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EFFECT OF RELAXATION TECHNIQUES ON STRESS REDUCTION AMONG ADOLESCENTS OF SELECTED RURAL PRE-UNIVERSITY COLLEGES (PUC) OF MANGALORE TALUK

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Abstract

Adolescents are the citizens, leaders, parents and workers of our global future. They are considered to be healthy since mortality in this age group is relatively low. But, the adolescents do have a range of problems, one of which is stress! The adolescent years are the most stressful times in a person's life. In such unsettling moments, it is often forgotten that stressors, if not escapable, are fairly manageable and treatable. This study sought to study the effect of relaxation techniques on stress reduction among adolescents of selected rural Pre-University colleges (PUC) of Mangalore Taluk. Results revealed that the mean percentage of post-test stress score (21.17) was lower than the pre-test stress score (40.44) in experimental group which was significant at 0.05 level of significance. The statistical analysis showed a significant reduction in the stress level of adolescents in the experimental group after the introduction of relaxation techniques ($t=8.36$, $df=19$, $p<0.05$). The findings of the study supported that relaxation techniques were effective in reducing stress of adolescents.

Keywords: Stress, Adolescents, Relaxation Techniques

“Stressed are desserts, when spelled backwards” - Anonymous

INTRODUCTION

Adolescence, the second decade of life is a period of transition between childhood and adulthood – 10 to 19 years. Adults commonly tell young people that the teenage years are the “best years of your life.” The rosy remembrance highlights happy groups of high school students energetically involved at a dance or sporting event, and a bright-eyed couple holding hands or sipping sodas at a local restaurant. This is only part of the picture. Life for many young people is a painful tug of war filled with mixed messages and conflicting demands from parents, teachers, coaches, employers, friends and oneself. Growing up—negotiating a path between independence and reliance on others—is a tough business. It creates stress and it can create serious depression for young people ill-equipped to cope, communicate and solve problems.

OBJECTIVES OF THE STUDY

1. To assess the level of stress among adolescents in the experimental and control group.
2. To find the effect of relaxation techniques in terms of reduction in stress scores in experimental group
3. To compare the level of stress among adolescents between experimental and control group after administration of relaxation techniques.

HYPOTHESES OF THE STUDY

1. There will be significant difference between the mean pre- and post-test stress scores of experimental group.
2. There will be significant difference between mean post-test stress scores of experimental and control group.

REVIEW OF RELATED LITERATURE:

According to the World Health Organisation Report, worldwide – 66 million suffer from depression, 24 million from alcohol related problems, 1 million people commit suicide each year, rates for attempted suicide are 10 – 20 times higher, 1 in 4 people is affected by mental or neurological disorders at some point of his or her life

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which means such disorders are the fourth leading cause of ill health and disability worldwide. Mental disorders are expected to rank second cause of morbidity by 2020, behind ischemic heart disease.

Fred T(2009) conducted a study at Maharishi University of Management (MUM) Brain Research Centre which revealed that pressures of stress can be overwhelming – 44% of college students today binge drink, 37% report use of illegal drugs, 19% report clinical depression, and 13% report high level of anxiety. Indications are there that 75% of human diseases are caused by stress experienced by people.

METHODOLOGY

A Quasi experimental (non-equivalent control group before-after) design with evaluative research approach was used for the study. The study was carried out in two rural pre-university colleges of Dakshina Kannada in Mangalore. Adolescents from one pre-university College served as the experimental group and those from the other served as the control group. The sample consisted of forty adolescents – twenty in the experimental group and twenty in the control group selected by purposive sampling technique.

Tools Used:

The data collection instruments were prepared by the investigator and validated by 16 experts. Reliability was 0.9, established by using Cronbach's Alpha formula, which proved that the tool was reliable. The details of the tool are as follows:

Stress assessment rating scale: [Domains: Physical (33%), Psychological (16.7%), Academic (50%)]

{Part I: baseline characteristics with 8 items and Part II: stress assessment rating scale with 30 items}

Opinionnaire: regarding relaxation techniques with 8 items.

