Original Articles

Class Absenteeism in Pediatrics and Its Impact on Performance: An Analytical Study on under Graduate Students of a Medical College in Dhaka

MOHAMMAD KAMRUL HASSAN SHABUJ[1], CHANDAN KUMAR SHAHA[2]

Abstract

Background: *Absenteeism in clinical classes is a risk for poor performance in the examinations. But how much performance is affected by each absence in pediatrics? In our study we want to predict this assumption.*

Methods*: The impact of tutorial and clinical class attendance on under graduate student's academic performance was investigated based on student's average total score and average of frequency of class absence. Total 310 students placed in Medicine and Paediatrics Department of Sir Salimullah Medical College in different time was randomly selected.*

Results: *There is a significant number of pass if* ≥*75% attendance in the class both in medicine and pediatrics. There is a negative correlation between class absenteeism and students performance in the examination. It is predicted that each 10% increase in student's absence decrease examination performance by about 4 points in medicine 3 points in pediatrics.*

Conclusion: *More than 75% class attendance is significantly required to score 60 % (passing mark) in the examination. Class absenteeism in pediatrics has the similar effect in performance like that of the medicine that is decreasd in examination performance by about 4 points in medicine, 3 points in Pediatrics for each 10% of absence.*

Key words: *Class absenteeism, pediatrics, impact on performance.*

Introduction

The aim of undergraduate medical education is to produce a physician with adequate knowledge of health and disease, reasonable medical skills and a healthy attitude towards patients and their families.[1] Day by day there have generally been many changes in the fields of medical sciences. In our country medical education are still following the traditional lecture format of teaching. Lectures and classroom discussion represent the primary means of teaching for undergraduates. Students who miss a lot of classes perform poorly on exams because they were not present when the topics were covered, alternatively students with high levels (32%) of absenteeism less committed to academics in general.[2] Till there is no such data in our country. As educators, we want our students to attend classes. We enjoy teaching and interacting with students and work hard to make our classes worthy of the students' time and energy. We know who our best students are because they attend class regularly, but we often have a hard time putting a face to the names of the students that fail. On the basis on this anecdotal evidence, we assume that students who attend class regularly benefit from the lectures, tutorials, and learning activities designed to facilitate their acquisition of knowledge. Conversely, we assume that excessive absences from class results in poor academic performance. These assumptions, however, are not based on empirical evidence. Several studies have linked class absences with lower grades.[2] Brocato et al[3] found a strong negative correlation between absences and grades among undergraduate students enrolled in Principles

1. Asst Professor Neonatology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka.
2. Asst Professor Neonatology, Sir Salimullah Medical College (SSMC), Dhaka.
Correspondence: Dr. Mohammad Kamrul Hassan Shabuj, E-mail:Shabuj619@yahoo.com

of macroeconomics and intermediate macro-economics courses. A few number of study has conducted with medical subjects. Now Pediatrics is a separate entity.[4] This subject is included in the faculty of medicine. It is our observation that as a minor and allied subject of medicine, under graduate students have a tendency to avoid regular attendance in this subject. But in the final professional examination they have to face a separate theory section of 50 marks and Viva board and they have to pass individually in pediatrics. In this study we want to show relation of class absenteeism with student's performance in pediatrics and to compare the performance with major subject like medicine.

Materials and Methods

This is a comparative cross sectional study conducted during the period from January 2014 to December 2014. We included 310 students of pediatrics and Medicine departments of Sir Salimullah medical college (SSMC). Total 190 student of 38th batch placed in pediatric department during different time for 1 month rotation (for each batch) schedule in the year 2014 (Batch A, B,C,D,E) and in Medicine total 120 students of 39th Batch were placed for 3 months schedule (for each batch A, C ,E). Medicine department is selected for comparison of the study. Attendance was recorded by roll calling. Absence was calculated by subtracting percentage of total attendance. Same procedure was followed both in medicine and pediatrics. Data were collected from the student attendance sheet and performance from the examination score as published in the notice board and Notice board of SSMC website page.

Students were assessed finally by 100 score for Objective Structured Clinical Examination (OSCE) and Short Answer Question (SAQ) in pediatrics and for 300 scores in medicine by theory, SAQ and OSCE.

Pass mark was 60% of the total score and student who attended 75% of the total class were placed for the final professional examination.

