

# Analysis of Factors Affecting Academic Performance of MBBS Students in Pathology.

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Received: July 2017

Accepted: July 2017

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## ABSTRACT

**Background:** Academic performance of medical students is influenced by multiple factors. Identification of factors associated can help in improvement of learning and reducing failure rate. Aim: Aim of study was to identify factors that students perceive to affect their academic performance. **Methods:** Study was conducted at department of Pathology, SHKM Government medical college after getting ethical approval. Ninety-one students of 4th semester participated in the study. Students responded to a self-administered pretested questionnaire and were subsequently interviewed for the factors they perceive to be affecting their academic performance. Results were categorized and analysed by descriptive statistical methods. **Results:** Different factors affecting academic performance were categorized into – Individual factors, Teacher related factors, Factors related to use of teaching – learning methods, factors related to learning environment and related to family. Individual factors were recognized to be the most important factor influencing academic performance of students. Important factors having adverse affect on academic performance were found to be lack of interest, difficulty in understanding, difficulty with language and time management issues. **Conclusion:** Academic performance of students is affected most commonly by their personal attitude. Guidance by teachers, use of different types of teaching learning methods, learning environment and family issues are the other factors that influence academic performance. Identification of these factors is important for charting out a proper road map for teaching- learning activities and providing a better learning environment to the students.

**Keywords:** Academic performance, Factors, MBBS Students.

## INTRODUCTION

Medicine is one of the longest and most stressful course of undergraduate study program. It is a complex and demanding field of study and medical undergraduates not only require skill and competence in multiple disciplines, they also need to acquire knowledge on a wide-range of subjects over a limited time period.<sup>[1]</sup>

In India, students are admitted to MBBS course on merit basis through entrance examination. Every student has to undergo a period of certified study extending over 4 ½ academic years divided into 9 semesters i.e. of 6 months each for the subjects comprising the medical curriculum followed by one year of compulsory rotating internship. During this period, students are subjected to summative

Assessments in which they have to score more than 50% in theory as well as practical/clinical examination to pass.<sup>[2]</sup> Multiple factors are known to affect learning and academic performance, including personality, IQ, family background, gender, age, learning styles, methods of study, parental and peer pressure and even psychological ailments (if any).<sup>[3,4]</sup> But weak academic performance and high failure rate remains a persistent problem. Detention in any subject due to low attendance or failing before attaining final medical degree provides extra burden on the students as well as on the parents. Poor academic performance and poor attendance often indicates difficulties in adjusting to new environment.<sup>[5]</sup>

Ours is a relatively new medical college with 3 batches of 100 students admitted to MBBS course. Students are also new to environment of a medical course and many of them perform poorly during different formative assessments.

Recognition of the factors that influence academic performance among students can assist in reducing the failure rate in medical students.

Hence, this study was undertaken to find out different causes related to learning styles, teaching

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methods or learning environment that affect the academic performance of students as perceived by them.

### Aims & Objectives

- To identify factors that undergraduate medical students perceive to affect their academic performance in Pathology.
- To recommend measures to improve academic performance based on correction of factors identified.

## MATERIALS AND METHODS

The Study was conducted in the Department of Pathology at SHKM, Government Medical College, Nalhar.

### i. Planning

Ethical clearance was taken from the institutional ethics committee before starting the study.

All the ninety-five 4th semester students of 2013 batch were planned to be included in the study, out of which ninety-one students participated.

It was decided to base the study on analysis of results of a self-administered questionnaire and a semi-structured interview.

A discussion with faculty of department of pathology was held to sensitize them about the proposed project and to take their inputs for the same.

### ii. Designing & validation of Questionnaire

A prior literature search was done for factors that affect academic performance of students.<sup>[6,7]</sup> A relevant Questionnaire to identify different factors affecting academic performance was developed with the help of faculty members in department of pathology.

