

## Stress Management among Adolescents

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### ABSTRACT

Childhood experiences deeply influence a young person and profoundly affect emotional and physical health later in life. The present study aims to determine the stress and the stress manifestations among adolescents (N= 46), and the effect of Progressive Muscle Relaxation Technique on stress. Data were collected using stress rating scale and stress manifestation checklist from adolescents (N= 46) who were selected through convenience sampling from a selected school in Udupi, Karnataka. Results revealed that majority of adolescents (63%) experienced moderate stress specifically in the interpersonal domain. Psychological manifestations were more and depression (70%) was the most common manifestation experienced. Analysis using paired sample t test showed that there was significant reduction in stress and stress manifestations after the intervention revealing the effectiveness of Progressive Muscle Relaxation Technique on stress. Results suggest the need for early recognition and management of adolescent stress.

**Keywords:** *Adverse childhood experiences, Stress, Progressive muscle relaxation, Adolescence, Stressors, Mental health*

Stress is a way of life in the present world. Childhood experiences deeply influence an individual and profoundly affect emotional and physical health later in life. It is learnt that childhood adversities and the associated stress are very common and early trauma and stress lead to predictable patterns of brain development, traits and behaviours. Adolescence is the transition period between childhood and adulthood and it is a period of stress and strain (Byrne, Davenport, & Mazanov, 2007).

A number of biologic and environmental stressors such as demands of school, physiologic changes, and adversities like family conflicts and responsibilities, and an uncertain future place adolescents at risk for emotional problems (Lamb, Puskar, Sereika & Corcoran, 1998). The impact of unresolved stress may be manifested as depression, eating disorders, elimination disorders, suicidal behaviour and dissociative disorders (Bhola & Kapur, 2000), anxiety, poor concentration, aggression, physical illness, substance abuse etc. Identification of adolescents' stress and stressors is very important and helpful for planning and implementing health promotion as well as prevention programmes in the natural setting of the school. Interventions to

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manage stress include relaxation techniques which require little effort and may be used at any time. There are several forms of relaxation techniques that include a number of practices such as progressive relaxation, guided imagery, biofeedback, self-hypnosis, deep breathing exercises etc. Adolescents are often helped by interventions to deal constructively with stressors in their lives. It is very much necessary to understand the stressors faced by them and their management of stress. A self controlled stress management technique such as relaxation technique that adolescents can use themselves is thought to be very much beneficial for them. Progressive Muscle Relaxation Technique focuses on tightening and relaxing each muscle group of the body with the goal of consciously producing the body's natural relaxation response, characterized by slower breathing, lower blood pressure, and a feeling of wellbeing.

The present study was conducted with the following objectives: - to determine the adolescent stress, identify manifestations, and also to determine the effect of Progressive Muscle Relaxation Technique (PMRT) on stress and stress manifestations. It was hypothesized that the mean stress and stress manifestations after PMRT will be significantly lower than that of their mean pretest measurement values as measured after one month of supervised practice. The conceptual framework was developed based on Betty Neuman's model (Memmott, Marett, Bott, & Duke, 2000).

### **MATERIALS AND METHODS**

An evaluative approach with one group pre-test post test design was adopted for the current study. The target population was adolescent students in Schools. Samples from adolescents who met the inclusion criteria were included in the study.

#### *Participants*

Sample for the present study was constituted by 46 ninth standard boys ( $N = 25$ ) and girls ( $N = 21$ ) between the age range 13 and 15 selected through convenience sampling from an English Medium Higher Primary School in Udupi District of Karnataka.

#### *Measures*

The following arbitrarily constructed and validated tools in English language tested for reliability (test-retest method) were used to collect data: Stress rating scale ( $\gamma_{(30)} = 0.9$ ) prepared based on the stress scale for children by Saunders and Remsberg (Hockenberry & Wong, 1995) and Stress manifestation checklist ( $\gamma_{(30)} = 0.84$ ) to identify manifestations of stress. Demographic proforma to obtain information on age, sex, birth order, type of family and number of members in the family, and modified Srivastava's socio economic status scale to collect information on educational and occupational status of parents and monthly income of the family were also used.

