

Stress Coping Ability and Achievement in Chemistry of Higher Secondary Students of Cuddalore District

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Abstract: *Stress coping Ability prevents stress related problems and promotes personal growth. Training of certain Abilities such as problem solving and social support, Emotional support would prevent stress and enhance coping Abilities. Invigilator collected data from 1200 students of Cuddalore District including Government and private schools. it was found that Stress coping Ability of Higher secondary Students is high, but the Achievement in Chemistry is little above average. There is significant difference in Stress coping ability and Achievement in Chemistry of higher secondary students as well as in subsamples. This study suggests that there must be improvement in the Achievement of Chemistry among the Higher Secondary Students. Higher secondary students have different mechanisms to cope with stress. Meditation and recreation like games and other extracurricular activities may be included in the school. For both the achievement and stress coping teachers and parents must help the students.*

Keywords: *Stress coping Ability, Achievement in Chemistry and meditation.*

I. How do adolescents cope with stress?

Stress is common to everyone; however, we differ in how we respond to our stressors. When we are under or over aroused, we cannot perform our task at our best. Peak performance is achieved when we are in a state of optimum arousal. In our every day situation, if we are in control of our thinking, feeling and action we can reduce the stress and increase our performance. We tend to think, feel and act in a consistent way in accordance with our own beliefs and coping strategies. Most of us habitually react to our life events without much awareness. If we learn to think, feel and act in a helpful, flexible and realistic way we can reduce stress and can gain something out of our stressful life events. This programme designed to cultivate coping resources to minimize the impact and maximize the benefits from our every day stressful events.

Stress coping skills prevents stress related problems and promotes personal growth. Training of certain skills such as problem solving and social skills would prevent stress and enhance coping skills. In order to prevent stress related problems it is necessary to improve the competencies of students, making them more able to cope with whatever difficulties life might bring. Some of the competencies that seem be related to stress coping skills are 1) anticipate or detect potential stressors and identifying functional, dysfunctional coping; 2) taking responsibility for one's behaviour and its outcome; 3) building satisfying relationship with others; 4) develop effective cognitive problem solving and decision making skills. Those students who are unskilled in these areas might experience and avoid stress. Training in these skills makes them more competent and coping efficiency is maximized

Adolescents react to stress in much the same ways adults do. Common reactions are excitement, fear, anxiety, sadness, and anger. The behavior of an adolescent who is stressed may change, but each adolescent reacts in a different way. Some adolescents withdraw from others, some lash out at others, and some actively seek the comfort of others.

Although adolescents cope with stress in different ways, there are general patterns in their coping behaviors. There are two major ways to cope with stress. One way is problem solving. This involves trying to deal with the problem by changing the situation or getting rid of the problem. Another way of handling stress is managing emotions. This involves handling the thoughts and feelings caused by the problem.

Adolescents use both methods, and both can be effective, depending on what the problem is and when it started. Studies show that people who deal with their problems, see the positive side of difficult situations, and take part in activities they enjoy are more likely to be well-adjusted. Acting to solve problems often requires planning. Sometimes it requires learning new skills. For example, coping with poor grades might require learning study skills and making time to complete homework. Coping with feeling left out might require learning social skills. An example of seeing the positive side would be focusing on your team's good performance even though they lost the game.

Managing emotions can be very helpful when an adolescent is dealing with an uncontrollable problem. It can also be helpful in the early stages of coping with a problem. For example, blowing off steam, avoidance, and distraction can be important ways of getting prepared to cope more directly with difficult

situations. Studies show that the most common ways young adolescents cope with stress are listening to music and watching television. Another way of resolving stressful situations is to find meaning in the experience. It helps if teens can see that something good is coming out of the problem. Finally, doing something enjoyable provides time out from stress.

What is Achievement Test?

Achievement test is a standardized test used to measure acquired learning, in a specific subject area such as reading or arithmetic, in contrast to an intelligence test, which measures potential ability or learning capacity.