Scoring Procedure and Interpretation:

All the 30 statements were negative statements with responses 'always,' 'sometimes,' 'rarely' and 'never' and the weightage given for the responses was 3, 2, 1 and 0, respectively. The scores were graded as: 0 score = no stress, 1- 30 = mild stress, 31 – 60 = moderate stress, 61 – 90 = Severe stress.

Techniques of Relaxation Techniques:

The investigator underwent 24 days' training in integral yoga from Integral Yoga Satsanga, Mangalore. The relaxation techniques used for the study were: Shavasana I and II, Swatikasana, Vajrasana, Trikonasana, Pavanamuktasana, Bhujangasana, Anulomaviloma, Brahmari, and breath awareness.

Data Collection Process:

Written permission was obtained from the concerned authorities. Pre-test was conducted for both the groups using the stress assessment rating scale to assess their level of stress.

Following the pre-test, a motivational talk on stress management was given and the relaxation techniques were taught to the experimental group whereas the control group was kept as delayed treatment group. The adolescents (experimental group) practised relaxation techniques in the common hall daily for 20 minutes for 15 days under the supervision of the investigator. The post-test was conducted on 16th day with the same rating scale in both the experimental and control group. After the study, relaxation techniques were taught and a leaflet with the details of the relaxation techniques was provided to the control group.

ANALYSIS AND INTERPRETATION OF THE DATA

SECTION I: *Baseline Characteristics*

- Majority (55%) of the adolescents in the experimental group were females while 45% were males. Most (80%) of the adolescents in the control group were females while 20% were males.
- Majority (60%) of adolescents in the experimental group and 75% in the control group were in the age group 16-17 years.



- Highest (30%) percentage of adolescents from the experimental group was last born and that from the control group (50) were second born.
- Half of the adolescents in the experimental group were from nuclear families whereas half of adolescents from control group were from joint families.
 - None of the adolescents practised any relaxation techniques like yoga or meditation.

SECTION II: *Level of Stress among Adolescents in Experimental Group and Control Group before Administration of Relaxation Techniques*

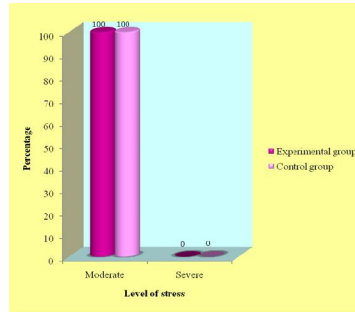


Figure 1. Percentage Distribution of Adolescents According to Pre-intervention Stress Scores

All adolescents in the experimental and control group had moderate level of stress.

Table 1. Area-wise Pre-intervention Stress Scores of Adolescents

n=20+20

Domain	Experimental group			Control group		
	Mean	SD	Mean%	Mean	SD	Mean%
Psychological	12	3.418	40.00	13.84	2.115	46.13
Physical	5.2	2.726	34.67	5.42	1.261	36.13
Academic	19.2	4.275	42.67	17.53	2.412	38.95

Maximum Score = 90

The stress scores of adolescents in the experimental group was highest (42.67%) in the ‘academic’ domain whereas in the control group it was highest (46.13%) in the ‘psychological’ domain.

Table 2. Frequency, Frequency Percentage and Cumulative Frequency Percentage Distribution of Pre-intervention Stress Scores of Experimental and Control Group

n = 20+20

Grading of stress	Stress score	Experimental group			Control group		
		f	%	cf%	f	%	cf%
Moderate	30 - 35	8	40	40	6	30	30
	35 - 40	8	40	80	8	40	70
	40 - 45	3	15	95	6	30	100
	45 - 50	1	5	100			

Maximum score = 90



The following ogive shows that the ogive of the experimental group lies slightly to the left of the ogive of the control group over most of the range. The 50th percentile shows that the median stress score of experimental group (36.25) was slightly less than that of the control group (37.5).

