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Research Article

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Enhancing Lecture Attendance: A Novel Approach Utilizing Clinical Case-Based Learning

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Abstract

There has been an observable trend indicating a decline in students' attendance in the lectures. Several reasons for this have been proposed, and various measures to mitigate this have been suggested in the past. We implemented a novel approach in our instructional strategy to address this. Real-life clinical problems relevant to the topic were integrated into the lectures, and they were deliberately excluded from the pre-lecture handouts. During the lectures, students were motivated to post questions and actively engage in peer-peer and peer-tutor discussions. To evaluate the impact of this intervention, student attendance before and after was monitored, calculated and statistically analyzed to get the average attendance. The results revealed a significant increase in the average attendance, demonstrating a statistically meaningful difference ($p<0.001$). Commencing classes with pertinent patient problems or real case scenarios and stimulating student participation through open-ended discussions and interactions significantly enhanced the appeal of the lectures. This intervention holds great significance in alignment with the forthcoming clerkship training of the students in the undergraduate program since it prepares them for direct patient and real clinical problem encounters. Upon analyzing the class attendance average pre- and post-implementation of the intervention, a substantial improvement in overall attendance was observed.

Keywords: Medical Students' Absenteeism, Interactive Lecturing, Clinical-Scenario-Based Teaching and Learning.

1. Introduction

Recently, there have been great concerns about the increasing absenteeism of medical students from lectures [1]. Many reasons for this have been brought forward in the recent literature. Medical education relies on the synergistic functioning of three crucial pillars: faculty, students, and the educational environment. Disruptions or shortcomings in any of these pillars can lead to a decline in the overall quality and effectiveness of education [2]. One very important factor in students learning in the schools and particularly in medical education is attending classes and lectures [3]. It has also been reported that the decline in attendance directly influences the student performance and may lead to academic failure [4-6] One usual argument that is put forward in favor of the poor attendance by students is "If all information given in a class is available on the internet and in the handouts, then why will students choose to attend this class".

There are many factors that influence students' attendance of lectures including the faculty's mode and method of presentation, his/her class management style, the cognitive level of the presented material and the motivation and interest of the students in a particular subject to name a few. Evidence also reflects that repetition of the same content over the years also contributes to students disinterest in the lectures since the lecture material is easily available from the senior fellows [4, 7-9]. We observed that posting lecture and lecture handouts ahead of the class on the learning management system also contributed towards students in class absenteeism. Hence, the timing of posting the lecture materials is also debatable.

Among the array of recommendations to tackle this issue, one prominent suggestion stands out: transitioning from traditional lecturing to interactive lecturing. This approach fosters active engagement and facilitates improved interaction between faculty

members and students.

2. Methods

This was an observational study, carried out between January-April 2023 at the College of Medicine, Ajman University, UAE. Year 3 and 4 students of the six-year undergraduate MBBS program were observed for this study. The students were not aware of the observation being made since that could have influenced the observation and its results. We modified traditional lecturing style by revamping the lecture content, its delivery style, as well as the timings and strategy of posting the lecture material on Moodle. The interactive lecture started with a real-life case scenario relevant to the lecture topic. The whole lecture was delivered in reference to the projected case scenario. During the lecture students were motivated to participate in the lecture by actively interacting with them, asking thought provoking questions and giving them a chance to express their ideas and thoughts with their peers.

The lecture notes were posted on Moodle an evening before the lecture, but without the clinical case scenario. This was a reverse Problem Based Learning (PBL) approach. In a traditional PBL the clinical case problem is discussed in the first PBL session and then in the second session the resources to problem solving are discussed. On the contrary, here we provided the resources to the students an evening before the lecture to have an idea and understanding about the topic. Next day, the lecture started by projecting the case for open discussion and integrating the lecture content with it. After the lecture, a detailed lecture presentation including the case-scenario and Q and A sections was provided to the student on Moodle.

2.1 Statistical analysis

The percentage of student class-attendance was collected in at least three different classes before and after the intervention. The data was analyzed using GraphPad Prism (NY, USA). Average attendance and relevant p values were calculated using two ways ANOVA, where $p<0.05$ was considered significant.