The stress rating scale consists of 38 items with alternative responses such as "almost always", "usually", "rarely" and "never", and the total score ranges from 47 to 143. The total score

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determines the stress level. The stress manifestation checklist consists of 56 items with responses of “yes” or “no”. The total score is the sum of all positive responses.

### *Procedure*

The needed data were collected after obtaining formal administrative permission from authorities, consent from parents and assent from subjects. After explaining the purpose, importance and the nature of the study, assent was taken. Subjects were assured about the confidentiality of the information. On the first day pre-test was conducted by administering tools after giving necessary instruction that was followed by demonstration of PMRT. Following that there was supervised practice of it for thirty days, which was followed by a post test. Participation was voluntary and no compensation was given for participation.

### *Statistical Analysis*

Data were analyzed based on objectives and hypotheses using descriptive and inferential statistics with SPSS 11 for Windows and Epi info 2000. Paired sample t test to test the difference in pre-test and post test mean scores of stress and stress manifestations, and Chi square test to find the association between stress and the selected demographic variables were used to analyze the data.

## RESULTS

In the present study, majority of adolescents were 14 year old (80%) first born children (40%) from nuclear families (92%). As indicated in Figure.1 comparison of pre PMRT and post PMRT stress scores reveals that most of them experienced moderate stress.

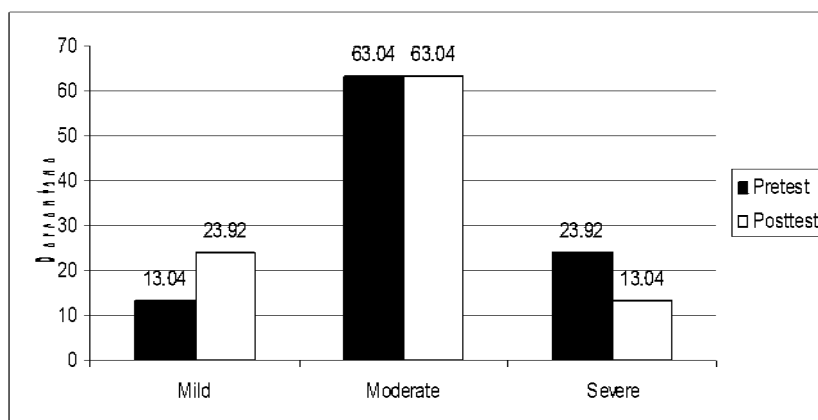


Figure 1: Comparison between pre PMRT and post PMRT stress scores of adolescents

The mean percentage stress score was highest in the interpersonal domain as shown in Figure 2.

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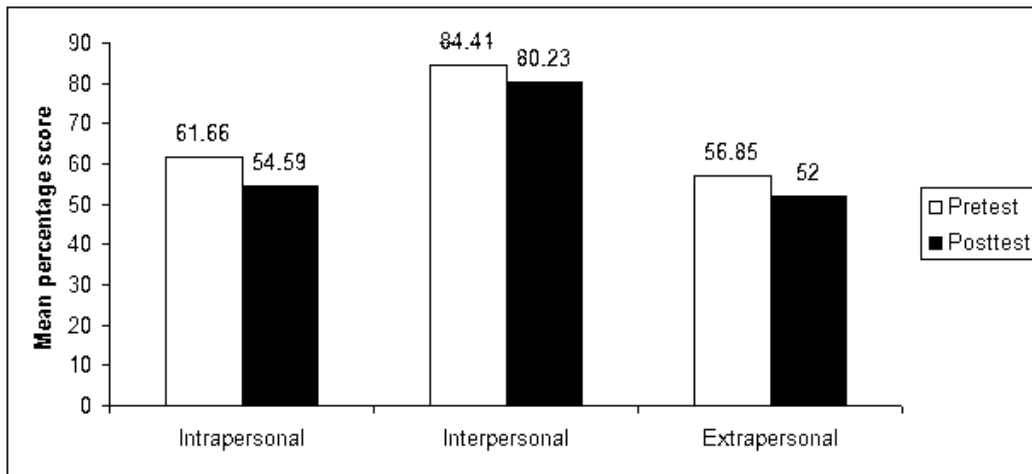


