

Correlation between Attendance and Performance of Undergraduate Medical Students in Ophthalmology: A Prospective Study

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Abstract:

Introduction: Education is an ever changing system and medicine is one of its most crucial domains. MCI has been changed to NMC and CBME, SDL, AETCOM etc. are some newer concepts introduced for the benefit of the medical students and the society. Technical advancements have also been propagating at a faster pace, which of course can act as a double edged sword for the students. Advances in simulation technology and virtual learning environments provide realistic clinical scenarios and interactive experiences that can substitute or complement traditional classroom learning. Students may find these methods more engaging and effective than passive classroom teaching. This present scenario has created doubts regarding the importance of physical attendance in didactic lectures. Easy availability of study material demotivates students to attend the regular classes. Multiple factors have been proposed responsible for absenteeism. Studies regarding the attendance and its correlation with academic performance have been done in past in different streams, but very few are available in the speciality of Ophthalmology. Hence, this study was carried out with the aim to explore the correlation between the academic performance and lecture attendance among phase III part I MBBS students. We have also tried to analyse the factors which prevent the students from attending the lectures on the basis of questionnaire provided to them.

Methodology: Attendance of the 96 students of phase III part I was recorded for first 4 months and based on the percentage of attendance two groups were made i.e. Group A (>75% attendance) and Group B (<75% attendance). The students in both the groups were further categorized on the basis of marks obtained in the theory paper of Ophthalmology subject in the first terminal examination. Based on their marks obtained they were split into two sub groups -1 (>60% marks) and 2 (<60% marks). Analysis was done using Chi square test and Pearson correlation to observe the relationship between lecture attendance and the marks obtained in Ophthalmology subject in the first terminal examination. Semi open ended questionnaire was used to explore the causes of short attendance.

Result: Among 96, 39 students had >75% attendance and out of which 25 (64.10%) attained more than 60% marks, while only 6 (10.41%) out of 57 students of group B (having <75% attendance secured >60%) marks.

Conclusion: Attendance and academic performance are closely linked in educational settings. This study shows a positive correlation between physical attendance and academic performance. Students who attend classes regularly tend to perform better academically compared to those with poor attendance. Strict or inflexible attendance policies may sometimes have unintended consequences, discouraging attendance rather than encouraging it. Encouraging students to attend classes regularly and addressing any underlying issues affecting attendance can contribute positively to their academic performance.

Keywords: MBBS, Undergraduate, Didactic Lecture, Attendance.

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Introduction

In the realm of medical education, the interplay between lecture attendance and academic performance among MBBS (Bachelor of Medicine,

Bachelor of Surgery) students remains a subject of continuous research and discourse.[1,2,3] Assessment of teaching and learning is an

important factor for continuous improvement in the performance. Not only the students need assessment of their academic performance, but the teachers should also be scrutinised to modify their pattern of teaching. Multiple factors have been identified, which affect the academic performance of the student like family background, interest in the subject, influence of the teacher and attitude and behaviour of the student. [3] Whether the student has chosen his carrier willfully or has been imposed by the parents forcefully also makes a great difference in the learning outcome. It is the point to ponder amongst the teaching faculties, as to how to improve the attendance of the students in lectures and clinical postings. Even NMC is becoming stringent in implementing the rules to increase the physical presence of the undergraduates in lectures by prohibiting them from appearing in the university exams, if the lecture attendance is below 75%. [4]

One of the main reasons for low attendance in present scenario is readily available learning material on internet and it's anytime, anywhere accessibility at a very low cost. Despite being a comfortable option for the students, this distant learning in medical field is different from others as a medical graduate has to deal with live patients. The experience and guidance of the teacher and expertise to make diagnosis cannot be compared with the practical knowledge gained online or by books only.

This study was conducted among phase III part I MBBS students to correlate the didactic lecture attendance and academic performance in the subject of Ophthalmology. We also aimed to extract the reasons of low attendance on the basis of a semi open ended questionnaire provided to the students.

Material and Methods:

The present study was a Prospective analytical study conducted in the department of Ophthalmology from May 2021 to December 2021. Ethical clearance was taken from the ethical committee of our institute prior to the commencement of the study. Voluntary participation of the students was demanded after taking informed and written consent. Student taking excessive leave after getting enrolled under some unavoidable circumstances i.e. medical condition or some emergency/casualty in the family

were excluded from the study. A total of 96 undergraduate medical students of phase III part I were finally included in this study. The attendance of the ophthalmology subject theory classes was recorded for first 4 months and based on the percentage of attendance two groups i.e. A (>75% attendance), and B (<75% attendance) were made. The scores of the theory paper of Ophthalmology subject obtained by the students in their first terminal examination were noted. A total of three teachers were involved for evaluating the answer sheets. To remove the biasness of marking, each teacher was assigned definite questions of each answer booklets. Percentage of the marks scored by the students was calculated and they were divided into two groups i.e. group 1- marks >60% and group 2- marks <60%. A semi open ended questionnaire regarding the factors affecting attendance in the lectures was prepared and given to all the students through Google forms to fill without disclosing their names. The teaching faculty of Ophthalmology department were also asked to attempt an open ended questionnaire to express their perception about the factors affecting attendance of students. Conclusions were drawn after analysing the responses of the students and the teachers.