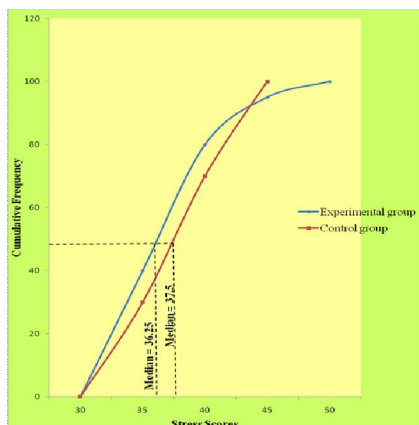


Figure 2. Ogive Representing the Pre-intervention Stress Scores of Adolescents

SECTION III: Level of Stress among Adolescents in Experimental Group and Control Group after the Intervention

Table 3. Distribution of Adolescents as per the Level of Stress after Administration of Relaxation Techniques
n = 20+20

Grading of stress score	Range	Range in percentage	Experimental group		Control group	
			Frequency	Percentage	Frequency	Percentage
No Stress	0	0	-	-	-	-
Mild	1 – 30	1 – 33	17	85	5	25
Moderate	31- 60	34 – 67	3	15	15	75
Severe	61 – 90	68 – 100	-	-	-	-

Maximum score = 90

After the intervention, majority (85%) of the adolescents in the experimental group had mild stress and few (15%) adolescents had moderate stress. In the control group, 25% of the adolescents had mild stress and 75% had moderate stress.

Area-wise Post-intervention Stress Scores of Adolescents

Table 4. Distribution of Area-wise Post-intervention Stress Scores of Adolescents
n=20+20

Domain	Experimental group			Control group		
	Mean	SD	Mean%	Mean	SD	Mean%
Psychological	6.00	3.713	20.00	12.95	3.677	43.17
Physical	3.00	2.103	20.00	6.75	2.573	45.00
Academic	10.05	5.605	22.33	16.20	4.514	36.00

Maximum score = 90



The comparison of the stress scores showed marked reduction in all the areas in experimental group.

Table 5. Frequency, Frequency Percentage and Cumulative Frequency Percentage of Post-intervention Stress Scores of Experimental and Control Group

n = 20+20

Grading of stress	Stress score	Experimental group			Control group		
		F	%	cf%	f	%	cf%
Mild	0 – 5	1	5	5	-	-	-
	5 – 10	2	10	15	-	-	-
	10 – 15	3	15	30	-	-	-
	15 – 20	7	35	65	-	-	-
	20 – 25	1	5	70	1	5	5
	25 – 30	3	15	85	3	15	20
Moderate	30 – 35	1	5	90	5	25	45
	35 – 40	2	10	100	7	35	80
	40 – 45	-	-	-	1	5	85
	45 - 50	-	-	-	2	10	95
	50 – 55	-	-	-	-	-	95
	55 – 60	-	-	-	1	5	100