Questionnaire had 26 questions in english focusing on important factors associated with academic performance of the students [Annexure I]:

- Individual factors like interest, problems related to language/ understanding
- Teacher related factors
- Impact of teaching –learning methods used
- Factors related to learning environment
- Factors pertaining to family

Majority of questions had responses graded on a Likert scale of 1 to 5, while some had clear options given to identify specific factors.

The questionnaire was validated by peer review and pilot tested on a group of 10 students of 2014 batch who were not part of the study group.

### iii. Administration of Questionnaire and Interview

Ninety one out of 95 students of 4th semester, 2013 batch participated in the study. Four students were absent due to unknown causes. Out of these students, four were girls and 87 were boys.

Students were administered questionnaire after obtaining their informed consent while seated in the

lecture hall. Students were not allowed discussion among themselves while answering it.

Subsequently, they were interviewed about perceived factors affecting their academic performance by open ended questions and were told to write down their responses.

### iv. Analysis

Responses of questionnaire were analysed using SPSS version 20 to determine frequency, percentages, mean, and standard deviation.

For interview based open questions, a coding of responses was done and important categories of factors were identified.

## RESULTS

Results of questionnaire and interview were as follows:

### 1. Results of questionnaire

From the analysis of responses to questions with clear options [question no: X & Y] in the questionnaire, it was found that 52.7% of students perceived their personal attitude to be most important factor in improvement of their academic performance while 23.1% perceived it to be affected by teachers [Figure 1]. Similarly, most common factor that adversely affects the academic performance was also personal attitude (63.7%), followed by difficulty in understanding (22%). [Figure 2]

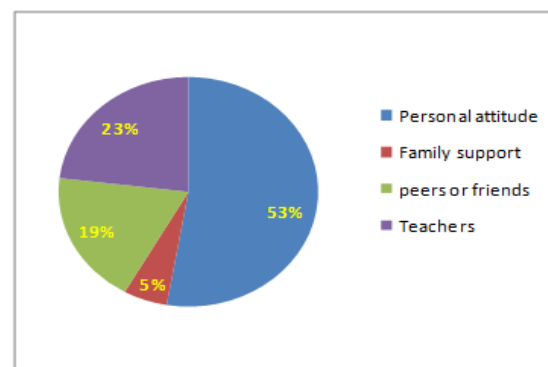


Figure 1: Factors helping in improving academic performance.

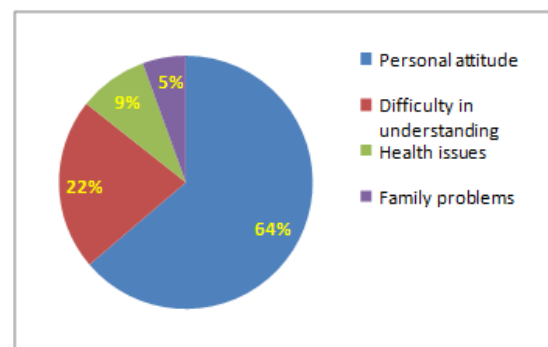


Figure 2: Factors adversely affecting academic performance.

## A. Results of questions with responses graded in Likert scale( in %)

Question	Strongly Agree (SA)	Agree(A)	Unsure(U)	Disagree (D)	Strongly Disagree(SD)
I am able to concentrate & understand topics in pathology	13.2	64.2	14.3	5.5	2.2
I am clear about the learning objectives of the subject	17.6	71.4	7.7	2.2	1.1
I am able to retain the carry home message after each class	12.1	49.5	23.1	13.2	2.2
Problem with language ( English) adversely affects my academic performance	5.5	14.3	11.0	34.1	35.2
Teachers persona affects my academic performance	19.8	35.2	26.4	16.5	2.2
Teaching giving clear examples is helpful for my learning	17.6	71.4	7.7	2.2	1.1
Feedback from teachers improves my academic performance	15.4	59.3	16.5	7.7	1.1
Approachability to teachers after class helps in improving my academic performance	11.0	56.0	26.4	5.5	1.1
Time table is well suited for my learning	9.9	49.5	22.0	15.4	3.3
Class room teaching is helpful in improving my academic performance	17.6	65.9	8.8	4.4	3.3
Being able to ask questions during class helps in my learning	16.5	52.7	23.1	6.6	1.1
Integration of important topics helps in improving my learning	24.2	58.2	12.1	3.3	2.2
I find regular class tests helpful in improving my academic performance	27.5	57.1	6.6	6.6	2.2
Case based learning/problem based learning helps in improving my academic performance	22.0	64.8	9.9	2.2	1.1
Hostel environment is conducive to my learning	11.0	41.8	16.5	23.1	7.7
Guidance from senior students is required for improving my academic performance	19.8	51.6	12.1	6.6	9.9
Frequent extra curricular activities adversely affect my academic performance	6.6	24.2	6.6	42.9	19.8
Does the geographic location of college in remote rural area adversely affects my academic performance	22.0	41.8	12.1	17.6	6.6
Availability of learning resources ( library, internet facility) helps in my learning	19.8	58.2	5.5	9.9	6.6

