



DOES STRESSORS AND CLASS ATTENDANCE AFFECT ACADEMIC PERFORMANCE OF MEDICAL STUDENTS? A CROSS SECTIONAL STUDY.

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ABSTRACT

The academic performance of medical students has always been a source of concern to the academicians of medical fraternity. The study aims to find out the magnitude of the effect of class attendance on academic performance of medical students as well as the important stressors that may have an important and hidden impact over the academic performance of the medical students.

Material and method: 49 students of 1st academic year of AIIMS Patna have been recruited after proper consent. The questionnaire based assessment has been done to assess their socio-academic behavior as well as peer dynamics. Academic performance have been assessed by their performance in the institutional examinations. Perceived stress score has been assessed by the standard PMSS questionnaire.

Result: Mean performance score was found to be 50.51 where as Mean stress score was 30. Self-reported mean hours devoted for self-studies varied from 0.5 hr. to 6 hr. with a mean of 3.09 + 1.41 hrs. 45 out of 49 students (91%). Class attendance has been found to be the most important factor affecting academic performance. The major source of stress among medical students is Time constraint, which also indirectly affect their sleep hours and sleep qualities. Besides, Competitive environment, less scope of self directed recreational activities etc are the source of stress for them.

Conclusion: Attendance is an important determinant of academic performance and time constrains are the major source of stress among medical students which need to be addressed properly for their better academic performances.

KEYWORDS : Academic performance, Attendance, Stress, Medical student

Introduction:

Academic performance of medical students is a source of concern in majority of the medical institutes of India. Various factors are known to affect the academic performance of medical students including stress, study hours, attitude of the student towards study etc. Many researchers have shown that class attendance is yet another important factor which affects performance of students. Student's non-attendance is a problem that extends beyond the school. It affects the student, their families, and the community⁽¹⁾ Attendance is considered to be an important factor determining the performance of students. Various studies^(1,2,3) had shown significant relationship between school attendance and academic achievements. When student non-attendance increases, research has shown a corresponding decrease in student achievement (Herberling & Shaffer, 1995). It has been seen that habitual absentees are more prone to long term unemployment, early discontinuation of education and more responsible for law and order disharmony⁽⁴⁾. Student absenteeism is listed as the number one problem in the daily administration of the schools in the early 1970s, according to a random sample of 500 members of the National Association of Secondary School Principals (Defours, 1983; Rothman, 2001). Most of the absenteeism related studies had been conducted in early school age children and the attitude of absenteeism had been attributed to the childhood illnesses or the parents neglect to child education. (Kozinetz, 1995). Absenteeism has also been found to be detrimental to students' achievement, promotion, self-esteem, and employment potential (Bolo, 1983; DeKalb, 1999). Fleming and Zafirau (1982) found that over three-fourths of school failure rates were explained through student attendance percentages. In addition, many research indicates that regardless of social and economic factors the schools with higher attendance rates achieved higher test scores (Wheat, 1998; Greene, 1990; Applegate, 2004) Most of the absenteeism related studies had been conducted in early school age children and the attitude of absenteeism had been attributed to the childhood illnesses or the parents neglect to child education.

Present study aims to find out if academic performance of newly

admitted medical students get affected by their attitude towards attending classes, and, if so, is it more significant than other known factors like perceived stress⁽⁵⁾, study hours and pressure of study⁽⁶⁾ and self-esteem^(7,8).

The study result may have a long term impact on the planning and implementation of teaching methodology.

Material and methods:

49 students of first year MBBS of AIIMS Patna has been recruited for the study after taking due consent. **All the 1st year medical students of AIIMS Patna who spent at least 6 month in the institute and appeared at least one term/semester exam in all the three pre-clinical departments were included in the study. Exclusion criteria included** those who were either not consenting for the study or the one who remained absent from the institution for some valid medical or other reason for longer period (at least 15 days).