Fig 2: Domain wise comparison of pre PMRT and post PMRT mean percentage stress scores of adolescents

These findings can be interpreted based on supportive evidences from previous studies. Studies examined adolescent stress revealed that overall levels of stress tend to increase from preadolescence to adolescence (Rudolph, 2002) and this is specifically related to interpersonal stressors (Hampel & Peterman, 2006; Hankin, Mermelstein, & Roesch, 2007). Stress within an interpersonal context may be especially strongly related to emotional distress (Rudolph, 2002, Charbonneau, Mezulis, & Hyde, 2009, Hankin et al, 2007). Maladaptive functioning in peer, family, romantic, and parenting roles in adulthood is predicted by the interpersonal dysfunction in early adolescence (Hammen, 2000).

Academic stress is a significant source of stress for many students (Hashim, 2003) and academic failure and low achievement are found to be associated with depression (Faubert, Forehand, Long, Burke, Faust, 1987; Kellam, Brown, Rubin, Ensminger, 1983; Hilsman, Garber, 1995; Kaslow, Rehm, Siegel, 1984). Appearing for examinations, lagging behind in the home work, writing assignment, working on individual and group projects, time pressure, lack of financial support, concern about academic ability, scheduling classes are also identified as stressors for students (Tyrrel, 1992). There is sufficient empirical evidence established on the impact of multiple independent and cumulative stressors, especially in the interpersonal context (Rudolph, 2002) during adolescence. Psychological symptoms including symptoms of depression (Charbonneau et al, 2009; Compas, Connor-Smith, & Jaser, 2004; Shih, Eberhart, Hammen, & Brennan, 2006; Waaktaar, Borge, Fundingsrud, Christie, & Torgersen, 2004) and anxiety (Kim, Conger, Elder, & Lorenz, 2003; McLaughlin & Hatzenbuehler, 2009) are found to be related to it.

In the present study as shown in Figure.3 adolescents exhibited more psychological manifestations than physical manifestations. Majority (70%) of them reported depression as the most commonly occurring manifestation.

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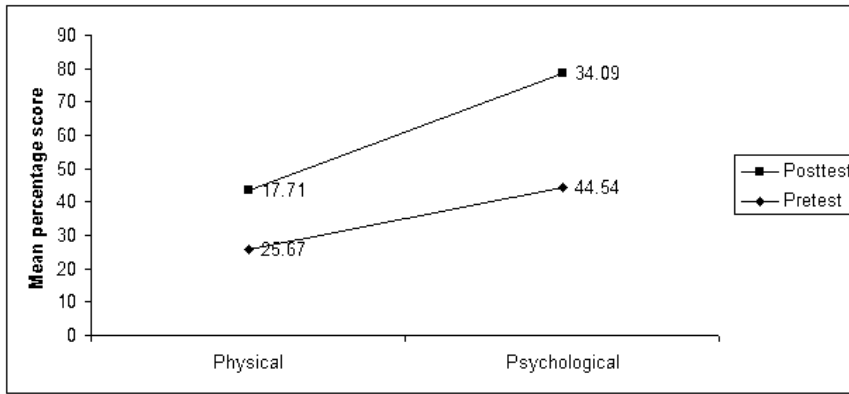


Fig.3 Comparison between pretest and posttest mean percentage stress manifestation scores

Several research studies support this finding through similar observations. Academic stress result in serious psycho-social-emotional health consequences (Scott, 2008) such as depression, anxiety and physical illness (including headache, stomach ulcer, renal problems) in children. Depressive mood is associated with academic problems or low academic achievement (Hilsman & Garber, 1995; Kaslow, Rehm & Siegel, 1984). Reinhold, Laessle & Lindel (2011) revealed that physical symptoms of stress reflect as somatic complaints co-occurring frequently with depression.

