

Stress Management and Problems in Correlation Mathematics and English along with Academic Achievement

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Abstract: *According to Edworthy (2000) Stress can result both physical and mental ill health and loss of sense of achievement. These changes by their very nature will impair the quality of that individual life. One may wonder that stress can adversely affect the students' achievement as it is proved in researches. Students feel difficult in school subjects. This study requires special ability and intelligence. Some students will select mathematics and English forcibly, to meet the demands on them. As a result they develop phobia towards mathematics and English as it decides ones career. Unlike the past, comparatively more number of students are completing higher secondary stage and selecting mathematics and English at higher levels. They concentrate totally on their studies by giving less importance to other activities for better results. All these factors are responsible for stress among students.*

Keywords: Stress Management

I. INTRODUCTION

Lazarus & Folkman (1984) found that individual coping is conceptualized as an individual's behavioral and intrapsychic efforts to deal with internal and external demands that challenge or exceed his or her resources. According to Edworthy (2000) Stress can result both physical and mental ill health and loss of sense of achievement. These changes by their very nature will impair the quality of that individual life. One may wonder that stress can adversely affect the students' achievement as it is proved in researches. Students feel difficult in school subjects. This study requires special ability and intelligence. Some students will select mathematics and English forcibly, to meet the demands on them. As a result they develop phobia towards mathematics and English as it decides ones career. Unlike the past, comparatively more number of students are completing higher secondary stage and selecting mathematics and English at higher levels. They concentrate totally on their studies by giving less importance to other activities for better results. All these factors are responsible for stress among students.

Among various factors that influence student's academic performance, academic stress is a major factor. Students aged between 12-18 years account for more than one fifth of the world's population almost 230million. India this age group forms 23 percentage of the total population. Even though they are facing more problems it is important to take care of them. Quality education requires qualitative teachers, pedagogy transaction, evaluation techniques, curriculum etc., for the better achievement of students. In spite of all care taken by administrators, teachers, and Parents and so on, if the students cannot perform in an expected manner, it will be waste of time as Psychological well-being as resources.

Stress can influence both on physical and psychological problems. It is a major problem in maintaining good health and achievement. Secondary stage is almost crucial period in one's own education. The students particularly at this stage feel stress for a longer period. This stress influences the health of the child both physically and mentally. So the researcher considered this area for study in an exhaustive manner. Since studies regarding relationship between stress and mathematics and English achievement are less. The researcher has selected the problem for investigation. Several studies have emphasized that the stress of students and its effect on academic subjects such as Bell (1995) Dubois and Felner (1992) and Ganesan (1995) have found that stress made a significant contribution in poor school performance of adolescents. Selvam (2001) found that 'Effect of various problems of IX standard students on their academic achievement' and observed that boys are more mental distress than girls due to the worries about their career in future.

Bodenmann (2005) found that stress was directly related to the deterioration of marital interaction. Couples were videotaped for 10 minutes, once before and once after an experimental stress induction. Observation data revealed that the quality of marital communication decreased by 40% after stress induction. Specifically, under stress, couples positive interactions (e.g. active listening, interest, and empathy) were reduced, and their negative behaviors (e.g. criticism, contempt, and belligerence) increased significantly. In a longitudinal study of 82 newlywed couples, Caroli(1992) have reported that students, parents and teachers were more conscious towards their academic achievements. So interference of elders makes stressful situation for adolescents. Mathematics is one of the important subjects to be studied by the student which is a pre requisite to enter into various fields. Cooper (1996) found that, a stress is any force that pushes a psychological or physical factor beyond its range of stability, producing a strain within the individual. Amazigo(2000) found that “Mathematics phobia: diagnosis and prescription” identified teaching problems and lack of instructional materials as major factors responsible for poor performance in mathematics. In fact, they may be in mental frustration. Pandey (2008) found that study significance of “Difference between male and female adolescents on academic performance, achievement motivation, intelligence and socio-economic status. Students face additional stress in their family, school and social environment.

STATEMENT OF THE PROBLEM

The investigator has selected the topic of stress of boys and girls at secondary level and its relation to their academic achievement in the subject mathematics and English. Stress affects both physically and Psychological health of the students.

VARIABLES

In the present study the independent variables and dependent variables are as follows:

Independent variables:-Stress (Interpersonal Problem, Environmental Problem, Academic Problem, Varied Problems).

