



ASSOCIATION BETWEEN INTERNAL EXAM PERFORMANCE AND ATTENDANCE IN A FIRST-YEAR MEDICAL PHYSIOLOGY COURSE

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ABSTRACT

Introduction: First of all, one of the most important elements in obtaining a strong academic performance in competency-based medical education is students' timely attendance. In the current context of competency-based medical education, where the development of competence requires a clinical approach, case-based study, and skills, student attendance is crucial. **Aims:** The purpose of this study was to examine first-year medical students' performance in physiology based on internal assessment marks and the percentage of students who attended class. According to this study, academic achievement and attendance are favorably correlated. Fewer students attend classes these days due to the availability of online resources like video lectures. **Methods:** The study was carried out in the Department of Physiology, Government Medical College, Srikakulam, on first-year medical students from the 2021–2022 batch. There were 150 students in the batch. Attendance was recorded prospectively. All lectures were recorded. The study includes information on the attendance % for both theoretical and practical classes as well as the results of all three internal assessment marks for both theory and practical classes. Based on the percentage of students who attended both theory and practical classes, three groups were formed. Students in Groups 1 through 3 had attendance rates of less than 50%, 50% to 75%, and more than 75%, respectively. The three groups' attendance percentages were compared to the students' mean internal evaluation scores. The Karl Pearson correlation coefficient was utilized to determine how strongly the attendance % and internal marks were related. **Results:** As the attendance percentage increased, there was a noteworthy rise in the mean value of internal evaluation marks for both theory and practical subjects. There exists a high association between academic success and attendance, as evidenced by the large positive correlation seen between the internal evaluation marks in both the theory and practical components and the attendance percentage. The p-value determined by ANOVA demonstrated a substantial improvement in the mean internal evaluation marks when the student's attendance percentage was raised. **Conclusion:** The study concluded that there was a strong positive link between academic success and attendance in class.

KEYWORDS : Academic achievement, class attendance, internal marks, first-year medical students

INTRODUCTION

Previous research involving a large sample of undergraduate students has shown that class attendance is a reliable indicator of academic success.^{1,4}

The curriculum, evaluation procedures, and training approach for medical students have all undergone substantial modifications to attain and maintain excellence in the area of medicine. Adjustments that prioritized a competency-based curriculum were made in August 2019. Along with lectures, Early clinical experience is prioritized, teaching with attitude, ethics, and communication (AETCOM) is integrated, self-directed and problem-based learning is encouraged, and small group teaching methods and elective alternatives are provided. In practicals, objective structured clinical examinations and objective structured practical examinations included. The additional adjustments to the cognitive, psychomotor, and affective domains enhanced the cognitive domain of the prior curriculum.¹ The focus has shifted from being on the classroom and exams to being more student-centered. The goal of early clinical experience was to alter students' perspectives and help them develop new skills. Academic results can be influenced by several factors, and among these is class attendance, which has been repeatedly associated with students' academic achievement and cognitive capacity.² There are contradictory effects of gender on academic performance and attendance.³

According to several attendance studies, students who attend class regularly typically perform better academically than those who don't.⁴ Students who attend classes can learn things that are not covered in textbooks. The learner is exposed to resources such as lectures, note-taking exercises, and demonstrations.⁵ Small group teaching hours are also more than regular teaching hours in the new CBME curriculum. Formative assessment is included in this curriculum.

Physiology is an important subject in medical sciences. It holds a pivotal position in the field of medical sciences, encompassing the study of molecular and cellular processes, tissue and organ function, and overall body physiology, providing a comprehensive understanding of the

intricacies of human physiology. It enables the students to understand both the normal and abnormal functioning of the human body.

Theory-based sessions help to understand the physiological mechanisms at a molecular and cellular level while practical sessions are important for clinical training.

Thus, the purpose of this study was to measure the first-year MBBS students' academic performance as well as the degree to which the attendance % as well as internal assessment marks are correlated.

MATERIALS AND METHODS

This retrospective study was carried out in the Department of Physiology at Government Medical College in Srikakulam. All 150 first-year MBBS students from 2021–2022 who participated in the three internal assessments were taken. Marks distribution for internal assessments first and second internal assessments 100 marks paper 1 only, third internal assessment has two papers worth 200 marks. Marks for internal assessments in theory and practicals (First, Second, and Third internal) were tallied. Data regarding the percentage of students who attended class for both theory and practical classes was gathered. Based on the percentage of students who attended both theory as well as practical classes, three groups were formed. Students in Groups 1 through 3 had attendance rates of less than 50%, 50% to 75%, and more than 75%, respectively. After being input into a Microsoft Excel sheet, the data were examined. Karl Pearson's correlation coefficient was utilized to determine how strongly the attendance % and internal assessment scores were related.