Statistical Analysis:

The analysis was done using Chi square test having degree of freedom 1 and Pearson correlation statistical tests to see the correlation between attendance and performance among different groups. A p-value of <0.05 was considered to be significant.

Results:

The present study was conducted among MBBS phase III part II students of our Medical College from May 2021 to December 2021. Initially randomly selected 100 students, who gave their consent for participation, were enrolled in the study, but four of them were excluded as they could not appear in their first terminal Ophthalmology theory examination. Remaining 96 students were categorized into group A having >75% attendance and group B having < 75% attendance (Fig 1). Of these 96, a total of 39 (40.625%) students were in group A and 57 (59.375%) students in group B. There was a positive and significant correlation between marks obtained and attendance percentage for total students.

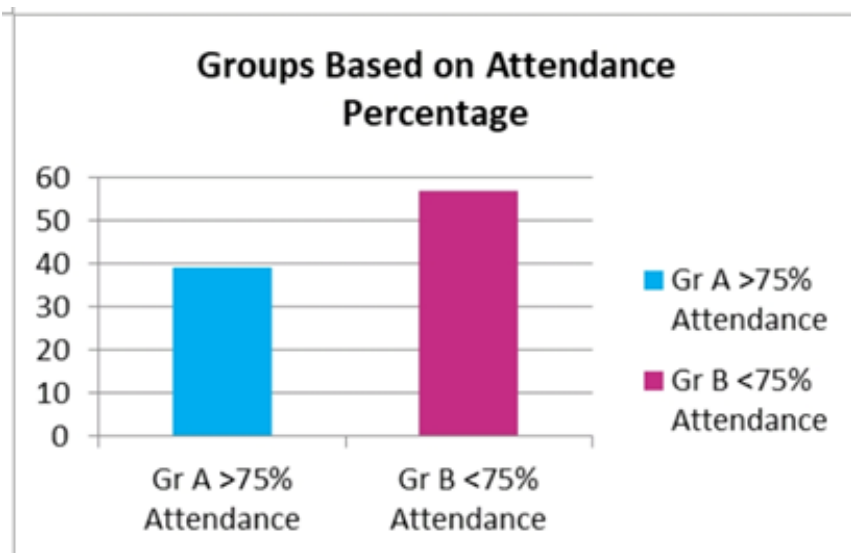


Figure 1: groups on the basis of attendance

Our study revealed that 64.10% i.e. 25 of 39 students from group A and 10.41% i.e. only 6 students from group B scored more than 60% percent marks in their first terminal Ophthalmology examination (Fig 2 and 3).