Dependent variables:- Academic Achievement in Mathematics and English.

Intervening Variables: (i) Gender (Boys / Girls) (ii) Locality-Rural.

OBJECTIVES OF THE STUDY

The study was undertaken with the following objectives in view:

1. To study the relationship between stress and academic achievement in the subject Mathematics and English among boys.
2. To study the relationship between stress and academic achievement in mathematics and English among girls.
3. To study the relationship between stress and academic achievement in Mathematics and English among students as a whole.

HYPOTHESES

On the basis of theoretical background and logical supposition, in the present study the following hypotheses are framed.

1. There is a significant relationship between stress and academic achievement in Mathematics and English among boys.
2. There is a significant relationship between stress and academic achievement in Mathematics and English among girls.
3. There is a significant relationship between stress and academic achievement in Mathematics and English among students as a whole.

II. RESEARCH METHODOLOGY

SELECTION OF THE SAMPLE: The study undertaken was a descriptive research in education which attempts to describe and analyze the present conditions, with a view to have an accurate picture of the present which in turn forms

the basis for future. The population for the present study was high school students of Pune district. The sample for the present Investigation consists of 200 high school student’s selected using stratified sampling technique.

TOOLS: Stress Inventory (SI) consists of totally 84 items, grouped into four content areas with three alternative levels, Not at all Stressful 1), UN Decided 2) Highly stressful 3). Only the items with significant mean difference and ‘t’ value is considered for final tool. The coefficient of reliability was estimated using Split Half Method. The reliability of SI was 0.654. It shows that the inventory is reliable. Content validity, face validity and intrinsic validity were established using suitable techniques.

COLLECTION OF DATA: The investigator visited the selected senior college students personally. The researcher gave clear instruction to the students. Sufficient time was given for proper responses. The students took nearly 1 hour to complete the tool. For academic achievement in mathematics and English, the investigator collected mid-Term marks of each student.

PROCEDURE: After seeking the permission from the participants, data was collected by administering one scales namely, Stress Inventory individually as well as in groups. Uniform instructions were given to the sample. Before giving the booklet of the scale and that of the answer sheets to the respondents, it will be ensured that they will be fulfilling the criteria set for the sample selection. A preliminary introduction of the topic for research will be given to each group to solicit their interest and cooperation. This was also ensured the return of the booklets. Each of the scale has a bio-data form in which the respondents had to fill up their personal information.

STATISTICAL ANYLISIS: The Pearson's Product-moment Correlation technique was used to find out the relationship between stress and academic achievement of students and tested for its significance using 't' test.

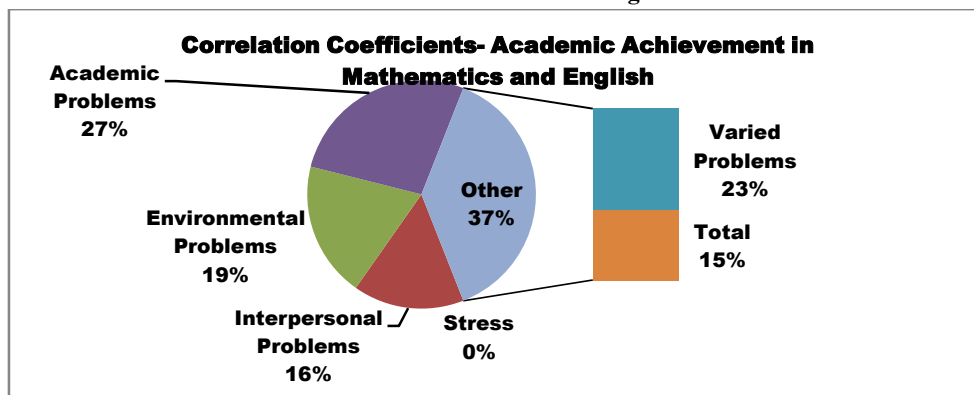
LIMITIONS: This study is only focused on 11 to 16 years old students from 7th to 10th standard of education. It does not include the students below the 6th standard and above the 10th standard.