RESULTS

Table 1(a): Compares Internal Marks In Theory To Attendance %

Internals: Theory	Correl Coefficient: Attendance Vs Marks	p-value
I	0.340	<0.0001
II	0.490	<0.0001
III	0.530	<0.0001

Karl Pearson's correlation coefficient indicates the relationship

between internal marks and attendance %.

Table 1(b): Compares the internal marks for practicals with the attendance %

Internals: Practical	Correl Coefficient: Attendance Vs Marks	p-value
I	0.499	<0.0001
II	0.600	<0.0001
III	0.574	<0.0001

The p-value showed that there was a substantial positive link between the internal marks of the theory and practical exams and the attendance %.

Table 2(a): Attendance % compared to mean theory marks

Internals	Attendance%	Mean	SD	p-value
I	<50	-	-	-
	50-75	68.76	6.79	0.0001
	>75	83.32	7.46	0.0001
II	<50	-	-	-
	50-75	71.75	5.86	0.0001
	>75	84.04	4.25	0.0001
III	<50	-	-	-
	50-75	68.43	7.32	0.0001
	>75	85.52	4.73	0.0001

Table 2(b): Compares the mean practical marks with the attendance %

Internals	Attendance%	Mean	SD	p-value
I	<50	50.00	-	-
	50-75	69.16	5.18	0.0001
	>75	81.72	3.82	0.0001
II	<50	-	-	-
	50-75	73.53	2.23	0.0001
	>75	84.03	3.93	0.0001
III	<50	-	-	-
	50-75	68.76	6.79	0.0001
	>75	83.32	4.58	0.0001

As indicated by the p-value, which is determined by ANOVA, three groups that were constructed based on attendance % had a substantial improvement in their mean grades when their attendance percentage grew.

DISCUSSION

A few studies have found a weak but favorable association between the proportion of attendance and academic performance.⁶ Research has demonstrated a constant correlation between students' attendance in class and their academic performance. Medical schools with mandatory attendance regulations have shown an increase in attendance, but not in preclinical subjects' academic results.⁷ Subramanyam et al. compared the academic performance of two student groups—one with an attendance rate of 75% and the other with a rate of 90%—to investigate the consequences of an enforced attendance policy that requires a minimum attendance of 90%. A 7% increase in academic achievement was demonstrated.⁸

According to research by Chilwant K. S. and Hundekari J.C., attendance had a greater impact on theory exam performance than it did on practical exam performance.⁹

The percentage of students that attended class and the mean internal marks for both theory and practicals showed a significant correlation in our study. Similar findings were also found in the study conducted by Varul et al., which demonstrated a significant positive association between academic performance in theory and practical exams and attendance, highlighting the significance of regular attendance in obtaining favorable results in academic assessments.¹⁰ According to Schmidt¹¹, the number of hours spent attending lectures had a beneficial impact on course scores. One way that class attendance affects academic performance is through two distinct mechanisms that impact students' motivation and cognition. Students' motivation influences their academic achievement by enabling them to adjust their behavior and become self-directed learners. Students possess the cognitive ability to comprehend, assimilate, and retain information¹². The entire data analysis's conclusions show that while attendance is

vital for gaining high academic standing, it is not the most significant element in the learning process. Academic success is influenced by several elements. When examining the relationship between student attendance and academic performance, it is important to consider aspects other than those connected to the students, especially those related to the classroom environment and teaching approaches. Amini et al. conducted a study that illuminated students' perceptions of academic success by emphasizing the importance of personal abilities, attitude, beliefs, motivation, effort, and endurance as critical components that lead to students' academic success.¹³

This study is constrained by variables that impact academic achievement, such as the number of study hours and the student's status as a day scholar or hosteller.

CONCLUSION

The results of this study demonstrated a strong positive relationship between academic success and attendance in class. The outcome could help put institutional policies about attendance tracking into practice. To take prompt action to solve the issue, the attendance monitoring system may be used to track pupils who exhibit poor attendance patterns.

Conflict of interest: Nil

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