

## Physiological and Psychological Factors and Academic Stress of Students

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### Abstract:

*The purpose of this study was to explore the physiological and psychological factors affecting academic stress of students on the basis of the previous study and the review of related literature available. Like other stressors, academic stress also play important role in academic success of students. The stressors can be classified in two major divisions. These divisions of stressors are physiological and psychological factors. In physiological factors, genetical and Environmental factors are two main sub divisions. The factors acquired from parents come under genetical factors while all factors related to surrounding of students come under the subdivision of environmental factors. The Psychological factors like emotions some time play more significant role as stressor than physiological factors. The symptoms of stress on a student can be observed and quantified. It is must for a teacher to use such activities which can protect student from over stress conditions to attain maximum objective of their teaching.*

**Keywords:** Academic Stress, Physiological and Psychological Factors, Students

### I. INTRODUCTION

The success of human being mainly depends upon the ability to handle with problems. Sometime, when the situation is not under control the person feels under stress. Although stress may be many type according to the nature of problems but its origin is from physics. In Physics, It is a force that produces strain on a physical body i.e. bending a piece of metal until it snaps occurs because of the force, stress, exerted on it. Hans Selye (1956)<sup>[1]</sup> has started using the term stress after completing his medical training at the University of Montreal in the 1920's. He noticed that no matter what his hospitalized patients suffered from, they all had one thing in common. They all looked sick. In his view, they were under physical stress. He proposed that stress was a non-specific strain on the body functions. This stress resulted in the release of stress hormones. He called this the General Adaptation Syndrome (GAS).

In human, stress may be defined as the body's reaction to a challenge which produces physiological and psychological reactions in our body. Physiological changes may reflect in multiple symbols i.e. increased secretion of hormones, slowed digestion, accelerated breathing and heart rate, dilation of pupils and flushed skin. It may be cause of "fight or flight" response of individual. That is just what it sounds like: Our bodies are poised to either run away from the stressor or stick around and fight against it. Stress is a necessary, unavoidable and naturally accompanying of daily living, necessary because without some stress we would be listless and apathetic creatures, and unavoidable because it relates to any external event, it pleasurable or anxiety producing. Though stress is often perceived as bad, it can actually be good in some respects. The right kind of stress can sharpen the mind and reflexes. It might be able to help the body perform better, or help you escape a dangerous situation.

### II. PURPOSE OF THE STUDY

The purpose of this study is to explore the Physiological and Psychological factors which affect academic stress of students. It will help us in knowing how to monitor and control the stress related factors in students.

In general opinion students perceive that faculty exert great power over their study and feel that they live in a state of substantial powerlessness (Altbach, 1970)<sup>[2]</sup>. Academic stress is also influenced by high aspiration, poor study habits, study problems, and low socio-economic conditions. It is a mental distress with respect to some apprehended frustration associated with academic failure, apprehension of such failure or even an awareness of the possibility of such failure (Gupta and Khan, 1987)<sup>[3]</sup>. Present age is the age of competition. Every person has a unique nature as regard to capabilities, attitudes, personality characteristics and interest. The students have a major impact of stress due to bloodshed competition in every field. So the students should have the aspiration / expectation about their study, not beyond their capacities and abilities. Students need proper counseling while selecting their courses at intermediate level. The parents should consider the child's interest and aptitude and not impose on selecting the courses. The family environment should be congenial and the learning process should be made pleasurable and parents should avoid making it as a stressful event for adolescents. Finally supportive and stimulating atmosphere is very necessary for the students to progress in their academic life and for reaching their aim or goal.

On the basis of the character of stress, Kasl and Anderson (1983)<sup>[4]</sup> has generalized stress into four categories: (1) viewing stress from external situations; (2) viewing stress from the perception or evaluation of situations; (3) viewing

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stress as some kind of relationship between environmental needs and individual handling ability; (4) viewing stress as some kind of relationship between environmental needs and individuals. Another source of stress is the difficulty of achieving social intimacy. It is difficult to find a mate or maintain a relationship with an existing one. Graduate students tend to lack the time and/or the opportunity to develop interpersonal relationships (Hartshorn, 1976)<sup>[5]</sup>. Fear of academic failure related to these tasks is a definite stressor (Kolko, 1980)<sup>[6]</sup>. College students have many obstacles to overcome in order to achieve their optimal academic performance. It takes a lot more than just studying to achieve a successful college career. Different stressors such as time management and social activities can all pose their own threat to a student's academic performance. The way that academic performance is measured is through the ordinal scale of grade point average (GPA). A student's GPA determines many things such as class rank and entrance to graduate school. Much research has been done looking at the correlation of many stress factors that college students' experience and the effects of stress on their GPA. Hatcher and Prus (1991)<sup>[7]</sup> referred to these stress factors as academic situational constraints. Stressors affecting students can be categorized as academic, financial, time or health related, and self-imposed (Goodman, 1993)<sup>[8]</sup>.

