

Stress and Achievement in Science of Secondary School Students

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ABSTRACT

The modern world, which is said to be a world of achievement, is also a world of stress. One finds stress everywhere, whether it is being within a family, business organization, or any other social or economic activity. Right from the time of birth till the last breath drawn, an individual is invariably exposed to various stressful situations. Thus, it is not surprising that interest in the issue has been rising with the advancement of the present century, which has been called the "Age of Anxiety and stress. Stress normally refers to specific unpleasant feelings and/or physical responses that people experience when they are working beyond their Capacities and levels tolerance. The term stress is derived from the Latin word 'Stringere', meaning to draw tight. It is loosely borrowed from the field of physics. Humans, it is thought, are in some ways analogous to physical objects that resist moderate outside forces but that loses their resilience at some point of greater pressure. Does stress has some impact on Achievement in Science or not ? The present study was conducted to study the stress level and achievement in science of secondary school students The purpose of this study is to investigate the Stress and Achievement in Science of Secondary School Students. The purposive sampling technique was used to select 100 teachers of Patna. The following tools were used for data collection. Stress Inventory for School Students (SISS) developed by Rani and Singh.(1947), and Self-constructed and validated Achievement tests in Science for secondary school students. Mean, S.D. and t-test were applied to analyze the data. In the present study it was found that there is a significant difference in Stress and Achievement in Science of Secondary School Students on both aspect gender and type of school. Stress in boys and private schools student is more than the stress in girls and government schools student. Achievement in science of girls and private schools student is better than the achievement in science of boys and government school students.

Key words: *Stress, Achievement, Science, Secondary School Students.*

Introduction:

Stress is a subject that is hard to avoid. The terms are discussed not only in our everyday conversations but has become enough of a public issue to attract wide spread media attention. Different people have different views about it as stress can be experienced from a variety of sources (Pestonjee, 1999). From being a single monolithic experience, stress is an individual

phenomenon, mediated by one's ability to cope with it, and is influenced by one's own perceptions and experiences of life. (Cox & Howarth, 1990). The experience of feeling stress depends on what events one notices and how one appraises them (Lazarus, 1990). Events that are stressful for one person may be routine for another. In the scientific literature, stress is used

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in three destined ways. It is used first to refer to an event or to any environmental stimulus that causes a person to feel tense or aroused. In this sense, stress is something 'external' to the person. This view of stress as external pressure suggests that all the person can do is try to withstand that pressure. This approach suggests that external force or stressor is something that places severe pressure on a person, and all the person can do is to try to survive. Second it is used to refer to a subjective response to what is going on. In this sense, stress is the internal mental state of tension or arousal. It is the interpretive, emotive, defensive and coping processes occurring inside the individual. Such processes may promote positive growth or produce mental wear and tear (strain). According to third view, stress is the physical reaction of the body to demand or damaging intrusions. To meet the demand, the body reacts with a higher arousal level expends more energy; and it is this body arousal and energy expenditure that constitutes stress. Beginning in the 1930s, Hans Selye researched and popularized the concept of stress. Initially he considered stress to be a stimulus and later saw it as a response. His original position was that stress was a stimulus, concentrating on the environmental conditions that produce stress. In the 1950s, Selye Started to use the terms stress to refer to a response that the organism makes. He used the term distress for unpleasant, bad and damaging stress and the term eustress for positive, satisfying or good stress. Distress is the degree of physiological, psychological and behavioral deviation from an individual's healthy functioning, whereas, eustress is the healthy, constructive outcome of stressful events or the stress response. His contributions to stress research included a concept of stress and a model for how the body, defends itself in stressful situations. He conceptualized stress as "the non-specific response of the body to any demand

made upon it". (Selye, 1956). He insisted that stress is a general physical response caused by any of a number of environmental stressor. In 1975, Mason reviewed the literature on stress and concluded that there was confusion and a lack of consensus regarding its definition. This problem continues unabated twenty years later also. Agarwala, Malhan and Singh (1979) believe that the confusion in definition is primarily due to the fact that same term is used variously by scholars of different disciplines. In physics, stress is a force which acts on a body to produce strain. In Physiology, the various changes in physiological functions in response to evocative agents denote stress (rather than strain).

Achievement: When one tries to measure the amount of success of a person in a specific field or area of accomplishment, then it said to be his or her achievement –this may be in a school situation, or in a bank or in a company or in a factory or in any sort of academy, and achievement tests are those tests that measure the amount of success of an individual in a given set of accomplishment. An achievement Test is essentially a tool or device of measurement that helps in ascertaining quality and quality of learning attained in a subject of study or group of subjects after a period of instruction by measuring the present ability of the individual concerned.

Background of The Study :

Prakash(1986) studied the relationship between intelligence, scholastic achievement, personality traits and achievement in sports at different level of socio-economic status. He found that there is significant difference in intelligence, scholastic achievement and, personality traits.

Kumari(1982) studied a relationship between intelligence, achievement stress and socio- economic pattern of different socio-metric groups of adolescents. He found that there were significant difference among the four socio-metric groups in the case of almost all variables and the

different socio-metric groups differed significantly on the variables on home stress, social stress, health stress, school stress and total stress.

