

Class Attendance of Pharmacology Students of Rehman Medical College as a Determinant of Academic Performance

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ABSTRACT

Introduction: Class attendance is traditionally taken as a very important factor to earn better academic grades. However, with the emphasis on student-centered learning and due to advancement in information technology, its role must be reassessed.

Objective: To correlate class attendance of Pharmacology students of Rehman Medical College with their academic performance.

Materials & Methods: An institution-based cross-sectional correlational study was conducted in the Department of Pharmacology, Rehman Medical College, Peshawar, from May to August 2017 on students of academic session 2014-15. Academic performance of students in different internal examinations was evaluated and correlated with their attendance. Students were divided into two groups; Group I, with 75% or more class attendance and Group II, with less than 75% attendance. Data were analyzed by SPSS 20 for descriptive statistics; group comparisons were done using Chi Square Test for frequencies and Student's T test for Means and SD; correlation was determined by Pearson's Correlation *r*. In all cases, a $p < 0.05$ denoted significance.

Results: Group I students performed better academically than Group II students ($p=0.007$). However, class attendance was not the only factor responsible for the good academic performance of those students who scored in higher academic categories (marks more than 75%).

Conclusion: Class attendance has a positive impact on students' academic performance, even in this technological age. However, other factors may affect academic performance of high-scoring students.

Keywords: Class attendance; Academic performance; Pharmacology; Multiple Choice Questions; Short Essay Questions.

The authors declared no conflict of interest. All authors contributed substantially to the planning of research, data collection, data analysis, and write-up of the article, and agreed to be accountable for all aspects of the work.

INTRODUCTION

Students are the backbone of any strong nation. They have an ambition to become managers, doctors, engineers and scientists, to best suit for building the foundation of a nation. Students face a lot of problems at every step to achieve their academic goals. Academic performance is assessed by annual exams or CGPA (grade point average) in many universities of Pakistan and other universities around the world.¹

Class attendance is widely believed to be a key factor in the academic success of students.² Some researchers believe that other factors like locality (rural-urban), motivation, good educational environment, good assessment tool, gender, method of teaching (student-centered or teacher-centered) and involvement in extracurricular activities, also play important roles in academics but attendance is more important because students are more likely to succeed in academics when they attend classes consistently.³⁻¹⁰

Until the 1990s there was little evidence about effects of class attendance on students' learning despite the common predication that students benefit from attending classes.¹¹ A number of recent studies have shown that there is a positive correlation between attendance and academic performance.¹²⁻¹⁷ Based on the results of such studies certain academic institutions are forced to take measures for increasing the mandatory attendance percentage for students.¹⁸

Absenteeism and ill-discipline in the class negatively impacts the atmosphere in the class and is of great concern for educators as this correlates with students' performance in the course.¹⁹ Several studies have confirmed this belief that absenteeism negatively impacts students' ultimate academic performance but its effect on the academic performance of medical students has not been thoroughly studied yet in Pakistan.^{20,21}

Usually it is assumed that students get benefit from attending lectures. This assumption should be reassessed due to developments in information technology which has introduced multiple alternative educational tools such as e-libraries, online demonstrations, books, lectures, and quizzes, as compared to physical presence of facilitator and students in a class.²²

In order to improve students' learning, there is a need of research in order to correlate students' academic performance and class attendance, particularly in the present time when almost everything is accessible online.²³

Traditionally large group format (LGF) lectures and tutorials have been the leading forms of instruction in conventional face-to-face undergraduate courses in most of the medical colleges. The primary mode of curriculum delivery at Rehman Medical College is full-time, contact lectures, supported by small group format (SGF), self-directed learning (SDL), problem-based learning (PBL) and student seminars. This mode of delivery implies that students regularly attend face-to-face activities.

Outcome of this study may form the basis for increasing or decreasing the mandatory attendance percentage at school, college and university levels. The study may be helpful for institutional policy makers to design and implement policies to improve students' attendance if positive correlation is found between class attendance and academic performance. Secondly, if no or weak correlation is found then it can give useful insight regarding change of teaching methodology e.g. learner-centered approaches.

MATERIALS & METHODS

This cross-sectional correlational study was conducted from May-August 2017 to correlate the class attendance of Third Professional MBBS students of Rehman Medical College (RMC) session 2014-15, with their academic performance.

