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## RESEARCH ARTICLE

# EFFECTIVENESS OF SYSTEMATIC MUSCLE RELAXATION TECHNIQUE ON ANXIETY AMONG SCHOOL STUDENTS

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### ABSTRACT

A quasi experimental study was conducted to help the adolescents to overcome from the anxiety situations by administering them Systematic Muscle Relaxation Technique from 17<sup>th</sup> December 2014 to 31<sup>st</sup> December 2014. Sixty seven school students (thirty three in experimental and thirty four in control group) who fulfilled the inclusion criteria were selected as sample by simple random sampling technique and they were assigned randomly to experimental and control group. The data were collected by using modified SCARED tool to assess anxiety among school students. Intervention was given in the form of systematic muscle relaxation technique to experimental group for 30 minutes a week daily by a specialized yoga teacher. It was showed that the mean anxiety score in experimental group was decreased with  $p=0.01$ , whereas in control group although there is a reduction in mean anxiety score but it was not statistically significant ( $p=.105$ ) which indicate that reduction in mean anxiety score was not by chance but due to the intervention given.

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## INTRODUCTION

Adolescence is a significant period in the life span, a period with a myriad of changes both physical and psychological. It includes an alteration in body image, adaptation to more mature intellectual abilities, adjustment to society's demands for behaviour maturity, internalizing a personal value system and preparing for adult roles. During this period, the adolescent's status is vague, and there is confusion about the roles he is expected to play, as at this time, he is neither a child nor an adult. In search to define, find or discover their new life, they land into conflicts, confusion, frustration and anxiety. If these children are left untreated, they face different risks such as poor results at school, avoidance of important social activities, and substance abuse. Children who suffer from an anxiety disorder are likely to suffer other disorders such as depression, eating disorders, and attention deficit disorders, both hyperactive and inattentive. If these children are left untreated, they face different risks such as poor results at school, avoidance of important social activities, and substance abuse.

Higher secondary students belong to the adolescent age group. These time period is one of the most vulnerable periods in their life.

### NEED OF THE STUDY

According to American Association of Anxiety and Depression the onset age is 13yrs, 80% cases developed by the age of 20 yrs with 50% by 12 yrs of age, which clearly indicates half of the total incidences occurring after 13 yrs of age. Child and Adolescent mental health problems are estimated at 128/1000 child population (10–16 years) based on the methodologically better WHO study, or 43/1000 population of all ages. Statistics shows that anxiety effect 1 in 8 children. Researches shows that untreated children perform poorly in schools and miss important social experiences, social gatherings and leads to substances abuse. Since as of now very less work has been done in the field of anxiety in India, especially in Adolescents, so this study will help in collecting the data and analyzing the incidences of anxiety.

Best preventive strategy is early identification of children with effective techniques which assist in their social development. Since a very limited number of studies have addressed anxiety among school-aged children and adolescents in India, and because of the seriousness of its adverse consequences, it was considered important to explore this issue further. This study is conducted to identify the presence of anxiety among higher school students with the help of Modified SCARED Tool for Anxiety and to assess the effectiveness of Systematic Muscle Relaxation Technique for reducing anxiety. The advantages of this treatment are its low cost and convenience.

## PROBLEM STATEMENT

A study to assess the effectiveness of systematic muscle relaxation technique on anxiety among school students in a selected school of dehradun, Uttarakhand.

## OBJECTIVES OF THE STUDY

- To assess the pre interventional anxiety among school students.
- To compare the effectiveness of systematic muscle relaxation technique on anxiety among control group and experimental group.
- To find association between pre anxiety score and socio demographic variables.

## HYPOTHESIS

### Hypotheses was tested at 0.05 level of significance

**H1:** The mean post intervention anxiety score of school students would be significantly lower than the mean of their pre intervention anxiety score among school students.

**H2:** There would be significant association between pre intervention anxiety score of students with their baseline data.

## CONCEPTUAL FRAMEWORK

The conceptual framework adopted for the present study is Sister Callista Roy adaptation model (1970) which is based on General System Theory.

## MATERIAL AND METHOD

A quantitative research study with Quasi Experimental research design was carried out in dehradun district from during 17<sup>th</sup> to 31<sup>st</sup> December 2014 to assess the effectiveness of systematic muscle relaxation technique on anxiety among school students. The study sample comprises of sixty seven school students who were screened out for having anxiety with the help of modified SCARED tool, in a selected school of dehradun. Simple random sampling technique was used to select the sample. The sample size for the study was 118 school students studying in schools of dehradun. The inclusion criteria -1) school students found to have anxiety; 2) School students in the age group of 12 to 17 years of age; 3) school students who were able to follow the instructions in Hindi. Tool used for the study was sociodemographic data to collect the personal characteristics of participants and Tool 2 was modified Screen For Childhood Anxiety Related Disorder to assess anxiety.