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Significance of the Study:

The prime function of education is to draw out the potentialities of the child and develop them to meet the challenging situation in life. Proper education will help the child to understand the society and handling the stress. It is in the school that positive attitude towards life and work is developed. Personality development is the concern of every individual of the society and of the world at large. The home is the first institution which forms the base for the child's character and personality. Next to school, teacher is the guardian who helps the child to mould the personality. In the case of secondary school students they very stressed. They have different types of problems. They are not ready to adjust themselves in society finally they are stressed. Therefore, the investigator inclines to study on stress and achievement in science of secondary school students.

Statement of the Problem:

After 71 years of Independence the stress condition of secondary school students is not up to mark. This group is considered as the future of the nation. In society stress is the biggest

problem. So, it is the need of the hour in the field of education to pay attention to these important aspects in society. So the investigator wants to study on stress and achievement in science of secondary school students.

Operational Definitions:

Stress: Body's way of responding to any kind of demand or threat.

Achievement: Something accomplished successfully, especially by means of exertion, skill, practice, or perseverance.

Secondary School: Institution after middle school and before senior secondary, particularly grades nine and ten.

Students: A student is a learner, or someone who attends an educational institution.

Specific Objectives:

1. To find whether there is any significant difference between male and female students in their stress score.
2. To find whether there is any significant difference between government and private secondary schools students in their stress score.
3. To find whether there is any significant difference between male and female students in their achievement score in science.
4. To find whether there is any significant difference between government and private secondary schools students in their achievement score in science..

Null Hypotheses:

1. There is no any significant difference between male and female students in their stress score.
2. There is no any significant difference between government and private secondary schools students in their stress score.
3. There is no any significant difference between male and female students in their achievement score in science.

4. There is no any significant difference between government and private secondary schools students in their achievement score in science.

Tools Used :

The following tools were used for data collection.

- 1) Stress Inventory for School Students (SISS) developed by Rani and Singh.(1947),
- 2) Self-constructed and validated Achievement tests in science for secondary school students.

Method Used :

The investigator has adopted survey method for the present study.

Population For The Study :

According to Best and Kahn (2003), “A population is any group of individuals who has one or more characteristics in common that are of interest to the researchers.”

The population for the study was secondary schools students of Patna Districts only.

Sample : According to Best and Kahn (2003) “A sample is a small proportion of a population selected for observation and analysis by observing the characteristics of the sample, one makes certain inferences about the characteristics of the population from which it is drawn. Contrary to some population opinion , samples are not selected haphazardly; they are chosen in a systematically random way so that chance or the operation of probability can be utilized.”

The investigator used stratified random sampling technique for selecting 100 sample.

Statistical Techniques Used :

For analyzing data Critical ratio test (‘t’-test), and Pearson’s product moment co-efficient of correlation werecalculated.

Delimitations For The Study :

1. The study is limited to Patna district only.
2. Only the secondary school students were taken as the sample.

Results And Discussion

Hypothesis 1- There is no any significant difference between male and female students in their stress score.

TABLE 1

Mean, SD and t-ratio based on their gender

Gender	N	Mean	S.D.	t-ratio	Remarks
Male	62	28.26	3.47	3.78	S*
Female	38	25.34	3.53		

(S* means significant)

It is inferred from the **table 1** that the t-value is 3.78 which is more than the table value 2.63 at 0.01 level of significance. Hence the null hypothesis is rejected. It means there is significant difference in mean scores of stress between male and female secondary school students. So, it can be said that the stress of male is more than the stress of female students.

Hypothesis 2- There is no any significant difference between government and private secondary schools students in their stress score.

TABLE 2

Mean, SD and t-ratio based on their school type

School Type	N	Mean	S.D.	t-ratio	Remarks
Government	50	24.91	3.42	3.29	S*
Private	50	27.84	5.28		

(S* means significant)

It is inferred from the **table 2** that the t-value is 3.29 which is more than the table value 2.63 at 0.01 level of significance. Hence the null hypothesis is rejected. It means there is significant difference in mean scores of stress between government and private secondary school students. So, it can be said that the stress of private school students is more than the stress of government school students.

Hypothesis 3- There is no any significant difference between male and female students in their achievement score in science.

TABLE 3**Mean, SD and t-ratio based on their gender**

Gender	N	Mean	S.D.	t-ratio	Remarks
Male	62	58.44	6.42	5.968	S*
Female	38	64.23	3.24		

(S* means significant)

It is inferred from the **table 3** that the t-value is 5.968 which is more than the table value 2.63 at 0.01 level of significance. Hence the null hypothesis is rejected. It means there is significant difference in mean scores of achievement in science between male and female secondary school students. So, it can be said that the achievement in science of female is better than the male students.

Hypothesis 4- There is no any significant difference between government and private secondary schools students in their achievement score in science.

Table- 4**Mean, SD and t-ratio based on their school type**

School Type	N	Mean	S.D.	t-ratio	Remarks
Government	50	56.78	4.8	10.53	S*
Private	50	67.54	5.4		

(S* means significant)

It is inferred from the table 4 that the t-value is 10.53 which is more than the table value 2.63 at 0.01 level of significance. Hence the null hypothesis is rejected. It means there is significant difference in mean scores of achievement in science between government and private secondary school students. So, it can be said that the achievement in science of private school students is better than the government school students.

Conclusion:

It is found in my result that the stress in male students is more than the stress in female students. In my opinion it may be possible because in male students there may be stress of unemployment or other reason also. It is also

found that stress in private school students is more than the stress of government school students. In the case of achievement in science of girls student is better than boys student while achievement in science of private school students is better than the achievement in government school students.

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