The entire academic year was of nine months i.e. October 2016 to June 2017. The course contents included general pharmacology, autonomic nervous system, cardiovascular system, central nervous system, gastrointestinal tract, blood, autacoids, respiratory system, endocrine system and chemotherapeutic agents.

Both theory and practical examinations were included in the study. The written theory paper consisted of two components: Part-I, multiple choice questions (MCQs) of the single best answer type; and Part-2, short essay questions (SEQs). The keys for SEQs were designed in such a way that each part of question has a clear point for scoring to minimize examiner's bias.

All the students (n=99) of the mentioned sessions were included in the study by universal sampling. Those students who were absent in more than two exams were excluded from the study. Data were obtained from the records of Pharmacology Department, RMC.

The students were categorized into two groups: Group I, having $\geq 75\%$ attendance, and Group II, having $< 75\%$ attendance.

The study was approved by the Rehman Medical Institute Research Ethical Committee (RM-REC).

Data were analyzed by SPSS 20.0; in addition to descriptive statistics, Pearson's correlation was done to detect association between the class attendance and academic performance of students. The Chi Square test and Student T test were used to detect significant differences of gender for all analyses; $p \leq 0.05$ was considered statistically significant.

RESULTS

Of total 99 students, 62 were males and 37 females; their academic performance is given in Table 1. Female students performed better compared to male students ($p=0.001$).

Gender	Academic performance		Total	p value
	Fail	Pass		
Male	31	31	62	0.001
Female	4	33	37	
Total	35	64	99	

Table 2 provides data of students' attendance based on their academic performance. Students whose attendance was $< 75\%$ were 6 while 92 students were found to have attendance $\geq 75\%$.

The results showed that those students whose attendance was $\geq 75\%$ performed significantly better in academics as compared to their other counter parts ($p=0.007$).

Attendance	Academic performance		Total	p value
	Fail	Pass		
$< 75\%$	6	1	7	0.007
$\geq 75\%$	29	63	92	
Total	35	64	99	

Attendance was strongly correlated to the academic performance of students (Figures 1a, 1b; Figures 2a, 2b).

However, correlation alone did not differentiate students of different groups, in that correlations were stronger for the students having $< 75\%$ attendance and students who were in the Fail group; the small sample size of students $< 75\%$ attendance may not fully account for this finding.

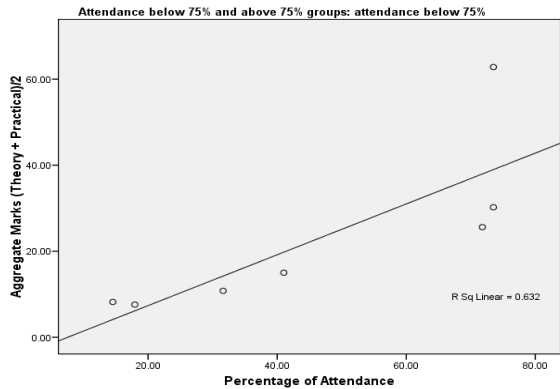


Figure 1a: Scattergraph of percentage of attendance and aggregate marks for the group having < 75% attendance showing positive linear association with $r = 0.795$, $r^2 = 0.632$, p-value of $r = 0.033$.

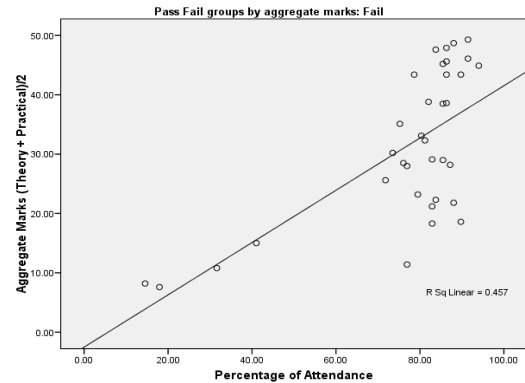


Figure 2a: Scattergraph of percentage of attendance and aggregate marks for the fail group showing positive linear association with $r = 0.676$, $r^2 = 0.457$, p-value of $r = <0.001$.

