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"A Study On Attendance And Academic Performance In Theory And Practical Exams In Biochemistry Of MBBS Students - A Retrospective Cohort Study"

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Abstract:
Student attendance is considered as an important factor contributing to academic performance in medical education. This will become 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.
Aim & objectives: *To understand the effect of attendance and performance in theory and practical exams in biochemistry*
Study design: *Retrospective-cohort Study centre: Srinivasan Medical College & Hospital, Trichy. All the first MBBS 2023 batch students who have joined the institution.*
Results: *Two groups were created based on attendance percentage of both theory and practical (> 80% and < 80%). In this background, this study was undertaken to know the impact of attendance on academic performance in our setting.*
Keywords: *Theory, Practical, Internal Assessment.*

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I. Introduction

Every universities / college having their own criteria for the student's theory and practical sessions to develop their academic performances and in studies to get grow in future, especially in the first year and specially in professional courses like MBBS. First year MBBS student's entire academic performance was affected by their class attendance. This finding of study will be shaping institutional policies regarding students' attendance monitoring. In academic activity address the issue at institutional level / concerned departmental level. Students are improving on their academic achievement, like knowledge, skills, communication, attitude, ethics, professionalism, personal competence, effort, endurance, confidence, motivation, it also improves mental and physical health. National Medical education demand students to attend the regular and formal theory as well as practical classes, as the curriculum is vast and students, are exposed to various concepts for the first time [1]

Students' absence in class affects their assessment which is found to be directly related. Few studies have shown a positive correlation between the two. It provides insight that it is time they recheck their learning process and go for more focused reading. Timely feedback to students is needed to keep them in track and to check that they have not deviated from their goal. Internal assessment is most important and essential component of any curriculum. It also plays the most important component role in the new curriculum. In internal assessment a lot of emphasis and weightage are given to summative assessment examination of last three internals [2,3] The internal assessments conducted by the teachers teaching a concern subject with the express purpose of knowing what is learnt about it and how it is learnt. Internal assessment has formative and summative assessment functions [4] In spite of the explicit rules regarding the mandatory attendance during lectures & practical sessions, absenteeism is a growing concern. Attendance during their undergraduate curriculum plays very crucial role to extrapolate their knowledge in the later professional life. The absence in class affects their assessment which is found to be directly related. Several researches on class attendance established that on average, student with high attendance achieves higher academic performance in both coursework and examination than student with poor attendance [5] Attending classes helps the students to obtain information that is not contained in the textbooks. It also allows the student to contact with materials like lectures, review of notes and demonstrations. However, the studies showing relationship between separate theory and practical attendance and their comparison with

assessment are limited. Hence, this study is done to know whether in our setting class attendance had any correlation with academic performance.

This study was undertaken to determine the effect of class attendance theory and practical performance of first year MBBS students in the department biochemistry. To full fill the aim, student's class attendance in theory and practical at the time of first, second, preliminary internal and final university examinations were compared with their exams result (Pass / Fail). Whereas in first year subjects biochemistry is an essential subject to learn basic sciences in medical education that contributes effective knowledge to know the early prevention and treatment of disease. The lecture-based learning enhances the cognitive, affective, and psychomotor skills of the students [6] The lectures provide benefit for learning despite its didactic nature and poor feedback. The practical classes also being most effective tool for improving student's knowledge, goes by hand with theory classes for better understanding and concept building [7] If the student misses these classes, generally it will lead to incomplete learning and poor academic performance.

The literature review suggests that there is a positive relationship between student's attendance and test score in undergraduate medical education. However, the studies showing relationship between separate theory and practical attendance and their comparison with assessment are limited. Hence, this study is done to know whether in our setting class attendance had any contribution in student's academic performance.

II. Materials And Methods

A Retrospective Cohort study was conducted in the Dept of biochemistry Srinivasan Medical College and Hospital, Samayapuram Toll Plaza, Trichy.150 students of 2023 Batch of first MBBS those who appeared in all the three internal assessments of both theory and practical as well as University examinations were included for the study. Theory and practical marks of the internal assessments conducted for the batch of 2023. Data of the attendance percentage of both theory and practical of the same students were also retrieved. Two groups were created based on attendance percentage of both theory and practical. Group I with less than 80% attendance, group II between more than 80% attendance and group. Mean marks of the students of the three groups were compared with their attendance percentage. In this background, this study was undertaken to know the impact of attendance on academic performance in our setting.

The data entered in Microsoft Excel sheet as attendance percentage and result obtained by the students in their examinations. The measurable data were analyzed by using chi-square test. Results were tabulated and significance difference was expressed according to ($p<0.05$) significant and ($p<0.001$) highly significant.