III. RESULTS

Table-1 : Correlations of factor of stress with academic achievement of boys in Mathematics and English

<i>Stress</i>	Correlation Coefficients- Academic Achievement in Mathematics and English			
	<i>N</i>	<i>r</i>	<i>t</i>	<i>p</i>
Interpersonal Problems	200	0.2985	3.3685	<0.01
Environmental Problems	200	0.3635	4.2026	<0.01
Academic Problems	200	-0.5131	6.4392	<0.01
Varied Problems	200	0.4277	5.0959	<0.01
Total	200	-0.2946	3.3199	<0.01

** P<0.01 *P<0.05 NS = Not Significant



DISCUSSION

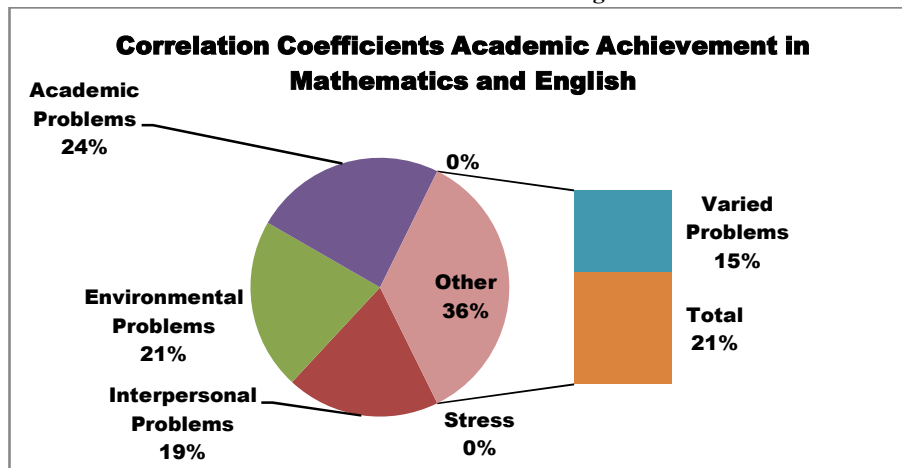
The hypotheses-1, There is a significant relationship between stress and academic achievement in mathematics and English among boys. The hypothesis is accepted. The obtained ‘t’ value 3.3685 is greater than the tabled ‘t’ value 2.76

at 0.01 level, therefore, the hypothesis is accepted. There by there is a significant negative relationship between the dimension of Stress *interpersonal problems* and academic achievement of boys in Mathematics and English. Since the obtained 't' value 4.2026 is greater than the tabled 't' value 2.76 at 0.01 level, therefore, the hypothesis is accepted. There is a significant negative relationship between the dimension of Stress *environmental problems* and academic achievement of boys in Mathematics. Since the obtained 't' value 6.4392 is greater than the tabled 't' value 2.76 at 0.01 level, therefore, the hypothesis is accepted. There is a significant negative relationship between the dimension of Stress *academic problems* and academic achievement of boys in Mathematics. Since the obtained 't' value 5.0959 is greater than the tabled 't' value 2.76 at 0.01 level, therefore, the hypothesis is accepted. There is a significant negative relationship between the dimension of Stress *varied problems* and academic achievement of boys in Mathematics.5. Since the obtained 't' value 3.3199 is greater than the tabled 't' value 2.76 at 0.01 level.

Table-1 : Correlations of factor of stress with Academic Achievement of girls in Mathematics and English

Stress	Correlation Coefficients Academic Achievement in Mathematics and English			
	N	r	t	p
Interpersonal Problems	200	-0.4026	-3.9333	<0.01
Environmental Problems	200	0.4489	4.4930	<0.01
Academic Problems	200	-0.5029	5.2034	<0.01
Varied Problems	200	0.3134	2.9520	<0.01
Total	200	-0.4289	4.2467	<0.01

** P<0.01 *P<0.05 NS = Not Significant



DISCUSSION:

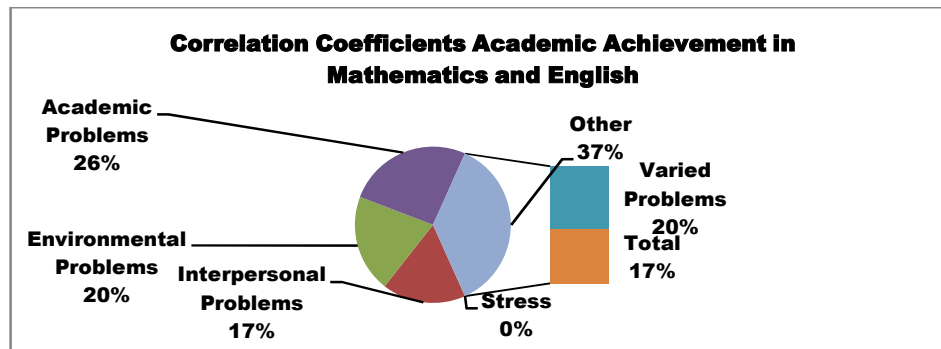
The hypotheses-2 States that, There is a significant relationship between stress and academic achievement in mathematics and English among girls. The hypothesis is accepted. The obtained 't' value -3.9333 is greater than the tabled 't' value 2.76 at 0.01 level, therefore, the hypothesis is accepted. There is a significant negative relationship between the dimension of Stress *interpersonal problems* and academic achievement of girls in Mathematics and English. Since the obtained 't' value 4.4930 is greater than the tabled 't' value 2.76 at 0.01 level, therefore, the hypothesis is accepted. There is a significant negative relationship between the dimension of Stress in Mathematics and English *environmental problems* and academic achievement of girls in Mathematics and English. Since the obtained 't' value 5.2034 is greater than the tabled 't' value 2.76 at 0.01 level, therefore, the hypothesis is accepted. There is a significant negative relationship between the dimension of Stress *academic problems* and academic achievement of girls in Mathematics and English. Since the obtained 't' value 2.9520 is greater than the tabled 't' value 2.76 at 0.01 level, therefore, the hypothesis is accepted. There is a significant negative relationship between the dimension of Stress

varied problems and academic achievement of girls in Mathematics and English. Since the obtained 't' value 4.2467 is greater than the tabled 't' value 2.76 at 0.01 level.

Table-3: Correlations of factor of stress with academic achievement in Mathematics and English of students taken as a whole unit.

Stress	Correlation Coefficients Academic Achievement in Mathematics and English			p-value
	N	r	t	
Interpersonal Problems	200	-0.3403	5.0922	<0.01
Environmental Problems	200	-0.3973	6.0922	<0.01
Academic Problems	200	-0.5000	8.3206	<0.01
Varied Problems	200	0.3852	5.8733	0<0.01
Total	200	-0.3343	4.9919	<0.01

** P<0.01 *P<0.05 NS = Not Significant



DISCUSSION

The hypotheses-3 States that, There is a significant relationship between stress and academic achievement in mathematics and English among students as a whole. The hypothesis is accepted. The obtained 't' value -0.5000 is greater than the tabled 't' value 2.76 at 0.01 level, therefore, the hypothesis is accepted. There is a significant negative relationship between the dimension of Stress *interpersonal problems* and academic achievement of students as a whole in Mathematics and English. Since the obtained 't' value 6.0922 is greater than the tabled 't' value 2.76 at 0.01 level.

IV. STATISTICAL ANALYSIS AND CONCLUSION

Factor of Stress such as Interpersonal Problems, Environmental Problems, Academic Problems, and other Varied Problems show significant negative relationship with the academic achievement of boys and girls from the selected sample of the student at secondary level.

STRESS MANAGEMENT

Stress management encompasses techniques intended to equip a person with effective coping mechanisms for dealing with psychological stress. Definition of stress: Stress management defines stress precisely as a person's physiological response to an external stimulus that triggers the 'fight-or-flight' Reaction. Causes of stress: Many things can trigger the stress reaction, including danger, threat, fear, phobia, anxiety news, illness, as well as significant changes in one's life such as the death of a loved one. Techniques of stress management include:

- Self-understanding, Self-management.
- Positive attitude.
- Self-talk .
- Breathing exercises

- Meditation.
- Exercise
- Altering your diet
- Taking more regular and effective rest.

STRESS BENEFITS

You will acquire skills that will assist you to learn from stressful experiences so that you are not stressed out by the same thing time and time again. You will be able to self-identify and reframe irrational thoughts. You will be able to apply self-hypnosis and self-meditation to personal problems and future goals most importantly; you will increase your stress toughness. One of the immediate benefits is that you will enjoy a significant reduction in the negative impacts of daily hassles. Stress research has shown that it is often the cumulative wear and tear of daily hassles rather than the major life events that cause us damage. You will also make important decisions in relation to work-life balance and we are self-confident that you will resolve to correct any imbalance. You will be motivated to commence or continue a personal fitness programmed. You will understand the important intra-relationship between stress and the immune system. You will be able to download and experience the full benefits of self-relaxation.

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