**Annexure I**

Age

Male / Female:

Roll No:

Medical College: SHKM GMC,Mewat

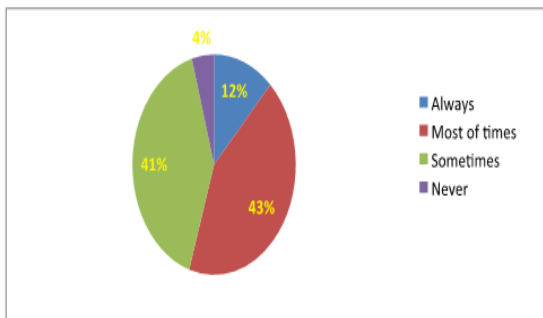
Please indicate whether you:

Strongly agree (SA), Agree (A), Unsure (U), Disagree (D), Strongly Disagree (SD) with the following statements.

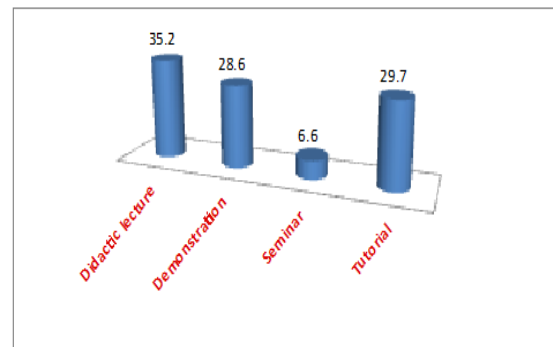
		SA	A	U	D	SD
A	Time-table is well suited for my learning	SA	A	U	D	SD
B	I am able to concentrate and understand topics in pathology	SA	A	U	D	SD
C	Feedback from teachers affects my academic performance	SA	A	U	D	SD
D	Teaching giving clear examples is helpful for my learning	SA	A	U	D	SD
E	I am clear about the learning objectives of the subject	SA	A	U	D	SD
F	Being able to ask the questions during class ,helps in my academic performance	SA	A	U	D	SD
G	Class room teaching helps in improving my academic performance	SA	A	U	D	SD
H	Integration of important topics helps in improving my learning	SA	A	U	D	SD
I	I am able to retain the carry home message after each class	SA	A	U	D	SD
J	Hostel environment is conducive to my learning	SA	A	U	D	SD
K	I find regular class tests helpful in improving my academic performance	SA	A	U	D	SD
L	Learning resources available ( Library, Internet facility) help my academic performance	SA	A	U	D	SD
M	Problem with language ( English) adversely affects my academic performance	SA	A	U	D	SD
N	Frequent Extra -curricular activities adversely affect my academic performance	SA	A	U	D	SD
O	Case based learning/Problem based learning helps in improving my learning	SA	A	U	D	SD
P	Guidance from senior students is required for improving my academic performance	SA	A	U	D	SD
Q	Approachability of teachers after class helps in improving my academic performance	SA	A	U	D	SD
R	Does thr geographic location of college in remote rural area adversely affects my academic performance	SA	A	U	D	SD
S	Teacher's persona affects my academic performance	SA	A	U	D	SD