The scientific research that specifically related leisure satisfaction to academic stress was that of Ragheb and McKinney (1993)<sup>[9]</sup> who established a negative association between academic stress and leisure satisfaction. Students report experiencing academic stress at predictable times each semester with the greatest sources of academic stress resulting from taking and studying for exams, grade competition, and the large amount of content to master in a small amount of time (Abouserie, 1994)<sup>[10]</sup>. Students report experiencing academic stress at predictable times each semester with the greatest sources of academic stress resulting from taking and studying for exams, grade competition, and the large amount of content to master in a small amount of time (Abouserie, 1994)<sup>[10]</sup>. Academic stressors include the student's perception of the extensive knowledge base required and the perception of an inadequate time to develop it (Carveth et al, 1996)<sup>[11]</sup>. Academic stressors include the student's perception of the extensive knowledge base required and the perception of an inadequate time to develop it ((Carveth et al, 1996)<sup>[11]</sup>. Another health-related factor that can influence student's GPA is class attendance. Attendance itself can be related to stress factors like insufficient sleep, job responsibility, illness and also having a family or children to care for. Having a class at seven in the morning can be a huge problem for students deprived of sleep, especially for those students who attend classes during the day and work at night.

Students who have children to take care of can often find themselves being held out of class for reasons like their children being ill or not having the proper child care readily available. Grades, motivation and prior GPA can also be reasons for class attendance (Devadoss & Foltz, 1996)<sup>[12]</sup>. With attendance having a major influence on academic performance, even to the point of some professors using it as a requirement to pass a course, it is a great indicator of a

student's overall GPA. One major prediction of class attendance is a student's GPA prior to enrolling in the class. Students who have done better in previous classes are likely to attend classes more frequently. Other factors in class attendance include the level of courses the student is taking. On average, junior and senior level courses have a higher attendance record than freshman and sophomore courses (Devadoss & Foltz, 1996)<sup>[12]</sup>. When stress is perceived negatively or becomes excessive, students experience physical and psychological impairment. Methods to reduce stress by students often include effective time management, social support, positive reappraisal, and engagement in leisure pursuits (Murphy & Archer, 1996)<sup>[13]</sup>.

Another study took the hours of sleep correlation with GPA to another level by taking factors into account like amount of sleep a student gets on the weekends versus during the week, the average time a student gets up in the morning during the week, and waking time on the weekends. Piekarska (2000)<sup>[14]</sup> pointed out that the essential factors for the formation of stress are frequent and strong. There is a related connection between the results of stress and psychological and personality characteristics. Some past research on sleep suggests that people who sleep fewer hours a night may have psychological maladjustment. Sleeping shorter amounts of time has shown to increase factors such as anxiety and stress, which have been associated with academic performance (Kelly et al, 2001)<sup>[15]</sup>. This is likely to affect the social relations both within the institution and outside which affects the individual person's life in terms of commitment to achieving the goals (Fairbrother & Warn, 2003)<sup>[16]</sup>. The pressure to perform well in the examination or test and time allocated makes academic environment very stressful (Erkutlu & Chafra, 2006)<sup>[17]</sup>. Institutional level stressors are overcrowded lecture halls, semester system, and inadequate resources to perform academic work (Awino & Agolla, 2008)<sup>[18]</sup>.

Teachers often neglect the emotional feelings of students during the teaching process, which can cause emotional stress and learning problems for students. In addition, students may feel unfamiliar situations like nervousness, worry, frustration, abasement, depression, etc. The instability of these emotions easily initiates unusual behavior, which then affects the learning achievements and adjustment ability of students if appropriate timely counseling is not given by the schools, teachers and parents, or if they cannot obtain appropriate concern from their peers or siblings. One finding that is contradictory to that of other studies is that students who work and are financially independent are more likely to attend classes and take their education more seriously. This is maybe due to the fact that paying for their education themselves makes them value their college careers more than students who do not pay for it themselves. There are many factors that can cause stress and influence a student's academic performance and therefore affect his or her overall GPA.

Recently, Desai (1999)<sup>[19]</sup> classified stressors into three major categories. 1- Physiological causes: The physiological category includes genetic and congenital factors, life experience, biological rhythms, sleep, posture, diet, fatigue, muscular tension, and diseases of adaptation.

2- Psychological causes: The psychological causes comprised nine elements; Perception, emotion, situation, experience sensation, decisions, memory, motivation, cognition and appraisal. 3-Environmental causes: This category of stressors consists of those factors which originate from the environment like ambient environment, physical events, social events, and biotic events.

### III. STAGES OF STRESS

Selye has considered that the absence of stress in life is not good and that it also has an active function. Stress can be divided into four major stages; a balance between under-stress and over-stress must be emphasized and good stress must be realized to reduce distress. The stages of stress are as follows:

1. *Overstress*: When the individual adjustment ability is outstripped, then over-stress is produced.
2. *Under-stress*: Inefficient needs cause individual under-stress and this lacks self-achieving desires.
3. *Good stress*: Under the reaction to certain stress, individuals have a happy and satisfactory feeling.
- 4- *Distress*- this occurs often and easily causes illnesses. Individuals develop an unhappy feeling.

### IV. FACTORS AFFECTING ACADEMIC STRESS

On the basis of above discussion It can be generalize that the factors affecting academic stress may be divided into two groups 1. Physiological factors 2. Psychological factors.