We used regression equation y= a+bx, where 'y' is the performance (score), 'a' =intercept (score for perfect presence) b= regression slope that is how much score change with each percent absence(x = % absence). We used SPSS version 20 software for data analysis.

Results

The average attendance in pediatrics was 82.48±11.60%. Mean score was 75.56±9.9, and Mean absence 17.52+11.6% (Table-II and Fig.-1). Both absence records of individual students and examination scores varied widely (Fig.-2a). Decrease in score with increase in the number of absences that is a negative linear correlation was found (Fig.-2a), and the linear regression equation for pediatrics was Y=80.91-0.306X (Fig.-2a). On the basis of a maximum possible score of 100 points, the average student with perfect attendance (X=0, absence) made 81 points (the intercept of regression equation), and each one unit percent of absence was associated with an average decrease of 0.306 points (the slope of regression equation), that is 10% absence decrease 3 points. Though there was small correlation (Correlation coefficients, r=0.358) but it was statistically significant (p=0.0001). No one get pass mark if he or she was 50% absence (Fig.-2a).

Table-I
Student's Characteristics

Variable	Department	
	Medicine	Pediatrics
Total students	120	190
Male	75 (62.5%)	130(69.47%)
Female	45 (37.5%)	60(32.1%)

Table-II
Absence and score of the students

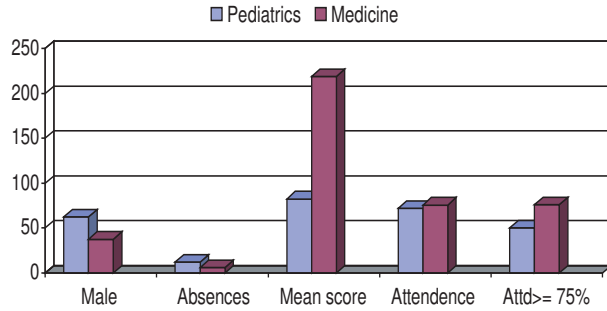| Variables	Pediatrics			Medicine		
Absence n(%)	14(12)			11(6)		
Mean absence %	28.15±13.406			17.52+11.6%.		
Exam appeared n(%)	106(88)			179(88)		
Mean attendance	71.961±13.34			75.56±9.19		
Mean score	219.86±16.06			82.48±11.60		
Attendance						
≥75% (n)	Pass	Fail	p	Pass	Fail	p
	50	4	0.04	76	19	0.001
<75%(n)	27	44		49	35	

Fig-1: *Mean absence in medicine was 28.15±13.40 % and in pediatrics17.52+11.6 %. Mean score in medicine 219.86±16.06 (out of 300 points) and in pediatrics 82.48±11.60 (out of 100 points).*
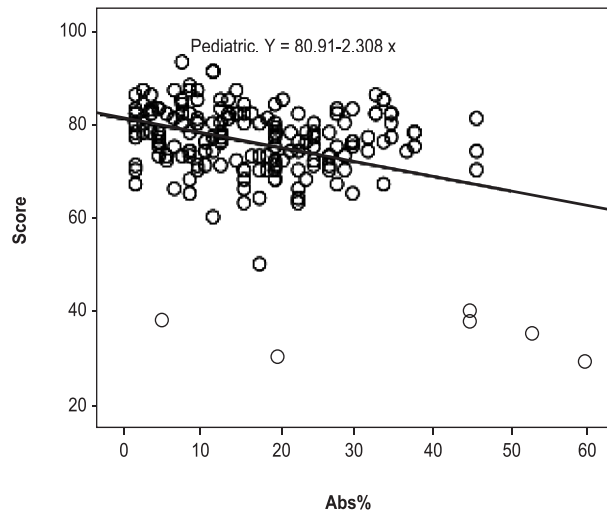

