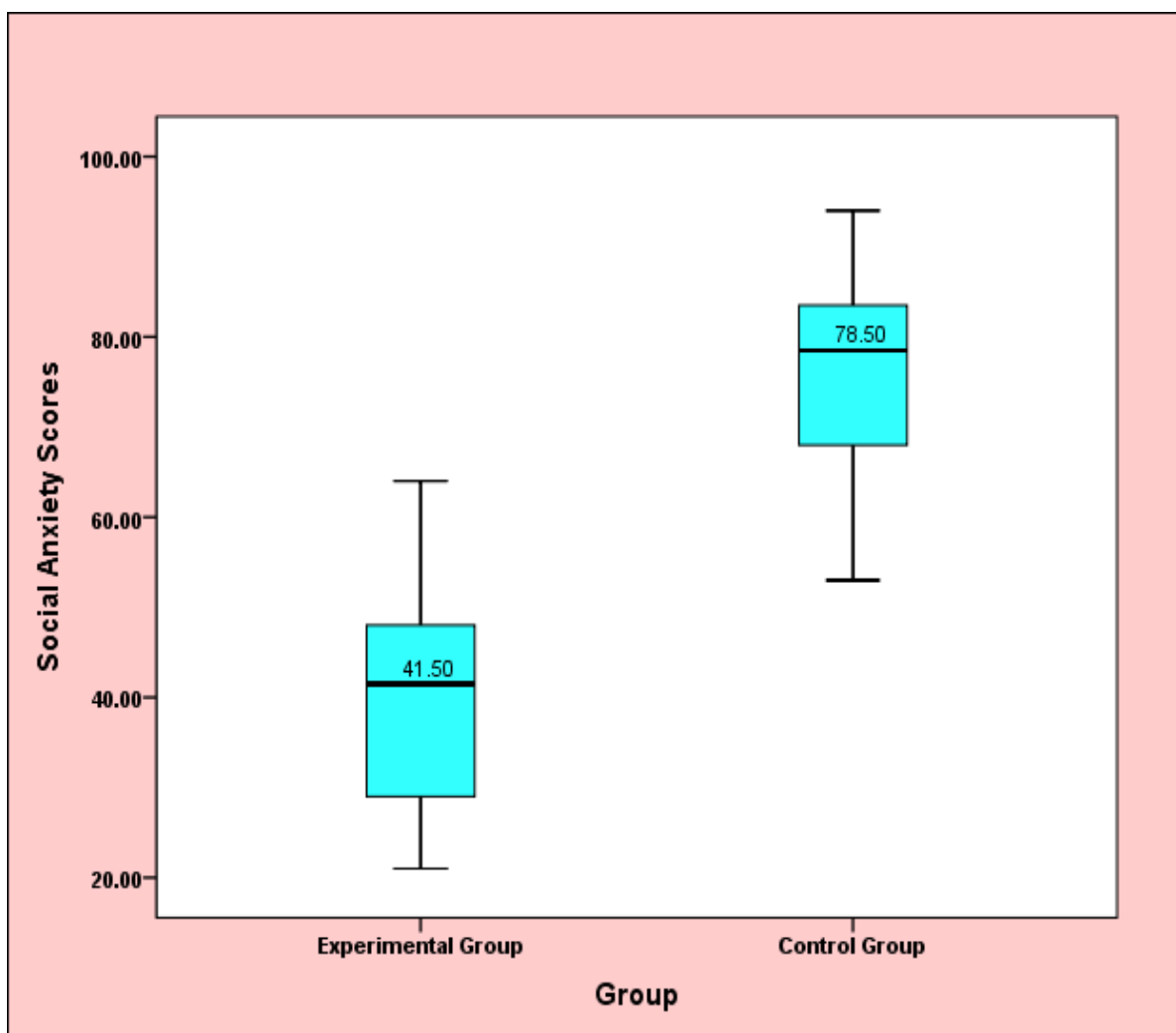
Social Anxiety	Experimental Group		Control Group		Mean Difference Score & %	Student Independent 't' Test
	Mean	S.D	Mean	S.D		
Pretest	76.73	10.80	76.55	10.77	0.18 (0.13%)	t = 0.093 p = 0.926 N.S
Post Test	41.05	12.16	76.48	10.78	35.43 (24.6%)	t = 16.888 p = 0.0001 S***

***p<0.001, S – Not Significant, N.S – Not Significant

The table 6 shows the comparison of social anxiety scores among adolescents between the experimental and control group.

The calculated student independent 't' test value $t = 0.093$ shows that there was no significant difference between the level of social anxiety among the adolescents between the experimental and control group.

