Association between class attendance and internal assessment marks in anatomy

Sangeeta. M[1], Varalakshmi K.L[2,*]

[1]Professor and HOD, [2]Associate Professor, Dept. of Anatomy, MVJ Medical College and Research Hospital, Bangalore, Karnataka, India

***Corresponding Author: Varalakshmi K.L**
Email: sallgmally666@rediffmail.com

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Abstract

Introduction: Student attendance is considered as an important factor contributing to academic performance in Medical education. This becomes all the more relevant in the context of Competency based medical education where clinical contact and skills are necessary to develop competence. Student's absenteeism is a continuous problem in medical education despite mandatory attendance policies introduced by the universities. Results of previous studies correlating attendance with academic achievement are conflicting.

Objective of the Study: To estimate the strength of association between attendance percentage and Internal marks in Anatomy.

Material and Methods: The study was conducted in the Dept of Anatomy of MVJ Medical College and Research Hospital, Bangalore.150 students of 2016-17 Batch of First year MBBS who appeared in all the three internal assessments of both theory and practicals were included for this study.

Study Design: Retrospective observational study.

Theory and practical marks of the three internal assessments conducted for the batch of 2016-17 Phase I MBBS was retrieved. Data of the attendance percentage of both theory and practicals of the same students were also retrieved. Three groups were created based on attendance percentage of both theory and practicals. Group I with less than 50% attendance, group II between 50% and 75% attendance and group III with more than and equal to 75%. Mean marks of the students of the three groups were compared with their attendance percentage. Karl Pearson correlation coefficient was used to test the strength of association between attendance percentage and internal marks.

Results: It was observed that as the attendance percentage increased there was a significant increase in the mean internal marks in both theory and practicals. There was a positive correlation between attendance percentage and Internal marks in both theory and practicals which was significant.

Conclusion: The findings of this study support anecdotal evidence that there is a significant positive correlation between class attendance and academic achievement.

Keywords: Theory, Practical, Internal assessments, Attendance, Percentage, Correlation, Association.

Introduction

Medical profession demands a certain amount of discipline on the part of the students keeping in mind the multiple roles expected from an Indian Medical graduate as laid down in vision 2015 of the MCI document.

Curriculum of MBBS is vast and stakes are high with the result lot of emphasis has been laid down by the Universities and regulatory bodies on attendance policies. Most of the universities have kept 75% as the cut off for eligibility to appear in the university exams.

Student absenteeism is an alarming situation more so in the First year MBBS as the duration is short and concepts are required to be built in this limited time period.

Results of previous studies comparing attendance percentage and student performance are conflicting with some studies showing a positive correlation in practicals but not theory.

The effect of attendance on students grades has not been evaluated effectively in Medical education in Indian set ups and the causes for the same have not been explored.

Hence this study was undertaken to study the association between attendance percentage and internal assessment marks.

Materials and Methods

The study was conducted in the department of Anatomy of MVJMC&RH Hospital, Bangalore.

Sample Size: All the 150 students of First year MBBS of 2016-17 who had appeared in all the three internal assessments were taken.

Study Design: Retrospective observational study.

After obtaining the Institutional ethical clearance, internal assessment marks of both theory and practicals all the three internals (First internals, Second internals and Third internals were obtained).

Records of the attendance percentage of all the three internal assessments were obtained. Three groups were created based on attendance percentage, Group 1with less than 50%, Group 2 between 50% and 75% and Group 3 with more than 75%.

The data was entered in Microsoft excel sheet and analyzed.

Karl Pearsons correlation coefficient was used to test the strength of association between attendance percentage and internal assessment marks.

Results

Karl Perason's Correlation Coefficient between Attendance and Marks

Table 1(a): Comparison of attendance percentage with internal marks in theory

Internals: Theory	Correl Coefficient : Attendance Vs Marks	P Value
I	0.339	< 0.0001
II	0.504	< 0.0001
III	0.518	< 0.0001

Table 1(b)-Comparison of Attendance percentage with Internal marks in Practicals

Internals: Practical	Correl Coefficient : Attendance Vs Marks	P Value
I	0.485	< 0.0001
II	0.558	< 0.0001
III	0.553	< 0.0001

There was a positive correlation between attendance percentage and Internal marks of both theory and practicals which was significant as indicated by the p value.