Chi square analysis did not show any significant association between stress and selected demographic factors. Thus we accept the null hypothesis that there is no significant association between stress and selected demographic variables under study. This finding is contradictory to the findings from other studies. Costello, Angold, Burns, Stangl, Tweed, Erkanli & Worthman (1996) and Goodman, Huang, Wade & Kahn (2003) reported that children from families with a low social status are at higher risk to suffer from psychological problems. The present finding would have been resulted from peculiarities of the sample.

Table .1 Summary of t test on effectiveness of PMRT on stress

N = 46

Stress scores	M	SD	MD	SDD	S <sub>EMD</sub>	t value	p
Pretest	90.09	12.44	7.94	0.34	1.83	8.8	0.05*
Posttest	82.15	12.78			1.88		

\*p < .05 level

Table .2 Summary of t test on effectiveness of PMRT on stress manifestations

N = 46

Stress manifestations scores	M	SD	MD	SDD	S <sub>EMD</sub>	t value	p
Pretest	20.93	5.06	5.28	0.04	0.75	10.73	0.05*
Posttest	15.65	5.46			0.80		

\* p <.05 level

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As shown in the Table.1 and Table. 2 it was observed that the difference between pretest and post test mean scores was significant at 0.05 level indicating that PMRT was effective in terms of reduction in stress ( $t_{(45)}=8.8$ ,  $p < .05$  level) and stress manifestations ( $t_{(45)}=10.73$ ,  $p < .05$  level). PMRT was used as a secondary prevention.

The present findings replicate the findings of other studies and have supportive evidences from them. Rasid and Parish (1998) examined the effects of two types of relaxation training with 55 high school students' levels of anxiety and found that both behavioral relaxation and progressive muscle relaxation techniques produced significantly lower anxiety scores in the experimental group as compared to the control group. The relaxation techniques are effective in reducing the academic as well as social stress of adolescents as established by Nangia and Sareen (2011) and results in the greatest effects on behavioural and self-reported measures of relaxation (Scheufele, 2000). In another study (Lohaus & Hessling, 2003), progressive muscle relaxation technique was found to have a more significant calming effect in children over the short-term (i.e., five sessions) as compared to additional training sessions (i.e., ten sessions). These results suggested that children are capable of learning relaxation techniques over a relatively short period of time. It is an economically and organizationally feasible method also (Cheung et al, 2003; Scheufele, 2000).

Although the findings of the study have significant implications in training parents on effective parenting, training of school authority in early detection and management of stress among students, equipping children in handling stressors and managing their stress, and for mental health professionals to devise and implement child friendly measures to protect children from ill effects of stress, these findings have to be interpreted in the light of following limitations. First of all, the method of sample selection was not random. Secondly, results cannot be generalized as only one setting was involved. Thirdly, the investigator exclusively used self constructed, self rating scales for children. Fourthly, parents' or teachers' ratings on stress could not be evaluated. Fifthly, there was no control group in the study. Lastly, there was no follow up evaluation conducted.

## CONCLUSION

The present study reveals that adolescents experience moderate stress and an economic, easy intervention like PMRT is useful to relieve it. Of all life-stages adolescence is the potentially tumultuous transition period. Chronic stress in childhood and adolescence can lead to lasting changes in the structure and function of the brain because it occurs during sensitive periods of brain growth and development. There is empirical evidence that stressful life experiences predict increases in psychological problems over time. Unresolved stress in childhood and adolescence leads to physical and psychological problems and risk taking behaviour and poor coping skills in adulthood. Thus, investigating more on the stress, stressors and its outcomes are helpful for planning and implementing health promotion as well as preventive strategies during adolescence.

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