Achievement tests are exams that are designed to determine the degree of knowledge and proficiency exhibited by an individual in a specific area or set of areas. An achievement test is sometimes administered as part of the acceptance process into an educational program or to qualify an individual for employment or a promotion with a current employer. In other applications, the achievement test serves as a tool to measure current knowledge levels for the purpose of placing students in an educational environment where they have the chance to advance at a pace that is suitable for their abilities.

Achievement test is 1. To measure whether students possess the pre-requisite skills needed to succeed in any unit or whether the students have achieved the objectives of the planned instruction. 2. To monitor students' learning and to provide ongoing feedback to both students and teachers during the teaching-learning process. 3. To identify the students' learning difficulties- whether persistent or recurring. 4. To assign grades.

Achievement test in Chemistry: It is a standardized test used to test the knowledge, understanding, application and skill in chemistry subject among 11th standard students.

II. Sample Of The Study

Out of 60 higher secondary schools of Cuddalore District, 12 Government Schools 12 non government higher Schools are selected. It includes three government boys' schools, three government girls' schools, six government coeducation schools, three non government boys' schools, three non government girls' schools and six non government coeducation schools. 50 students from each school is selected randomly. The sample size is 1200.

Tools of the study

1. Stress Coping ability (constructed and standardized by the researcher) with a five point scale.
2. Achievement in Chemistry (constructed standardized by the researcher) It is a standardized test used to test the knowledge, understanding, application and skill in chemistry

Objectives Of The Study

1. To study the level of Stress Coping ability of Higher Secondary students.
2. To study the level of Achievement in Chemistry of Higher Secondary students.
3. To study if there is significant difference among the higher secondary students Stress Coping Ability in respect to sub samples
- 4 To study if there is significant difference among the higher secondary students Achievement in Chemistry in respect to sub samples

Hypothesis Of The Study

1. Stress Coping ability of Higher Secondary students is high
2. Achievement in chemistry of Higher Secondary students is high
3. There is no significant difference among the higher secondary students Stress Coping Ability in respect to sub samples
4. There is no significant difference among the higher secondary students Achievement in Chemistry in respect to sub samples

Statistical analysis of the Data

Mean, Standard deviations and 't' test are used for the analysis of the data

Hypothesis Testing:

Hypothesis : 1 . Stress Coping ability of Higher Secondary students is high

Table-1 Showing Mean and Standard deviation of Stress Coping Ability and Achievement in Chemistry of Higher Secondary students and the sub sample

Whole Sample	N	Stress Coping Ability		Achievement in Chemistry	
		Mean	S.D	Mean	S.D
Higher Secondary Students	1200	158.50	19.93	21.26	4.24
Boys	600	154.43	19.87	20.64	3.66
Girls	600	162.57	19.16	21.88	4.67
Boys in non Govt. Schools	300	155.46	18.78	21.98	3.50
Girls in non Govt. Schools	300	165.24	15.32	23.24	4.39
Boys in coeducation Schools	300	152.54	21.89	20.84	3.88
Girls in coeducation Schools	300	158.86	22.41	22.71	4.81
Boys in Govt. Schools	300	153.41	20.89	19.31	3.33
Girls in Govt. Schools	300	159.89	22.05	20.41	4.48
Boys in Boys' Schools	300	156.32	17.46	20.45	3.43
Girls in Girls' Schools	300	166.27	14.34	21.03	4.36
Boys of Rural Residence	407	154.10	20.75	20.18	3.66
Girls of Rural Residence	399	160.33	20.18	22.82	4.22
Boys of Urban Residence	193	155.13	17.93	20.82	3.69
Girls of Urban Residence	211	165.46	17.36	21.48.	5.17

From the above table-1, The maximum possible score in respect of Stress Coping Ability questionnaire is 200. Hence, a score of 100 and above are considered as having relatively better Stress Coping Ability. The mean and standard deviation of higher secondary students (entire sample) is found to be 158.50 and 19.93 respectively. On comparing the means of Stress Coping Ability, girls have high Stress Coping Ability than the boys. In various sub samples, the mean ranges from 160.33 to 166.27. The highest mean score is found for the Girls in Girls' schools and the lowest to the girls of rural residence.