#### 1. Physiological Factors

Physiology of an individual is the result of interaction between genetics and environment. Therefore all the factors inherited from parents like intelligence and all factors related to environment like temperature, light etc are included in Physiological factors. The factors are exercise, nutrition, sleep, and work and class attendance. A student may find him or herself in a juggling act, trying to support a family, taking care of responsibilities, and at the same time trying to make the career. All of these factors can affect the grades of students, which ultimately affect the rest of their lives.

#### 2. Psychological Factors

Teachers often emphasize the acquisition of knowledge, so they often neglect the emotional feelings of students during the teaching process, which can cause emotional stress and learning problems for students. In addition, students may feel unfamiliar situations like nervousness, worry, frustration, abasement, depression, etc. The instability of these emotions easily initiates unusual behavior, which then affects the learning achievements and adjustment ability of students if appropriate timely counseling is not given by the institutions, teachers and parents, or if they cannot obtain appropriate concern from their peers or siblings (Chen et al, 2006)<sup>[20]</sup>.

### V. SYMPTOMS AND IDENTIFICATION OF STRESS STUDENTS:

Raised heart rate, increased blood pressure, Sweating, Raised blood coagulation rate, Increased ventilation, Subjective

Symptoms. Physiological Symptoms include: Tiredness and/or difficulty in sleeping, Muscle tension particularly in neck and shoulder muscles, Indigestion; constipation' diarrhea Behavioral Symptoms, Behavioral symptoms include: 1. Increased consumption alcohol, tobacco food etc. 2. Loss of appetite/excessive eating 3. Restlessness 4. Loss of sexual interest.

Stressed students get sick more often. They are more likely to overreact to small annoyances. Feeling of home sickness, fatigability and loneliness is also complained by them. While some stressed-out students have sleep disorders such as insomnia and hyper-somnia, and eating disorders such as bulimia nervosa and anorexia nervosa. Feeling upset, anxious or short-tempered for no apparent reason is a reaction due to stress. Increases in the number and severity of allergies and asthma attacks are also related to stress. Drug and tobacco abuse can be also seen in a stressed student.

### VI. PRECAUTION REGARDING OVER ACADEMIC STRESS OF STUDENTS

It has been pointed out that a continuous poor performance in school causes a child to lose his or her self-esteem, feel hopeless and consider him or herself to be of no value. The key to reducing distress is providing students with a feeling of control over their education, information about what to expect, and feedback regarding what can be done to improve their performance. Although it may not be possible to decrease the academic workloads of modern day students, it is important for universities to develop programs to help students deal with this stress. Actions could include the creation of adequate counseling resources and clinical advice. A brief tool with sound psychometric properties could be used to examine the nature and magnitude of the phenomenon in many educational contexts, to inform the design and implementation of interventions to reduce educational stress in schools. Students to write about their thoughts and feelings about an upcoming test immediately before they take the test can lessen the negative impact of pressure on performance.

For reducing stress, a student should sleep at least 7 hours per night. Plan each day to include a minimum of 20 minutes of aerobic exercise. Eat well-balanced meals, more whole grains, nuts, fruits and vegetables. Reduce alcohol and drugs because these substances may add to headaches, swelling, decrease coping mechanisms, and add to depression. Spend time each day with at least one relaxation technique - prayer, yoga and meditation. Get in touch, Hug someone, hold hands, or stroke a pet. Physical contact is a great way to relieve stress. Talk to someone about your problems (family member, friend and teachers). We can reduce stress by regulating your sleep schedule, getting up with ample time to prepare for class, and leaving your place by a set time. If you're having trouble getting to sleep before class, try relaxing activities such as meditation or gradual muscle relaxation before sleeping. If your schedule permits, complete your assignments early so you can stay ahead of due dates and get some time to wind down. Don't be afraid to say "no" to some unnecessary commitments to clear your schedule and relax. If Parent or guardian expectations are hanging over your shoulder, sit down and have a respectful conversation about new responsibilities as a student.

Socialization can help in reducing stress and help us in coping better with responsibilities. Students who are struggling for economic problems should do part time job, see if you qualify for scholarship, grants and loans for study. Take advantage of campus resources and choose a career path. Students who had better study habits i.e. planning and preparing well before examination, note taking, revision and discussion that facilitates good academic performance, leads to less academic stress.

## VII. CONCLUSION

The optimum level of stress is must for self-growth; it is also a motivation for people to progress actively. However, overstress causes problems and discomfort, and can have serious effects on people. Stress also play major role and affect academic success of students. Academic Stress has compound effect on physical and psychological aspect of student. The level of effect may be dangerous, threatening to physical, emotional, and mental health of students. Therefore, a teacher should help in consideration of some factors to control the impact of over academic stress in students' life through the development of skills i.e. Proper planning of task, Organizing things in psychological order, completing work in time schedule for smooth functioning, increasing awareness regarding knowledge and skill to handle technological malfunctions and breaks, remaining engaged with social activities of community, family and friends take extra time to completely unfinished work. All these activities keep refresh any student by reducing stress. The teachers, family members and psychologist can help in maintaining optimum level of academic stress to attain maximum academic output of student.

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