T	I study regularly & revise the topics covered after the class	Yes
		No
		Some times
U	I study pathology daily for	< 1hr
		> 1hr
		Not on daily basis
V	I find learning more helpful by	Blackboard teaching
		Power Point teaching
W	Most effective method for my learning is	Didactic Lecture
		Demonstration / Practical
		Seminar
		Tutorial
X	Factor which improves my learning most significantly is	1 Personal attitude
		2 Family support
		3 Peers or friends
		4 Teachers
Y	Factor which adversely affects my academic performance most significantly is	1 Personal attitude or learning pattern
		2 Family problems
		3 Difficulty in understanding
		4 Health issues
Z	I am motivated to participate in class	1 Always
		2 Most of times
		3 Sometimes
		4 Never

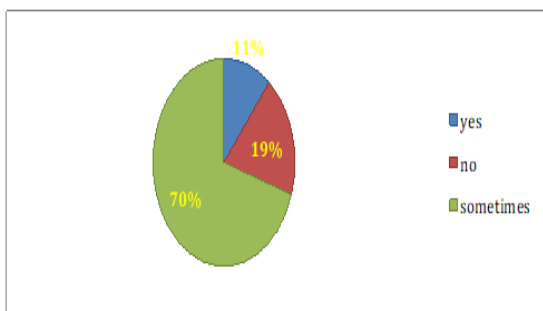
**B. Results of responses to other questions:**



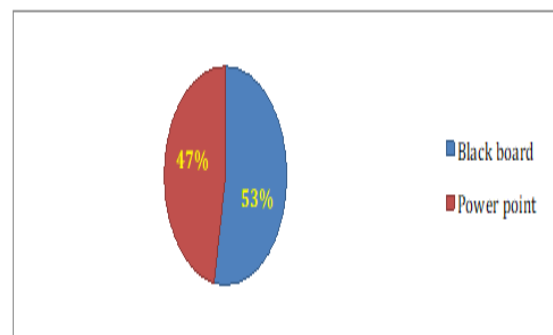
**Figure 3: Motivation to participate in the class.**



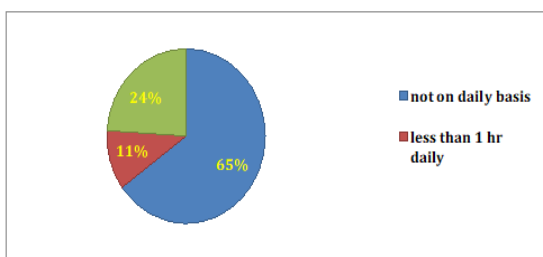
**Figure 6: Most effective teaching method for learning.**



**Figure 4: Revising topics after the class.**



**Figure 7: Teaching method found to be most helpful**



**Figure 5: Regularity in studying pathology daily.**

Based on responses to all the questions, different factors affecting academic performance were categorized into – Individual factors relating to lack of interest or difficulties in understanding , Teacher related factors like personality & approachability of teachers, Factors related to use of teaching – learning methods, factors related to learning environment and family related factors.

**I. Individual factors**

Individual factors were recognized to be the most important factor improving academic performance by 53% of students.

Seventy eight percent of students strongly agreed or agreed that they are able to understand various topics and 55% responded that they are always or most of times motivated to attend the classes. [Figure 3]

73.6% of the students strongly agreed or agreed that they are clear about learning objectives of the subject. 61.6% agreed that they retain the carry home message after each class while 23.1% were unsure and 15.5% disagreed to it.

19.8% of the students strongly agreed or agreed that problem with language affects their academic performance.

18.7% students responded that they don't revise the topics covered after each class [Fig 4] and 64.8% responded that they don't study pathology on daily basis. [Figure 5]

**II. Teacher related factors**

Twenty three percent of students responded that teachers play most important role in improving their academic performance.