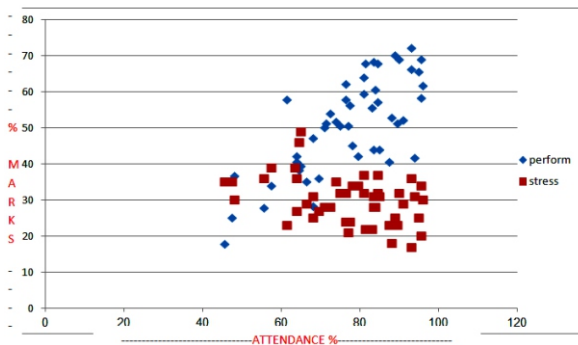
A brief introduction session had been organized followed by taking written consent regarding participation in the study. Questionnaires had been given to all the willing participants for the assessment of student's behaviour based upon five parameters viz. **class attendance, self-reported study hours, self-assessed performance and satisfaction score, stress level based upon perceived Medical Student's Stress questionnaire (PMSS questionnaire based upon 4-point Likert scale) and student's academic performance⁽⁶⁾.** The feedback had been taken before the announcement of the results so that it couldn't affect their subjective responses.

Data regarding class attendance and academic performance had been collected from all the pre-clinical departments/ academic section of the institute after due permission and consent from the participants. Performance score for each student had been calculated by computing marks percentages scored in all pre-clinical subjects by the student. **Marks of only MCQ and OSPE section have been considered for calculation to avoid any**

possible subjective bias. All the ethical issues have been taken care of at all the stages. Participants had been assured of anonymity of their feed-back so that they could provide honest feedback. Statistical software SPSS version 20 has been used for statistical analysis.

Result:

49 out of 50 students admitted to the first ever batch of AIIMS Patna had consented for the participation in the study. Mean performance score was found to be $50.51 \pm 13.23\%$. 20 out of 49(40.8%) students scored a less than 50% mark which is used to be the passing cut off in individual subjects. Mean stress score was 30 ± 6.59 whereas self-reported mean hours devoted for self-studies varied from 0.5 hr. to 6 hr. with a mean of 3.09 ± 1.41 hrs. 45 out of 49 students (91%) showed trend of using various computer based technologies for their self-studies. Out of those 45 subjects who are using technology for their self-study,, 26 subjects did not used it before entering in the medical institution where as 19 subjects were accustomed to use it for study purpose earlier too. 4 out of 49 students neither used it before nor after entering in the institute.



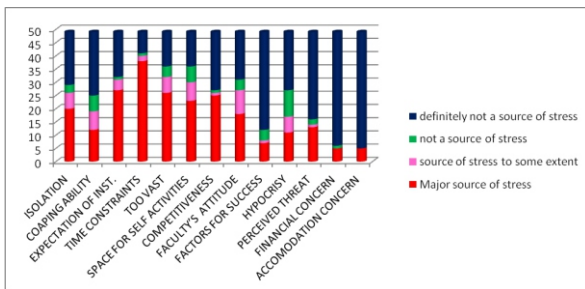
Graph 1: Effect of stress and attendance on academic performance

Table 1: Descriptive analysis of various factors related to academic performance

Factors	Range	Minimum	Maximum	Mean	Std. Deviation
STRESS	32.00	17.00	49.00	30.0000	6.59545
ACAD. PERFORMANCE (% marks scored)	54.40	17.80	72.20	50.5143	13.23351
ATTENDANCE (%)	50.50	45.50	96.00	76.8571	13.31274
STUDY HOURS	5.50	.50	6.00	3.0918	1.41301

Correlation study:

Table 2 presents the correlation of various factors with academic performance. Class attendance appears to have better correlation with academic performance ($R^2 = 0.56$) though other factors like perceived stress, self-assessed academic satisfaction and academic performance scores also showed positive correlation and significant statistically.



Graph 2: Major stressors to the medical students in the study population

Correlation study shows that although stress does affect performance but class attendance is one of the most important

factors affecting academic performance. Self assessment and academic satisfaction score (as a measure of self esteem) are another important parameters affecting academic performance significantly. Study hours and use of technology do not have significant effect over academic performance.