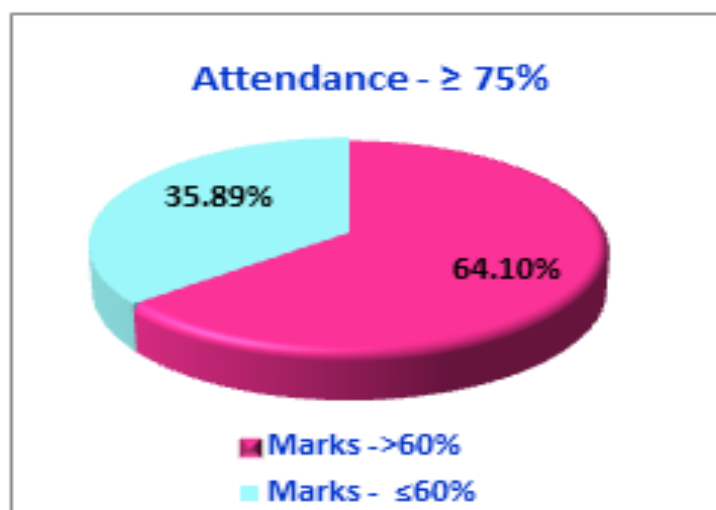


Figure 2: Marks wise distribution of students in group A

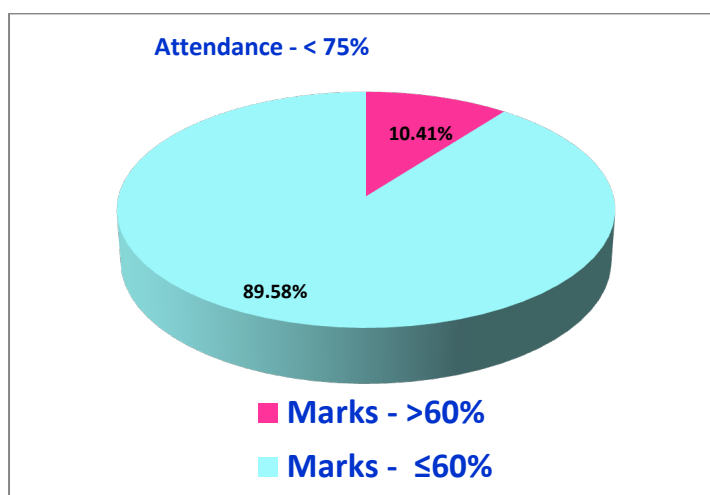


Figure 3: Marks wise distribution of students in group B

Gender wise calculation of mean marks in three out of four subgroups highlighted that female students had better mean score as compared to their male counterparts i.e. 67.58% vs. 61.46%, 62.09% vs. 60.65% and 50.18% vs. 48.565%. Only in group A (attendance >75% and mean marks <60%) boys performed better than girls having mean marks 57.32% vs. 54.13% though this difference was not statistically significant (table 1).

Table 1: Gender wise distribution of mean marks in group A and B

	Group A				Group B			
Attendance	>75% attendance				<75% attendance			
Students	(39 students-40.625%)				(57 students-59.375%)			
Over all Mean marks	63.41%				50.26%			
Percentage	>60% Marks		<60% marks		>60% marks		<60% marks	
Students	25 students (64.10%)	14 students (35.89%)	6 students (10.41%)	51 students (89.58%)				
Mean Marks	66%		56%		61%		49%	
Gender based division of students	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
	17	8	5	9	2	4	21	30
Mean Marks	67.58%	61.46%	54.13%	57.32%	62.09%	60.65%	50.18%	48.565%

Table 2: Gender wise list of >75% attendance

Gender wise list of >75% attendance (n=39)			
Marks	Girls	Boys	Total
>60%	17	08	25
<60%	05	09	14
Total	22	17	n=39
$\chi^2, 0.05 = 3.80 \quad p>0.05$ (Not Significant)			

Table 3: Gender wise list of < 75% attendance

Gender wise list of <75% attendance (n=57)			
Marks	Girls	Boys	Total
>60%	02	04	06
<60%	21	30	51
Total	23	34	n=57
$\chi^2, 0.05 = 0.137 \quad p>0.05$ (Not Significant)			

From table 2 and 3 it is evident that the values of the difference in mean marks obtained by girls and boys in group A and B are 3.80 and 0.137 respectively which are non-significant as the p value is >0.05 having 95% of confidence interval.

On the basis of semi open-ended questionnaire provided to the students, some common causes of absenteeism were sickness, online availability of the study material, strict rules regarding late entry was not allowed (fig 4).

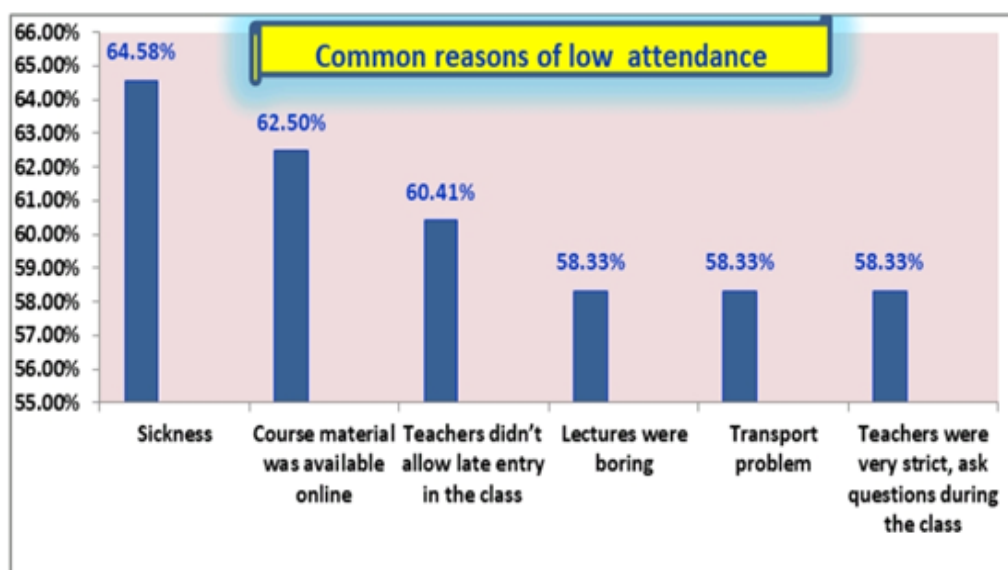


Figure 4: Reasons for Low Attendance

Discussion

This study explores the intricate relationship between the two variables- attendance in lectures and academic performance, specifically among phase III part II MBBS students in first terminal Ophthalmology theory examination. Neutralization of gender bias was done by randomization. It is a dictum that attending classes will improve the results. Previous studies in different specialities have proved the same.