Maximum score = 90

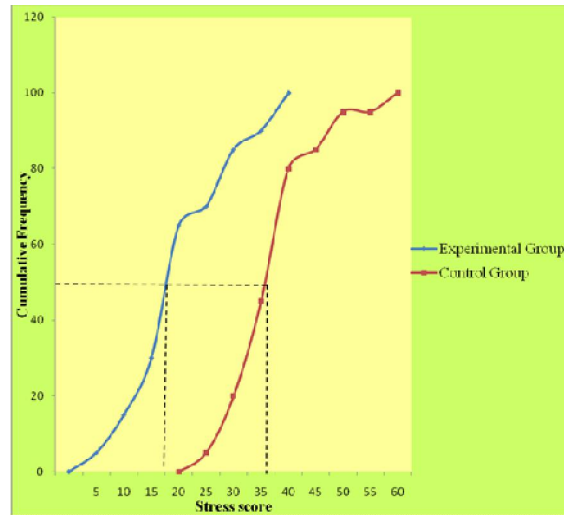


Figure 3. Ogive Representing Post-intervention Stress Scores of Adolescents

The ogive shows that the ogive of the experimental group lies more towards the left of the ogive of the control group over the entire range showing that relaxation techniques were effective in reducing the level of stress of the adolescents in the experimental group. The 50th percentile shows that the median stress score of experimental group (17.857) was less than that of the control group (35.71). This indicates that there was significant difference found between the post-intervention stress scores of experimental and control group.

SECTION IV: *Effect of Relaxation Techniques in Terms of Reduction in Stress Scores in Experimental Group*



Table 6. Mean, Mean Difference, Standard Deviation and 't' Value of Pre- and Post-intervention Stress Scores of Adolescents in the Experimental Group

n= 20+20

Group	Mean		Mean difference	SD		t value
	Pre-test	Post-test		Pre-test	Post-test	
Experimental group	36.40	19.05	17.35	4.795	9.561	8.36*

$t_{19}=1.730, p<0.05$ * Significant

Paired 't' test was applied to find out the significant difference between pre- test and post-test stress scores of experimental group. The calculated 't' value (8.36) was higher than the table value (1.730) at 0.05 level of significance. Therefore, the null hypothesis is rejected and research hypothesis 1 is accepted. The findings suggest that there was significant reduction in stress scores of experimental group after introducing relaxation techniques.

SECTION V: *Comparison of the Level of Stress among Adolescents in Experimental Group and Control Group after the Intervention*

Table 7. Range, Mean, Median and Standard Deviation of Pre-intervention and Post- intervention Stress Scores of Experimental and Control Group

n= 20 +20

Inference↓	Experimental		Control	
	Pre-test	Post- test	Pre- test	Post- test
Mean	36.40	19.05	36.78	35.90
Median	36.00	16.50	37.50	35.50
SD	4.79	9.56	3.58	7.85
Mean%	40.44	21.17	40.61	39.89

Maximum score = 90

Data in Table 7 shows that the mean percentage of post-test stress score (21.17%) was lower than the pre-test stress scores in the experimental group, while the pre- and post-test stress scores in the control group remained almost same.

Table 8. Mean, Mean Difference, Standard Deviation, and 't' Value of Post-intervention Stress Scores

n = 20+20

Group	Mean of difference		Mean difference	SD of difference		t value
	Experimental	Control		Experimental	Control	
Adolescents	17.35	0.65	16.7	9.281	8.54	6.383*

$t_{38}=1.690, p<0.05$

* Significant

The calculated 't' value (6.383) was higher than the table value (1.690) at 0.05 level of significance. This indicates that relaxation techniques were effective in reducing the stress of the adolescents in the experimental group. Therefore, it can be inferred that relaxation techniques were effective in reducing the stress among adolescents of rural pre-university colleges.



SECTION VI: *Acceptability of Relaxation Techniques*

Table 9. Frequency and Mean Percentage of Acceptance for Relaxation Techniques
 n = 20+20

Si. No.	Statements	Disagree		Agree		Strongly agree	
		f	%	f	%	F	%
1	It helps in relaxation of body and mind			6	30	14	70
2	It controls anger	1	5	6	30	13	65
3	It increases concentration			3	15	17	85
4	It has strengthened my abilities			7	35	13	65
5	It provides sense of freshness			8	40	12	60
6	It helps in relieving stress	1	5	7	35	12	60
7	It helps to maintain enthusiasm			7	35	13	65
8	It helps to maintain good relationship with others			7	35	13	65

The overall mean percentage of the opinionnaire was 82.81% which indicates adolescents had a good opinion

CONCLUSION

Adolescents are found as frequent victims of stress who are often unable to communicate their feelings accurately. They require special emphasis on positive mental health and coping ability.

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