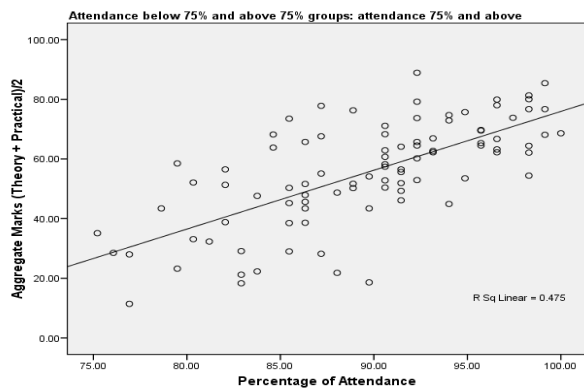


Figure 1b: Scattergraph of percentage of attendance and aggregate marks for the group having > 75% attendance showing positive linear association with $r = 0.689$, $r^2 = 0.475$, p-value of $r = <0.001$.

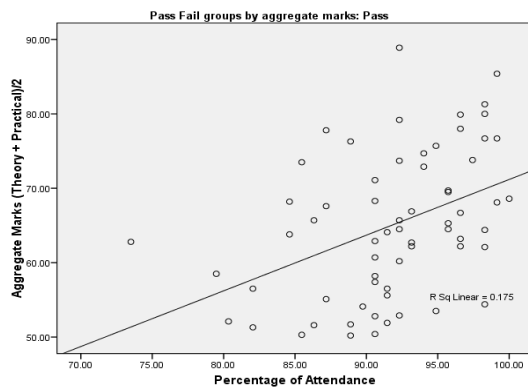


Figure 2b: Scattergraph of percentage of attendance and aggregate marks for the pass group showing positive linear association with $r = 0.419$, $r^2 = 0.175$, p-value of $r = 0.001$.

DISCUSSION

Class attendance is still a key determinant of academic performance.²⁴ Scholars in recent times have written more on the importance of class attendance that, on average, high academic performance is achieved by students with high attendance than students with poor attendance.^{25,26} Not attending classes is seen as one of the reasons for academic failure.²⁷ Some researchers have shown strong while some have proven a weak correlation between attendance and academic achievement.²⁸ Policymakers and parents have also assumed a constructive connection between class attendance and academic success.²⁹

A list of research studies suggested the correlation between class attendance and academic performance. The first attempt to study this relationship have been from Robert Schmidt who concluded that the time spent in class was the primary factor to effect student performance followed by the time spent in individual study.²⁷

Marburger in a study with 60 students in a microeconomics course, observed the percentage of the correct answers belonging to the material covered in non-attended lectures. He concluded that the students were more likely to give wrong answers to these types of

questions compared to the questions belonging to the lectures they attended.²⁰

A study performed in SIMAD University, Moghadishu, revealed a strong positive relationship between students' attendance and academic performance.⁹ Neri and Meloche¹⁸ investigated whether class attendance is positively associated with academic performance or not. The results confirmed that class attendance does contribute to academic performance. Same results were found by Gottfried when he evaluated the effect of attendance on the academic success of the students.²⁹

Another study compared the attendance and academic performance of the students. A significant correlation between attendance and academic performance was found.²⁴ Similar study was performed by Deane et al. who evaluated the effect of attendance on academic performance of medical students. At the end positive association was found between the two.²⁸

A study was performed in Nigeria to investigate the correlation between students' attendance and academic performance.³⁰ At the end it was concluded that attendance plays a vital role in the

academic success of the students, showing a strong positive correlation between the two. Same results were found by Khan et al. when he compared the passing ratio of students which have < 70% attendance with the students which have > 70% attendance.¹⁵

Results of all the above mentioned studies are somehow in line with our study. The simple rule for academic success is going to class regularly. In fact, research has shown that attendance record may be one of the biggest factors influencing academic success

CONCLUSION

The study suggests that class attendance plays a vital role in students' academic performance. However, class attendance seems to have a lesser effect on the academic performance of those students who have shown very good results.

LIMITATIONS

The generalizability of findings is limited because it is based on single institute and secondly, the characteristics of teachers and students, course contents, method of teaching and teaching expertise may vary from institute to institute. However, the findings do provide a relevant contribution to the existing base of research.

RECOMMENDATION

As this study is based on a single institute, therefore, it is recommended that present study should be conducted at a wide level in Pakistan, so that its result becomes valid for the whole country.

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