The calculated student independent 't' test value $t = 16.888$ shows that there was statistically significant difference between the post test level of social anxiety after intervention among the staff nurses which was statistically significant at $p < 0.001$ level. This clearly shows that Jacobson's Progressive Muscle Relaxation technique administered among the adolescents in reduction of social anxiety was found to be effective non-pharmacological intervention and the social anxiety among the adolescents was reduced in the experimental group than the adolescents in the control group who had undergone normal daily routines.



Boxplot showing the comparison of post test social anxiety scores among adolescents between the experimental and control group

OBJECTIVE 5 TABLES

Table 7: Association of post test social anxiety score among adolescents with selected demographic variables in experimental group.



Section A-Research paper

N = 60

Demographic Variables	N	Post Test		One Way ANOVA/ t test
		Mean	S.D	
Age				F = 0.232 P = 0.794 N.S
12-13 Years	36	40.47	10.73	
14-15 Years	16	41.00	13.25	
16-17 Years	8	43.75	16.85	
Gender				t = 1.269
Male	34	39.32	12.24	P = 0.210
Female	26	43.30	11.89	N.S
Number of siblings				F = 0.081 P = 0.922 N.S
One	25	41.80	11.73	
Two	20	40.40	11.56	
More than two	15	40.66	14.27	
Birth order				F = 3.525 P = 0.036 S*
First	36	44.25	11.73	
Second	15	35.26	10.05	
Third or more	9	37.88	13.82	
Socio economic status				F = 1.227



Section A-Research paper

Middle economic status	42	42.64	12.57	P = 0.301
High economic status	10	37.80	8.68	N.S
Low economic status	8	36.75	13.12	

* $p < 0.05$, S – Significant, N.S – Not Significant

The table 7 portrays the association of post test social anxiety score among adolescents with selected demographic variables in experimental group

One way ANOVA and unpaired 't' test was computed to assess the influence of demographic variables on post test social anxiety among adolescents.

The demographic variables birth order ($F=3.525$, $p=0.036$) had statistically significant association with post test mean score of social anxiety among adolescents which was statistically significant at $p < 0.05$ level. The other demographic variables did not show statistically significant association with post test mean score of social anxiety among adolescents in the experimental group.



Table 8: Association of post test social anxiety score among adolescents with selected demographic variables in control group

N = 60

Demographic Variables	N	Post Test		One Way ANOVA/ t test
		Mean	S.D	
Age				F = 1.634 P = 0.204 N.S
12-13 Years	34	78.61	10.06	
14-15 Years	15	74.33	10.91	
16-17 Years	11	72.81	12.15	
Gender				t = 0.308
Male	31	76.06	10.35	P = 0.759
Female	29	76.93	11.38	N.S
Number of siblings				F = 0.428 P = 0.654 N.S
One	29	77.82	10.66	
Two	18	75.16	10.18	
More than two	13	75.30	12.27	
Birth order				F = 0.699 P = 0.501 N.S
First	39	77.48	10.46	
Second	13	73.38	11.35	
Third or more	8	76.62	11.89	



Section A-Research paper

Socio economic status				F = 2.095 P = 0.132 N.S
Middle economic status	40	77.42	11.49	
High economic status	11	78.45	6.47	
Low economic status	9	69.88	10.11	

N.S – Not Significant

The table 8 portrays the association of post test social anxiety score among adolescents with selected demographic variables in control group

One way ANOVA and unpaired 't' test was computed to assess the influence of demographic variables on post test social anxiety among adolescents.

The demographic variables did not show statistically significant association with post test mean score of social anxiety among adolescents in the control group.

Discussion

In the current study, the researcher evaluated the Jacobson's Progressive Muscle Relaxation Technique's efficacy. The study evaluated the adolescent's level of social anxiety as well as the efficiency of Jacobson's Progressive Muscle Relaxation.

A similar study has been done to examine the effect of progressive muscle relaxation exercise on anxiety of nursing students during their initial clinical experience. A quasi-experimental, pre-post study was carried out in the Arab American University. A convenience sample consists of 90 first-year nursing students were chosen. A progressive muscle relaxation exercise for five days per week was conducted on one group of nursing students. Students' anxiety was measured by S-anxiety scale (STAI Form Y-1) at pre and post intervention. The severity of anxiety reduction was greater in post exercise ($t(89) = 30.783, P = .001$).[5]

The findings of the present study were similar to the effects of progressive muscle relaxation (PMR)