Results:

After assessment of student's class attendance and theory internal results we were observed that significant difference in first internal, moderate significant difference in second internal and highly significant improvement was in preliminary internal assessment. (Table No. 1&2) After comparing of students practical attendance with their practical internal examination results we were got the significant differences in first, second and preliminary internal assessment. (Table No. 1&2)

In the present study we also focused on students overall attendance and final university examination result in that also we were saw the statistically significant difference in between them as shown in the table. In the entire academic year students with >80% class attendance was having more passing result as compared to those with <80% class attendance in their all-internal assessments and final university examination.

Table 1 First year MBBS student's class attendance and their 1st and 2nd internal theory exam result.

Theory			
Internal assessment – I			
Attendance %	Results		p value
	Pass	Fail	
>80	39	28	< 0.043
<80	38	45	
Internal assessment – II			
Attendance %	Results		p value
	Pass	Fail	
>80	61	31	< 0.0031
<80	23	35	

Table 2 First year MBBS student's class attendance and their 1st and 2nd internal practical exam result.

Practical			
Internal assessment – I			
Attendance %	Results		p value
	Pass	Fail	
>80	22	04	< 0.046
<80	117	07	
Internal assessment – II			

Attendance %	Results		p value
	Pass	Fail	
>80	83	01	< 0.041
<80	62	04	

Table 3 First year MBBS student's class attendance and their 3rd internal and university exam result.

Theory			
Internal assessment – III			
Attendance %	Results		p value
	Pass	Fail	
>80	69	29	< 0.0002
<80	20	32	
Practical Internal assessment – III			
Attendance %	Results		p value
	Pass	Fail	
>80	104	02	< 0.042
<80	42	02	
Practical			
University Exam Theory and practical			
Attendance %	Results		p value
	Pass	Fail	
>80	82	19	< 0.01
<80	31	18	

Table 3 explains that third internal exam marks and university exam marks of the students with >80% class attendance was having more passing result as compared to those with <80% class attendance and also it shows some improvement on third and university exam while compare to previous two internal exams.

III. Discussion:

Student's absenteeism is a study and knowledge affecting problem in professional courses especially in medical education despite compulsory attendance policies introduced by the universities. Professional courses like medical education require better attendance in both theory and practical classes for greater understanding of the subject and for acquiring necessary skills for better performance in their later professional life to handling the cases. Some of literature review suggests that absence in class affect their academic performance which is found to be directly related. In this background, this study was undertaken to know the impact of attendance on academic performance in our setting.

In professional courses like medical education require high attendance in theory and practical classes for better understanding of the subject and for acquiring skills for better performance in their later career life. Previous study suggests that absence in class affect their academic performance which is found to be directly related [8] Several confounding factors also affect academic performance. Even though class attendance is a behavioural manifestation of student characteristics, analysis of other variables such as class size, study habits, teacher's absenteeism, communication skills, cultural, sports activities and social factors also required to fully understand the impact of attendance on academic performance.

A study conducted by Damian Het al [9] on comparison of the two semesters, the significant improvement in attendance was not reciprocated with an improvement in academic performance.

Varul et al., [10] Reported that the significant positive correlation between attendance and academic performance in both theory and practical examination. Schmidt et al., [11] Stated that hours spent attending lectures and discussion classes positively affected course results, even after controlling for hours of study. Amini et al., [12] which shows the results of the students' academic success reveals that personal abilities, effort and endurance, attitude, beliefs and motivation, and supportive factors were significant for academic success. 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.

The results from the overall data analysis indicate that attendance, even though critical to the learning process, is not the single most important factor in the learning process and suggest that other factors are critical to academic success. Besides student related factors, the effect of other factors, particularly classroom and teaching-related ones should be considered in the analysis of student attendance and academic performance.

The results of this study indicate that attendance is not the only factor in improving academic performance. Amini et al study also supported by which shows the results of the students' viewpoints toward academic success and revealed that themes: personal abilities, attitude, beliefs and motivation, effort and endurance and supportive factors were significant for academic success.

IV. Conclusion

First year MBBS student's entire academic performance was slightly affected by their class attendance. This finding of study will be shaping universities / institutional policies regarding students' attendance monitoring both in theory and practicals. To establish an attendance monitoring tracking system for poor attendance students so that the action to be taken that of students. In academic activity address the issue at institutional level / concerned departmental level. Students are improving academic achievement, such as knowledge, skills, communication, attitude, ethics, professionalism, personal competence, effort, endurance, confidence, motivation, it also improves mental and physical health.

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