Before the conduction of study formal administrative permission was obtained from principal himalyan college of nursing, srhu. written permission was obtained from the principal doon public school bhaniyawala dehradun. The study subjects were approached, the purpose of the study was explained to them and their consent for participation was obtained. Data was analyzed by using inferential and descriptive statistics.

## RESULTS

The frequency percentage wise distribution showed that majority of subjects ( 71%) were in the age group of 15-17 yrs. Majority of subjects were male (71%).Most of mother's qualification were graduate (46.8%). (53.2 %) of subject's father's were graduates. 74.2 % of mothers of the subjects were unemployed or homemaker. Most of the subjects were residing in the urban area (54.8%). Independent t test was performed to find the difference between the experimental and control group. Participants in experimental and control group were homogenous except in terms of gender (.025), occupation of mother (0.02). It showed that there was significant reduction in mean anxiety score from  $42.26 \pm 4.2$  to  $24.1 \pm 3.4$  at 7 day interval after initiation of intervention ( $p < 0.001$ ,  $t = 9.8$ ) therefore research hypothesis is accepted. It shows there was significant reduction in mean anxiety score from  $44.19 \pm 5.4$  to  $41.7 \pm 4.2$  at 7 day interval after initiation of intervention ( $p < 0.105$ ,  $t = 1.6$ ). It can be interpreted that there is no significant difference in the post anxiety score of subjects since intervention has not been given to this group. It shows that there was significant reduction in the post anxiety score of experimental group as compared to the control group i.e  $24.2 \pm 3.4$  and  $41.7 \pm 4.2$  respectively at  $p < 0.05$ ,  $t = 8.36$ . Thus it can be interpreted that there is reduction in the post anxiety score in experimental group as compared to the control group which is not by chance but due to the intervention given. It shows significant association between educational qualification of father (7.16) ,with pre anxiety score as measured at  $p < 0.05$  level of significance. Thus it could be inferred that demographic variables such as age, gender, occupation of mother, dietary pattern, family income, residence , birth order were not having any significant association with pre anxiety score of the subjects except educational qualification of father with pre anxiety score of the subjects.

## DISCUSSION

The Independent t test revealed that there was significant difference between mean pre anxiety score and mean post anxiety score. There was significant reduction in the post anxiety score of experimental group as compared to the control group i.e.  $24.2 \pm 3.4$  and  $41.7 \pm 4.2$  respectively. Since the calculated t value (8.36) is more than the tabulated value (2.0) at  $p < 0.05$  level of significance, hence the score indicates that there was significance difference between post interventional anxiety score of experimental and control group at  $p < 0.05$  level. Hence the researcher rejects the null hypothesis and accepted alternative hypothesis which indicates that the reduction in anxiety in experimental group was not by chance but because of the intervention. Therefore it can be concluded that systematic muscle relaxation technique was effective in reducing anxiety of adolescents. The results was supported by the findings of an experimental study was conducted by Joy et al (2004, Karnataka, India) to assess the effectiveness of

**Table 1. Socio Demographic data of the school students**

Characteristics	Exp group n=31		Control group n=31		Total		p value*
	f	%	F	%	f	%	
Age (in Years)							
12-14 years	08	23	10	21	18	29	.583
15-17 years		74		68	44	71	
Gender							
Male	18	60	26	83.9	44	71	.025
Female	13	40	05	16.1	18	29	
Educational Qualification(mother)							
Post grad	05	16.1	04	12.9	14	14.5	0.06
Grad	13	41.9	16	51.6	33	46.8	
Till 12 <sup>th</sup>	11	35.5	08	25.8	15	30.6	
>10 <sup>th</sup>	02	6.5	03	9.7		8.1	
Educational qualification(father)							
Post grad					27		.098
Grad	05	16.1	09	29	15	22.6	
Till 12 <sup>th</sup>	16	51.6	17	54.8	20	53.2	
	10	32.3	05	16.1		24.2	
Occupation(father)							
Gov	16	51.6	11	35.5	16	43.5	.541
Self	04	12.9	11	35.5	46	21.0	
Private	11	35.5	09	29.0		34.5	
Occupation(mother)							
Employed	12	38.7	04	12.9	31	25.8	.020
Unemployed	19	61.3	27	87.1	1120	74.2	
Class in which studying							
Ninth	17	54.8	14	45.2	29	50.1	.261
Tenth	03	9.7	08	25.8	21	17.7	
Eleventh	11	35.5	09	29.0	06	32.2	
Monthly income(in Rs)							
17500 and more	15	48.4	14	45.2	25	46.8	.089
8760-17500	09	29	12	38.7	37	33.9	
4380-8750	04	12.9	02	6.5		9.7	
885-4370	03	9.7	03	9.7		9.7	
Dietary pattern							
Vegetarian	10	32.3	15	48.4	34	40.3	.202
Non vegetarian	21	67.7	16	51.6	28	59.7	
Residence							
Urban	08	74.2	26	83.9	29	54.8	.357
Rural	23	25.8	05	16.1	24	45.1	
No of siblings							
One	13	41.9	16	51.6	29	46.7	.159
Two	11	35.5	13	41.9	10	38.7	
3 or more	07	22.6	02	6.5	23	14.5	
Birth order							
Elder	14	45.2	15	48.4			.228
Middle	06	19.4	04	12.9			
Younger	11	35.5	12	38.7			