Table 2: correlation of various factors affecting academic performance

Parameters	Perform ance vs. STRESS SCORE	Perform ance vs. attenda nce	Perform ance vs. Self ass. Perform ance score	Perform ance vs. Self ass. Academ ic satisfac tion score	Perform ance vs. hours of self study	Perform ance vs. use of tech. for studie s
Pearson r (at 95% CI)	-0.07525	0.8494	0.5018	0.4424	0.08405	-0.07650
R squared	0.1219	0.5571	0.2518	0.1957	0.007064	0.005852
P (two-tailed)	0.0139	< 0.0001	0.0002	0.0015	0.5659	0.6014
P value summary	*	****	***	**	ns	ns
significance	yes	yes	yes	yes	no	no

Step-wise multiple regression analysis model shows that when attendance is included in the model it is one of the most important factor affecting academic performance($r=0.76$) and stress becomes non significant($r=0.08$).

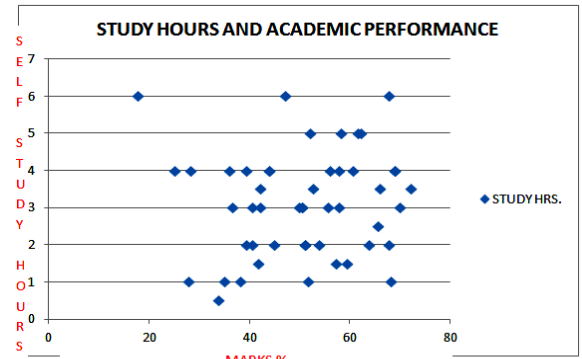


Figure 2: STUDY HOURS AND ACADEMIC PERFORMANCE

Graph 3: Relation of academic performance with self acclaimed study hours

As far as hours devoted to study is concerned, no correlation could be found between the hours of study and the academic performance of the medical students in the present study as depicted in the following graph.

Discussion:

The study has been undertaken with intent to determine the role of various factors that affects the academic performance of medical students even in the institute of national repute like AIIMS. The study focused upon parameters such as academic performance of first year medical students, their class attendance, hours devoted over self study, perceives stress due to various factors and self esteem measured by self assessed score of academic satisfaction and self assessed academic performance. Besides role of technology like using internet based materials, attending virtual classrooms has been assessed upon their overall academic performance. The major source of stress to the new entrant medical students included time constraint, vastness of the course curriculum, lack of time and space for extracurricular activities, expectations the institute and family from them etc. 55% of the students felt the attitude of the faculties is

the major source of stress. This is in agreement with previous studies where academic pressure had been found to be the major source of stress among medical students^(9, 10) unlike earlier studies financial and accommodation concern was not the major source of stress among the subjects of present study.

Another important parameter which is of major concern is the class attendance. The study shows that students attending classes more consistently have scored more in the examinations in comparison to those who were less keen to attend classes. This is in agreement with many other studies^(11,12)

Stress and medical students: The cause of stress in medical students is many folds. It may include the elaborate course structure, time constraints, lack of recreation or performance pressure^(13,14,15,16,17).

In present study the major source of stress among medical students include Time constraint which also indirectly affect their sleep hours and sleep qualities⁽¹⁸⁾. More than 81% of students feel it as a source of stress and more than 77% of them consider it as a major source of stress. Besides, vastness of the course, attitude of one or more faculty towards them, competitiveness among peers and high expectations from them are other major source of stress among the medical students in the study population. These findings are well in agreement with many of the previous studies.^(14,16,17,18)

Conclusion:

Academic performance of medical students is governed by multiple factors but class attendance appears to be one of the most important determinants. Stress is another important factor and needs appropriate measures to take care of. The study with a wider data base may give some valuable insight to the issue which is very pertinent to the academic point of view of the new medical entrants.

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