3. Results

We noticed a substantial increase in the student attendance of the modified interactive lecture. In the case of year-3 students, the average attendance increased from 60% before the implementation of our novel model to 87% afterwards. Similarly, for year-4 students, the average attendance showed an improvement from 74% to 90%. These findings are summarized in Table 1 and illustrated in Figure 1.

Year -3	% (attendees/total class)
Average attendance before intervention	60% (25/42)
Average attendance after intervention	87% (37/42)
Year - 4	
Average attendance before intervention	74% (27/36)
Average attendance after intervention	90% (32/36)

Table 1: Changes observed in average class attendance in years 3 and 4 medical students.

Statistical analysis of the data presented in Table 1 revealed a significant improvement in the attendance levels of both year-3 and year-4 students ($p<0.001$). These findings suggest that our novel intervention holds promise as an effective strategy for addressing the issue of poor student attendance in lectures in medical colleges. Figure 1 and supplementary data provide further support for the positive impact of our intervention. Figure 1: Student attendance reported before and after the intervention.

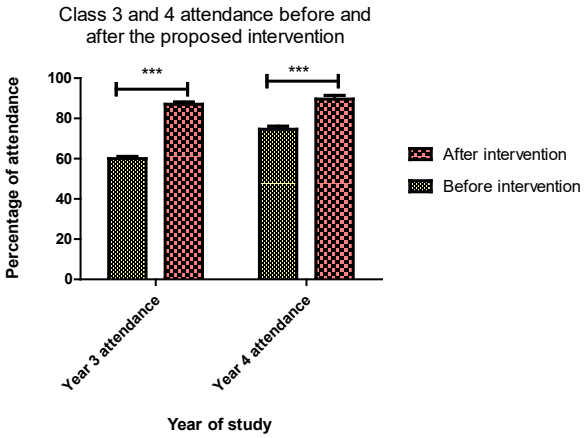

Figure 1: Average student attendance (%) before versus after the intervention, data presented as mean ± SEM, ***$p<0.001$.

4. Discussion

After implementing changes to the content and strategy of posting lecture materials on Moodle, we observed a significant increase in class attendance among both year 3 and year 4 medical students. One notable change was the inclusion of a real patient scenario tailored to the lecture topic. The lecture materials were posted on the Learning Management System (LMS) the evening before, excluding the patient scenario. While students were provided with the necessary resources, the actual case was withheld. This new delivery method sparked heightened interest among students, as the entire lecture revolved around the presented case scenario.

The relevance of these cases to their upcoming clerkship training, which typically commences within one to two years, likely contributed to the improved attendance. The impact was particularly prominent among year 4 students, who are closer to embarking on clinical rounds in just a few months.

However, it is important to acknowledge the limitations of this novel method. Its applicability may be limited in basic medical science lectures, as developing a real patient clinical scenario for these subjects can be challenging. In the literature, many studies have suggested to improve the educational environment and teaching-learning process so that students will be attracted to attend classes Hughes et al., reported the most important reason for students' absenteeism in the nursing school was due to family circumstances, as some of which cannot be avoided [1,8]. Fjortoft at Chicago College of Pharmacy, noted that low academic level of classes, lack of presentation of new materials, adherence of professors to text-books are the main reasons for the poor attendance [10]. In the present study, we observed a significant improvement in class attendance by addition of real patient case scenarios to the lecture without posting this case scenario the previous evening in the LMS. Also, we incorporated a Q and A session during the discussion which motivated more student participation and engagement, and finally, reflected much interest in the class-physical attendance.

Declaration by the Authors

Ethics approval and consent to participate: No human subjects were involved directly or indirectly in the study.

Consent for publication: All authors approved the manuscript for publication.

Availability of data and material: Authors derived the data from the class attendance of their respective classes taken, all data are shared via supplementary files.

Competing interest: The authors report there are no competing interests to declare.

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Authors contribution: DP; Conceptualization of the work, execution, and manuscript writing. YM; Execution, data analysis, manuscript writing.

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