**Table No 2. Effectiveness of systematic muscle relaxation technique in experimental group**

N=31					
GROUP	Pre anxiety score	Post anxiety score	t <sub>cal</sub>	df	p value*
Experimental	42.26 ± 4.2	24.1 ± 3.4	9.8	30	.001

Minimum score =0 ttab =2.04 \* significant Maximumscore=100

**Table No.3.Effectiveness of systematic muscle relaxation technique in control group**

N=31					
GROUP	Pre anxiety Score	Post anxiety score	t <sub>cal</sub>	df	p value*
Control	44.19 ± 5.4	41.7 ± 4.2	1.6	30	.105

Minimum score=0 ttab=2.04 \*Non significant Maximum score=100

Table 4. Comparison of post anxiety score in experimental and control group

Anxiety score Mean $\pm$ SD		d.f	$t_{cal}$	$t_{tab}$	p value
EXP	CONTROL				
24.2 $\pm$ 3.4	41.7 $\pm$ 4.2	60	8.36	2.0	0.05

CI (95%)

N=62

Table No 5. Association between pre anxiety score of subjects with socio demographic variables in experimental and control group

Characteristics	Below Median (< 41)	At /above median ( $\geq$ 41)	$\chi^2$ value	tabulated value	p value
Age					
12-14	06	12	.771	3.84	0.37
15-17	20	24			
Gender					
Male	19	25	.097	3.84	0.076
Female	07	11			
Educational qualification(m)					
Grad and above	21	26	.607	3.84	0.43
Till 12 <sup>th</sup>	05	10			
Educational qualification (f)					
Grad and above	21	17	7.16	5.99	0.007
Till 12 <sup>th</sup>	05	19			
Occupation(f)					
Government	14	13	5.321	5.99	0.06
Self	05	03			
Private	07	20			
Occupation(m)					
Employed	08	08	0.57	3.84	0.44
Unemployed	18	28			

\*Significant  $p < 0.05$ 

Jacobson's Progressive Muscle Relaxation (JPMR) technique on social anxiety among high school adolescents studying in selected school of udupi district, Karnataka state. Main objective of the study was to identify the adolescents with social anxiety and teach the JPMR technique to those who would score high on social anxiety scale.

The study population were school students between the age group of 12-14 years. Non probability purposive sampling was adopted. Evaluative approach with one group pre test post test design was used for the study. It was found that 52 (27%) adolescents were having moderate social anxiety and there was significant association ( $p < 0.05$ ) between age of the adolescents and social anxiety. The Jacobson's Progressive Muscle Relaxation Technique was found to be effective ( $t = 10.646$ ,  $df = 39$ ,  $p = 0.001$ ) in reducing the social anxiety.

## IMPLICATIONS

- The study findings will help the future researchers to conduct researches on focused high risk groups and to prevent pediatrics as well as adult psychiatric disorders.
- Nurses, teachers working in hospitals and schools respectively should be able to identify anxiety and must be skillful to manage it properly.
- Parent education can be conducted for maintaining good child parent relationship.
- Nurse administrator can provide in service education programmes for the staff nurses who are working in psychiatric wards and pediatric OPD on assessment and management of anxiety among adolescents.

## RECOMMENDATION

- Awareness programme can be conducted for students as well as teachers for reducing the number of undiagnosed and untreated cases.
- Further researches can be conducted by increasing the sample size.
- Similar study can be conducted with more effective Research Design.

## CONCLUSION

This study showed that Systematic Muscle Relaxation Technique is an effective way to reduce anxiety among adolescent, as there was reduction in experimental group. Therefore this intervention can be used in reducing the anxiety arises due to the pressure to perform well in exams, maintaining peer group relationship etc. Systematic muscle relaxation technique can be offered to every adolescent who have anxiety as treatment until and unless they have any stated medical illness.

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