Fifty percent of students agreed that teachers personality affects their understanding where as 26.4% were unsure and 18.7% disagreed to it. 74.7% agreed that feedback from teachers and 67% agreed that approachability of teachers helps in improvement of their academic performance.

**III. Factors related to use of Teaching – learning methods**

83.5% of students agreed that class room teaching helps in improving their understanding. Use of clear examples during teaching (89%), integration of topics (80.4%). Case based or problem based learning (86.8%) and being able to ask questions during class (69.2%) were also considered as factors improving academic performance.

Among the teaching methods, didactic lectures (35.2%) & tutorials (29.7%) were considered to be the most effective for learning followed by demonstrations (28.6%) and seminars (6.6%). [Figure 6]

52.7% of students found learning to be more effective by use of black- board while 47.3% liked use of power point by teacher. [Figure 7]

Regular class tests were also found to improve academic performance by 84.6% of students

**IV. Factors related to learning environment**

Time table was found to be well suited by 59.5% of students while 18.7% disagreed. 78% responded that availability of learning resources (library, internet) affects their academic performance. Frequent extra-curricular activities were not perceived to be having adverse effect by 62.7% while 30.8% found them to be adversely affecting their academic performance.

As the batch under study is 1st academic batch having no seniors, 71.4% responded that guidance from senior students is important for improving academic performance.

The college is located in remote rural area and 63.8% of students responded that geographic location of college in a difficult area also adversely affects their academic performance.

Hostel environment was found to be conducive for learning by 52.8% and non-conducive by 30.8% of students.

**V. Family related factors**

Family factors were perceived to be affecting academic performance by only 5% of students.

**2. Results of interview**

Students were interviewed for the factors improving or adversely affecting their academic performance and asked about the reasons for not attending the classes by open ended questions and results were analyzed.

Absence from class is a common factor associated with poor academic performance.<sup>[8]</sup> Hence, Academic performance of students was correlated with their attendance, but no statistically significant correlation was found in the present study. However, important causes for bunking class were illness (30.7%), sleepiness in early morning classes (23.1%) and going home (20.5%). Other factors were family issues (7.7%), getting late for class, completion of attendance required or boredom [Figure 8].

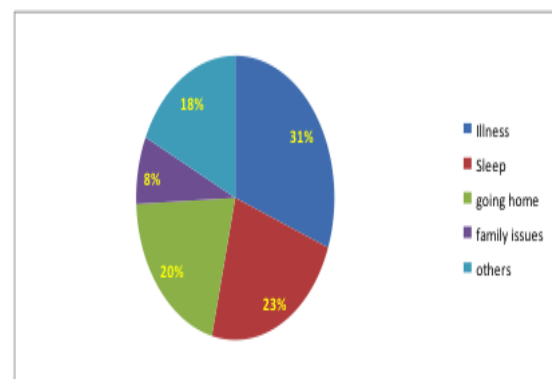


Figure 8: Causes of absenteeism

**a) Factors perceived to be adversely affecting academic performance**

Interview results showed that the factors adversely affecting academic performance were Individual in 46% cases, 30% related to the environment, 22% could be related to teaching and 3% to the family issues.

Among individual factors, lack of personal effort, too much addiction to smart phones, internet or movies and lack of effective time management were the main reasons adversely affecting academic performance.

Environmental factors were mainly perceived to be noisy atmosphere in hostels (10%). Non availability of sources of recreation, food and water quality, extremes of temperature were other factors reported. Among factors related to teaching – learning, students perceived vast syllabus as major factor adversely affecting their learning. Other factors identified were – lengthy non- interactive lectures , lengthy clinical postings giving less time for studies, too many holidays and too many extra- curricular activities. Few students (2%) perceived frequent class tests to be hindering their learning but the number was less than those who found it helpful in improving their academic performance.

**b) Factors perceived to be helpful in improving academic performance**

Factors which students perceived to be helpful in improving their academic performance were mainly tutorials (20.5%), Guidance from teachers (13.7%), Regular class test (13.7%) and Group study (10.3%). Four percent of students admitted that appreciation from teachers helps in improving their academic performance.