Table 2(a)-Comparison of attendance percentage with mean Theory marks

Internals	Attendance	Mean	SD	*P value*
I	< 50	10.000	14.1421	0.01
	50 - 74	23.125	12.0091	
	>=75	35.825	15.5439	
	Total	34.984	15.7937	
II	< 50	11.25	15.910	< 0.0001
	50 - 74	24.64	14.704	
	>=75	41.44	14.470	
	Total	39.49	15.560	
III	< 50	3.50	4.873	< 0.0001
	50 - 74	31.14	19.377	
	>=75	49.00	17.693	
	Total	46.10	19.803	

Table 2(b): Comparison of attendance percentage with mean practical marks

Internals	Attendance	Mean	SD	*P value*
I	< 50	16.250	22.9810	< 0.0001
	50 - 74	28.214	22.5330	
	>=75	59.126	16.3082	
	Total	57.138	18.3969	
II	< 50	25.00	22.220	< 0.0001
	50 - 74	30.88	17.608	
	>=75	57.64	15.551	
	Total	53.47	18.684	
III	< 50	9.00	12.821	< 0.0001
	50 - 74	43.75	23.274	
	>=75	65.22	19.404	
	Total	60.94	22.891	

After creating three groups based on attendance percentage, it was observed that there was a significant improvement in the mean marks when their attendance percentage increased as seen by the p value calculated by ANOVA.

Discussion

Previous studies have shown a positive but weak correlation between attendance percentage and academic outcome.[1] Although several confounding factors may affect academic outcome, class attendance has shown to have a consistent relationship with cognitive ability and academic outcome in students.[2] Studies on the effect of mandatory attendance policies within medical schools are sparse

although a study has shown that mandatory attendance policy increased attendance but did not increase academic outcome in Basic sciences lectures.[3] Another study by Subramanyam et al analyzed the impact of enforced attendance policy of 90% and compared the performance of student group having 75% attendance with students having 90% attendance. They found an improvement in academic performance by 7%.[4]

Significant gender differences were observed where in Male students were less likely to attend classes compared to female students. However results of studies on the influence of gender on the attendance and academic outcomes are conflicting.[5] Previous studies also suggest that practical class attendance correlates more strongly with exam grades.[6] Chilwant K. S. and Hundekari J.C. found that performance in theory exams correlates more strongly with attendance than practical examination.[7]

In our study there was a significant correlation between attendance percentage and mean marks in both theory and practicals. These results are comparable to the study by Varul et al. which reported a significant positive correlation between attendance and academic performance in both theory and practical examination.[8] Schmidt reported that hours spent attending lectures and discussion classes positively affected course grades, even after controlling for hours of study.[9] In our study, distinction students and poor achievers (less than 35% marks) marks did not show positive correlation with attendance. The reason could be that their number were very few.

The mechanism through which class attendance influences academic outcome could be as follows. Class attendance affects cognition and motivation of students. Both cognition and motivation influence academic outcome by two different mechanisms.

Cognitive ability correlates with the degree to which students are able to process, integrate and recall information given to them. Motivation affects academic outcome by bringing about a behavioral change in the students that enable them to be self-directed learners.[10]

This study has some limitations. We have not taken into account the confounding factors like hours of study, whether student is a day scholar or hosteller, cultural and social background which affect the academic performance.

Conclusion

The findings of this study support anecdotal evidence that there is a significant positive correlation between class attendance and academic achievement.

The findings of this study will be useful in shaping institutional policies regarding attendance monitoring.
Following recommendations can be proposed-

Summary of these findings can be presented to the students which can act as a motivator and encourage students to maintain high levels of attendance

Establish an attendance monitoring system for tracking students with poor attendance pattern so as to take action to address the issue at the earliest.

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Conflict of Interest: None.

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