Section A-Research paper

on anxiety, depression, and quality of life (QOL) in patients with pulmonary arterial hypertension (PAH). One hundred and thirty Han Chinese patients with PAH were randomly assigned to a PMR group ($n = 65$) and a control group ($n = 65$). In a 12-week study duration, the PMR group received hospital-based group and in-home PMR practice, while the control group received hospital-based mild group stretching and balance exercises. The control group and the PMR group were comparable at baseline. After 12 weeks of intervention, the PMR group showed significant improvement in anxiety, depression, overall QOL, and the mental component summary score of QOL ($P < 0.05$) but not the physical component summary score of QOL or the 6-minute walking distance. In contrast, the control group showed no significant improvement in any of the variables. Moreover, the PMR group showed significant improvement in all QOL mental health domains ($P < 0.05$) but not the physical health domains. In contrast, the control group showed no significant improvement in any QOL domain. In conclusion, this study suggests that PMR practice is effective in improving anxiety, depression, and the mental health components of QOL in patients with PAH.[6]

The present study is also similar to the findings of the study of Jacobson's Progressive Muscle Relaxation technique was found to be effective in reducing social anxiety by Ramani U. who conducted a quasi-experimental study with a Pre and Post-test design, took 50 samples using purposive sampling. Social anxiety was assessed using the Leibowitz social anxiety scale for children and adolescents.[7]

Conclusion

The Jacobson's Progressive Muscle Relaxation Technique was found to be beneficial in lowering social anxiety as evidenced by the fact that there was a substantial difference between the two groups' post-test anxiety scores. The adolescent's degree of social anxiety was found to have decreased, and the demonstration helped them improve their performance while calming their worry.

Conflict of Interest: None

References



Section A-Research paper

1. Didacus HG, Bharadwaj U, Mancheri N. A Quasi-Experimental Study to Assess the Effectiveness of Jacobson's Progressive Muscle Relaxation Technique on Social Anxiety among Adolescent Girls of Selected Schools of Kashipur, Uttarakhand. *Int J Nurs Midwif Res* 2019; 6(2&3): 12-16.
2. Khan AA, Sultan A, Jan FA. Effects of perceived stressors and psychiatric morbidity on academic performance of University students. *Journal of Management Info* 2014; 4(1): 147-156.
3. Anxiety Canada. *Child and Teen Social Child Anxiety disorder*, Canada, 2007. Available from: [https:// anxietycanada.com/learn-about-anxiety/anxiety-inchildren/](https://anxietycanada.com/learn-about-anxiety/anxiety-inchildren/).
4. Gupta K, Semwal J, Sharma N, Srivastava A, Vyas S. Do social phobia and depression go hand in hand? A cross-sectional study among school-going adolescents of Northern region of India. *J Edu Health Promot* 2022;11:321
5. Toqan et al., Effect of Progressive Muscle Relaxation Exercise on Anxiety Reduction Among Nursing Students During Their Initial Clinical Training: A Quasi-Experimental Study, *The Journal of Health Care Organization, Provision, and Financing* Volume 59: 1–7.
6. Li Yunping et al., Progressive Muscle Relaxation Improves Anxiety and Depression of Pulmonary Arterial Hypertension Patients, Hindawi Publishing Corporation Evidence-Based Complementary and Alternative Medicine Volume 2015, Article ID 792895, 8 pages.
7. Ramani U. Effectiveness of progressive muscle relaxation technique. M.Sc thesis, Tamil Nadu, Dr. MDR Medical University, 2012.

Scoring

The scale is composed of 24 items divided into 2 subscales, 13 concerning performance anxiety, and 11 pertaining to social situations. The 24 items are first rated on a [Likert Scale](#) from 0 to 3 on fear felt



Section A-Research paper

during the situations, and then the same items are rated regarding avoidance of the situation.^[7] Combining the total scores for the Fear and Avoidance sections provides an overall score with a maximum of 144 points. The clinician administered version of the test has four more subscale scores, which the self-administered test does not have. These additional four subscales are: fear of social interaction, fear of performance, avoidance of social interaction and avoidance of performance. Usually, the sum of the total fear and total avoidance scores are used in determining the final score (thus, essentially it uses the same numbers as the self-administered test). Research supports a cut-off point of **30**, in which SAD is unlikely. The next cut-off point is at **60**, at which SAD is probable. Scores in this range are typical of persons entering treatment for the non-generalized type of SAD. Scores between **60 and 90** indicate that SAD is very probable. Scores in this range are typical of persons entering treatment for the generalized type of SAD. Scores higher than **90** indicates that SAD is highly probable. Scores in this range often are accompanied by great distress and difficulty in social functioning, and are also commonly seen in persons entering treatment for the generalized type of SAD.

The scoring scale:

- 0-29 You do not suffer from social anxiety
- 30-49 Mild social anxiety
- 50-64 Moderate social anxiety
- 65-79 Marked social anxiety
- 80-94 Severe social anxiety
- > 95 Very severe social anxiety