From the above analysis, it is clear that the Stress Coping Ability of Higher Secondary Students is high. Hence the hypothesis (1) of the present study is accepted.

Hypothesis : 2 Achievement in Chemistry of Higher Secondary students is high

The maximum possible score in respect of Achievement in Chemistry questionnaire is 35. Hence, a score of 18 and above are considered as having relatively better Achievement. The mean and standard deviation of higher secondary students (entire sample) is found to be 21.26 and 4.24 respectively. From the above data, there is no much difference in the mean score of boys and girls in Achievement in chemistry as well as in the sub samples. In various sub samples, the mean ranges from 23.24 to 19.31. The highest mean score is in favour of Girls in non Govt. Girls' School and the lowest to the Boys in Govt. Boys' Schools. From the above analysis, it is clear that the Achievement in Chemistry of Higher Secondary Students is just above average. Hence the hypothesis (2) of the present study is rejected.

Hypothesis 3: There is no significant difference among the higher secondary students Stress Coping Ability with respect to sub samples

Table-2 Showing t-scores of Stress Coping Ability of Higher Secondary students and in the sub samples

Sub Sample	Stress Coping Ability		t	Level of Sig.
	Mean	S.D		
Boys	154.43	19.87	7.21	S
Girls	162.57	19.16		
Boys in non Govt. Schools	155.46	18.78	3.43	S
Girls in non Govt. Schools	165.24	15.32		
Boys in coeducation Schools	152.54	21.89	6.97	S
Girls in coeducation Schools	158.86	22.41		
Boys in Govt. Schools	153.41	20.89	3.68	S
Girls in Govt. Schools	159.89	22.05		
Boys in Boys' Schools	156.32	17.46	7.67	S
Girls in Girls' Schools	166.27	14.34		
Boys of Rural Residence	154.10	20.75	3.42	S
Girls of Rural Residence	160.33	20.18		
Boys of Urban Residence	155.13	17.93	7.57	S
Girls of Urban Residence	165.46	17.36		

From the above table it is clear that there is significant difference between the subsamples of stress coping ability at 0.01 level. Hence the hypothesis 3 is rejected.

Hypothesis 4 : There is no significant difference among the higher secondary students Achievement in Chemistry with respect to sub samples

Table-3 Showing t-scores of Achievement in Chemistry of Higher Secondary students and in the sub samples

Sub Sample	Achievement in Chemistry		t	Level of Sig.
	Mean	Mean		
Boys	21.26	21.26	5.44	S
Girls	20.64	20.64		
Boys in non Govt. Schools	21.88	21.88	4.07	S
Girls in non Govt. Schools	21.98	21.98		
Boys in coeducation Schools	23.24	23.24	5.44	S
Girls in coeducation Schools	20.84	20.84		
Boys in Govt. Schools	22.71	22.71	5.42	S
Girls in Govt. Schools	19.31	19.31		
Boys in Boys' Schools	20.41	20.41	2.04	S
Girls in Girls' Schools	20.45	20.45		
Boys of Rural Residence	21.03	21.03	4.72	S
Girls of Rural Residence	20.18	20.18		
Boys of Urban Residence	22.82	22.82	2.14	S
Girls of Urban Residence	20.82	20.82		

From the above table it is clear that there is significant difference between the subsamples of stress coping ability at 0.01 level. Hence the hypothesis 4 is rejected.

III. Major findings

Stress coping Ability of Higher secondary Students is high, but the Achievement in Chemistry is little above average.

There is significant difference in Stress coping ability and Achievement in Chemistry of higher secondary students as well as in subsamples.

IV. Suggestions:

This study suggests that there must be improvement in the Achievement of Chemistry among the Higher Secondary Students.

Higher secondary students have different mechanisms to cope with stress. Meditation and recreation like games and other extracurricular activities may be included in the school.

For both the achievement and stress coping teachers and parents must help the students in most of the problems faced by the students.

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