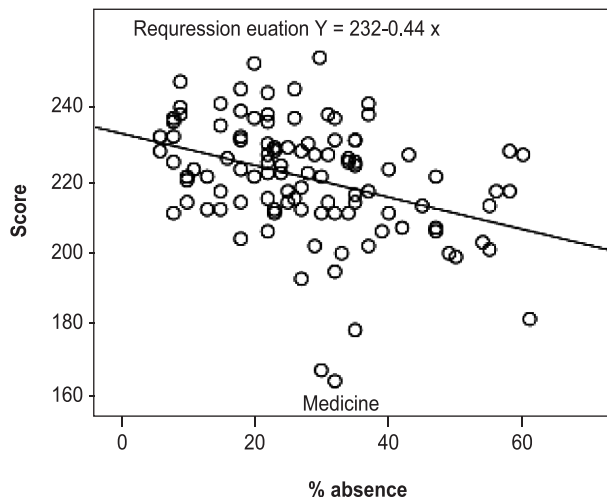**Fig.-2a:** *Regression equation and scatter plot for pediatrics.*

Fig.-2b: *Regression equation and scatter plot for medicine.*

Medicine: The average daily absence in medicine was 28.15±13.406 %. Out of 300 points mean score was 219±15.94 (Table-II). There was a negative linear correlation between absence and score (Fig.-2b). The linear regression equation for medicine was Y=231.93-0.440X (Fig.-2b). On the basis of a maximum possible score of 300 points, the average student with perfect attendance (X=0, Absence) made 232(77%) points (the intercept of the regression equation), and each one unit percent of absence was associated with an average decrease of 0.440 points (the slope of regression equation), that is 10% absence decrease 4 points. There was weak correlation (Correlation coefficients, r= 0.37) but it was statically significant (p=0.0001).some of the student even passes in the exam with 50 % absence in the classes (Fig.-2b).

Discussion

The main result of our study was a negative correlation between examination scores and absences both in pediatrics and medicine. However, this result is subject to the qualifications that the decrease in score was minor (0.440% in pediatrics and 0.37% in medicine for each absence regression coefficient in the equation mention in Fig-2a, 2b) and the correlation was weak (r = 0.37, and 0.35 respectively)but statistically significant. Previous studies[5-6] have reported much higher grades received by students who attended regularly compared with those who did not. One of the most useful work done by Hammen and Kelland et al[2] reported that regular attendance in classes during a human physiology course was helpful in a statistical sense, they also showed that the general rule was a decrease in the examination result score with increase in the number of absences. In the study by Fiel et al.[7] it has been demonstrated that significant learning occur during the lectures but in our study we did not separately analyzed this. In the study by Riggs and Blanco et al[8] a negative correlation is shown between percent absences and examination scores, suggesting the value of monitoring attendance and identifying students at risk for poor performance. In this study higher absence rates (more than 30%) was found to be predictive of poor performance while lower absence rates didn't predict performance. In the study by Dhaliwa[9] also showed higher attendance was associated with better marks in the formative assessment and it was concluded that learner absenteeism may contribute to low achievement. We measured only the relation of absenteeism with performance in pediatrics as minor subject and

compared the result with medicine. Our study shows that class attendance during teaching sessions has a direct impact on the examination results. Students with poor attendance are at risk of failure in their examinations this result when compare with medicine is the same.

Conclusion

There is negative linear correlation between percentage of absence and performance both in pediatrics and medicine. It is predicted that each 10% increase in student's absence decrease examination performance by about 4 points in medicine 3 points in Pediatrics.

References

1. Trice AD, Holland SA, Gagne PE. Voluntary class absences and other behaviors in college students, An exploratory analysis. Psychology Reports 2000; 87: 179-82.

2. Hammen CS, Kalland Jl. Attendent and grade in human physiology course. Advan in physiol Edu.1994; 267: s105.

3. Brocato J. How much does coming to class matter? Some evidence of class attendance and grade performance. Educational Research Quarterly 1989; 13: 2-6.

4. Colón AR, Colón PA. Nurturing children: a history of pediatrics. Greenwood Press. January 1999.

5. Craig FM. A study to determine if there is relationship between absences and grades at McCook College (Dissertation). Fort Lauderdale, FL: Nova Univ, 1990.

6. MCcutcheonI E. Absenteeism in a single as a predictor of future college performance. Community Junior Coil. Q Res Prac 1989; 13: 167-72.

7. Fiel NJ. The Lecture: increasing student learning. Med Educ 1996;51:496-99.

8. Riggs JW, Blanco JD. Is there a relation between student lecture attendance and clinical science subject examination score? Obstet Gynecol 1994; 84:311-13.

9. Dhaliwal U. Absenteeism and under-achievement in final year medical students. Natl Med J India 2003; 16: 34-17.