**3. Summary of results**

From the analysis of results of questionnaire and interview, it can be interpreted that most significant factor affecting academic performance is personal attitude of student.

Important factors having adverse affect on academic performance are lack of interest, difficulty in understanding, language problem & time management issues (addiction to smartphones).

Main causes of not attending the classes are ill health, sleepiness and going home.

Regular tests, providing feedback, tutorials, group discussion, integration of topics and appreciation by teachers are some of the factors that help in improving learning & academic performance of students.

## DISCUSSION

Academic performance of medical students is affected by multiple factors including academic burden, parental and peer pressure and even psychological diseases.<sup>[4]</sup>

Factors perceived to be adversely affecting academic performance:

Our study shows that factors perceived by students causing low academic performance are Individual in 46% cases, 30% related to the environment, 22% related to teaching and 3% to the family issues. Pinyopornpanish M et al in their study also found that factors causing low academic performance are predominantly individual in 79% of cases with only 15.5% related to environment and 5.2% to family.<sup>[8]</sup>

In the present study, significant individual factors affecting student's academic performance were found to be related to lack of effort, difficulty in understanding, addiction to smart phones or games,

not being regular in studies or not revising the topics taught.

Problem with language of instruction i.e english is a well known cause of difficulty in understanding and expression during viva and theory examination.<sup>[9]</sup> In their study, Mandal et al found that 14% of their study population faced difficulty in understanding the English.<sup>[4]</sup> We noted that 20% of students in our study group reported to be having this problem in understanding the English.

Few other factors identified peculiar to the institution were lack of guidance from senior students and lack of facilities due to location of college in a remote area.

Important factors for absenteeism from classes were found to be illness (30.7%), sleepiness specially for early morning classes (23.1%) or going home (20.5%). Earliar studies have also pointed out that most of the medical students work late into night and don't get enough sleep.<sup>[10]</sup>

**Factors perceived to be helpful in improving the academic performance**

Factors which students perceived to facilitate their learning and improve academic performance were also personal attitude towards studies and guidance by teachers. Frequent class tests, feedback and appreciation from teachers, interactive lectures with use of clear examples, integration of topics and problem based learning were also found to be helpful in understanding. Didactic lectures and Tutorials were found to be the most useful methods of instruction followed by Demonstrations. Students found tutorials to be interactive and helpful in clearing their concepts. Group study and discussion with peers was also identified as helpful in understanding by students.

**Outcomes**

This study helps in developing appropriate teaching approach for better understanding of students. Some of the factors associated with poor academic performance are correctable that can be worked upon.

**Limitations**

- Corelation between factors associated with students with good and low academic performance could'nt be done.
- Time was a limiting factor in interviewing all the students.

## CONCLUSION

- Personal attitude of students is the most significant factor that affects the academic performance.
- Teachers play important role as facilitators by providing proper guidance & feedback to the students.

- Teaching learning methods used influence the academic performance of students. Methods used should be interactive and clinically oriented for better understanding.
- Correctable environmental factors like availability of facilities of recreation, food & hostel environment also affect academic performance.

### **Recommendations**

- Counseling should be provided to students having problems with lack of interest or issues with time management.
- Special language classes can be held for students having difficulty with English.
- Feedback should be given to students with appreciation for good performance.
- Teaching methods should be more interactive & clinically oriented. Use of both black-board and power point should be encouraged in didactic lectures.
- Environmental issues can be corrected by provision of facilities of sports and healthy recreation.

### **Acknowledgement**

I acknowledge the MBBS Students of 2013 & 2014 batch, SHKM Government Medical College, Nalhar, Haryana for their enthusiastic participation in the study.

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**How to cite this article:** Sharma P, Singh P, Kalhan S, Garg S. Analysis of Factors Affecting Academic Performance of MBBS Students in Pathology. Ann. Int. Med. Den. Res. 2017; 3(5):PT09-PT15.

**Source of Support:** Nil, **Conflict of Interest:** None declared