To improve the academic performance of the students, studies have been conducted in the past at many educational centres, to highlight the factors that affect the teaching outcomes. Research was done on medical undergraduate students of second professional in 2014 in Kolkata states that attendance has a huge impact on performance. [1] A retrospective cohort study, conducted at Department of Pharmacology, Government Medical College, Thrissur by Dr Mohanan also concluded significant positive correlation between attendance and academic performance in second professional MBBS students.[2] Similar outcome was observed in both for theory and clinics, for ENT undergraduate medical students by Khilnani et al (2022) in Gujrat. [3] Similarly study done by Kumar et al. (2020) demonstrated that students with higher attendance rates tended to achieve higher scores in both formative assessments and final examinations. [5] A longitudinal study published in the Journal of Medical Education (2021) found that students who regularly attended lectures reported better retention of theoretical knowledge and greater confidence in their clinical skills. [6] Institutions with stringent attendance policies observed higher attendance rates and subsequently better academic outcomes, as noted in a comparative analysis by Patel and Singh (2019).[7]

Despite the benefits, some challenges to consistent lecture attendance may also exist. MBBS students often face conflicting schedules due to clinical rotations, research commitments, and personal responsibilities, which can hinder regular attendance (Gupta et al., 2021).[6] Some students may prefer alternative learning methods or find traditional lectures less effective for their learning style (Kumar et al., 2020).[5]

In an increasingly digital world, technological distractions such as social media, online entertainment, and mobile devices can divert students' attention during lectures. This distraction may lead to reduced attendance and decreased focus on lecture content. Variations in lecture quality, including interactive way of teaching relevance of content to assessments, can influence student engagement and attendance (Jones & Brown, 2022).[9] To optimize the correlation

between lecture attendance and academic performance, medical educators and institutions can consider innovations. Introduction of blended learning approaches that include online sources, recorded lectures, and interactive sessions to accommodate diverse learning preferences can be practiced. The quality of lectures can significantly impact attendance rates. Factors such as the lecturer's teaching style, clarity of presentation, and relevance of content to assessments can influence student's interest. Poorly structured or uninteresting lectures may deter students from attending regularly (Patel & Singh, 2019).[7] Active learning strategies should be encouraged in students such as case-based learning, small-group discussions, and peer teaching to enhance student engagement and knowledge retention (Smith, 2023).[10]

Statistical analysis of marks obtained (>60% and <60%) by girls and boys in group A (>75% attendance) and group B (<75%) using chi square test revealed the values of 3.80 and 0.137 respectively. Both these values denoted that the difference in performance of girls and boys on the basis of cut off marks (60%) was non-significant as the p value was >0.05%. But in group A this insignificant difference may be by chance as there is only a minimal difference from the chi square critical value i.e. 3.84, to label this difference as significant. Girls have performed better in three out of four sub groups. We might have got the results in different direction if the sample size was either larger or the ratio of boys and girls would have been equal. Khilnani A. K. (2022) has documented in his study that the girls scored significantly better marks than boys. The reason of this difference he expected to be the better attendance of girls, but in our research, we could not find any such correlation.[3]

Several studies have suggested that female medical students tend to perform better academically than their male counterparts in MBBS programs. This trend has been observed in various countries and across different years of study. Research often highlights that female students achieve higher grades and examination scores compared to male students during medical school. This could be attributed to factors such as study habits, dedication, and possibly even different learning styles.[11] Females also tend to have higher persistence and completion rates in medical education. They are less likely to drop out or take leave during the course of their studies compared to male students.[12] Factors contributing to this academic performance difference may include differences in learning styles, study strategies, societal expectations, and personal motivations.[13] Various factors can influence attendance, including personal motivation, health issues, transportation problems, family circumstances, and even the

scheduling of classes. Institution may provide academic support services, mentorship programs, transportation facilities and time management workshops to improve students' academic performance (Kumar et al., 2020).[5]

Conclusion

While lecture attendance is not the sole determinant of academic success among MBBS students, it plays a pivotal role in their learning journey. The correlation between regular attendance and academic performance highlights the importance of active engagement and participation in structured educational activities. Medical education, with its rigorous demands and specialized knowledge requirements, benefits significantly from a balanced approach that integrates lectures with practical experiences. Therefore, fostering a culture of regular attendance and active participation can contribute positively to the overall academic achievement and professional development of future medical practitioners.

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