REVIEW ARTICLE

# ABSENTEEISM OF UNDERGRADUATE MEDICAL STUDENTS IN LARGE CLASS FORMAT LECTURES: CAUSES, SOLUTIONS AND THE WAY FORWARD

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Despite compulsory attendance rule and strict policies, absenteeism from lectures is an ongoing phenomenon which is becoming a point of serious concern because it is associated with inadequate learning and poor academic performance of medical students. Student absenteeism springs from a variety of contributing factors that need to be addressed promptly and collectively. This review gives an overview of some of the factors that account for absenteeism interrelated with students, faculty, curriculum and learning environment. We propose that 'Need Based Standardized Faculty Development Programs', 'Innovative teaching and learning methodologies', 'Good governance' and 'Institutional commitment should aim to replace the traditional passive mode of instruction with active learning and inquiry-based approach to ensure considerable attendance of medical students. We are optimistic that the suggested measures will help to improve the quality and delivery of lectures for better attendance and a shift from traditional way of teacher centred learning, to self-directed learning.

**Keywords:** absenteeism, medical students, faculty, environment, technology enhanced learning

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## INTRODUCTION

Absenteeism, defined as the conscious and deliberate act of being away from the physical space of the classroom, is a pressing concern for institutions of higher learning globally. Medical Colleges are not spared from absenteeism and report it as a common occurrence. Moreover, undergraduate medical students are more likely to be absent than their counterparts in other health science disciplines. This is worrying, since medical colleges are responsible for producing the physicians of the future. This includes inculcating in them key traits such as skill, knowledge, willingness to learn, responsibility, dependability, time-management, and altruism.

Absenteeism from lectures is a point of concern worldwide, as it ties in with inadequate learning and poor academic performance of medical students. Moreover, while many students opt to not attend lectures, others are inattentive during them.[1] The usefulness of lectures in undergraduate medical education has been well documented.[2] Lectures are one of the important modes of teaching in conventional as well as hybrid medical colleges, despite the adaptation of new curriculum.[3] During lectures, committed teachers deliver organized and structured knowledge to students in an interactive way.[4] This mode of teaching, where the main teaching strategy is the transfer of information by an educator, is considered one of the most economical and productive ways of imparting knowledge.[3] Lectures also provide a platform where students can interact with teachers, observe them and identify them as potential role models.

Low attendance hence may affect this process and hinder learning, leading to poor academic performance of medical students and a compromise on the quality of future health care services provided.[5] Thus, in addition to poorer academic performance, absenteeism also leads to poor motivation to learn, and can have long lasting effects on students' future work ethic, reliability and responsibility as physicians. The unfavourable qualities associated with absenteeism during student life are reflected in the work life of professionals and the quality of health care services provided.

Absenteeism of medical students in lectures adds an unnecessary burden on medical education both nationally in Pakistan and internationally. Since absenteeism is undoubtedly multifactorial, we need to identify a wide range of factors and causes leading to it. This would help the development of solutions aimed to reduce absenteeism, and thus strengthen the learning process and improve the academic performance of undergraduate medical students.

The aim of this review is to identify factors leading to absenteeism and in light of the review suggest solutions to reduce absenteeism.

## METHODOLOGY

The authors selected articles from the past five years, and only if a recent article on the area addressed was not available an article more than five-year-old was considered.

Literature search was done extensively to identify different factors leading to absenteeism. After extensive literature search, four important factors were

identified and included in the review article along with possible solutions based on evidence-based medicine.

Search engines for causes and solutions related to students, faculty, curriculum and learning environment were PubMed, ERIC and Google Scholar.

For student related issues, 14 articles were used as a reference and cited, for faculty related issues, 6 were cited, for curriculum related issues, 10 articles were recruited and cited and for learning environment, 5 were cited.

Some of the articles were used more than once as a reference to justify the identified factor related issue along with proposed solutions.

## Student-related Issues

Factors intrinsic to the student include lack of interest in the subject matter[6], poor attitude and low motivation for learning[7]. Poor self-motivation, in particular, is a strong factor contributing towards absenteeism.[7,8] In addition, bad habits of medical students also contribute to their absenteeism from classes. These include laziness, lack of proper sleep[9], giving in to peer-pressure[9,10] and socializing[10]. Some other non-academic factors cited by students involve part-time jobs[11], family issues[4,11], financial constraints [4] and transport problems[10].

Higher rates of absenteeism have been reported near assessments. This may be due to poor time management during the term[5] resulting in last minute preparation for examinations.[6,12]

Other factors include the lack of support by educators[7,8], inconvenient lecture timings, poor lecture content and repetition of topics taught, as well as the teaching modality itself. Medical students undervalue lectures, given the numerous textbooks available on every subject to learn theory from.[13] The majority of students do not attend class due to dissatisfaction with the teaching style in lectures[6,8,14] and due to their low perception of the quality of lectures. Thus, students also prefer self-study[6] over, dry and didactic teacher-dominated lectures[13]. To make the matter worse, the lack of any real strictness or consequences of not attending lectures reinforces the triviality that students attribute to lectures.[13]

## Solutions to Student-related Issues

Strategies to improve student attendance in medical school should aim to address the issue of dissatisfaction with teaching style by introducing newer teaching and learning initiatives in place of the traditional lectures, that better suit students' preferences. (Table-1).

- Implementation of a student satisfaction-centred monthly teaching evaluation system of all faculty with timely action taken to counteract any areas of deficiency in a particular faculty's teaching method and style. Student evaluation can be obtained through on-the-spot digital evaluation forms accessible easily through a Quick response (QR) Code displayed on the lecture screen after lecture.[15]
- The success of the aforementioned evaluation system will be based upon how well the teaching administration is able to develop their faculty's teaching capability according to the requirements of the student body. This development should be in the form of teacher training programs, where fresher teaching methods (such as small-group activities) and materials (such as animated educational videos) are inculcated into the faculty's teaching style. Student feedback and suggestions should also be considered while implementing these teacher training programs.[16]
- Peer tutoring initiatives should be designed and implemented by the administration whereby medical students are chosen through a formal selection process to conduct small group teaching sessions for their peers or juniors. The topics taught in these sessions can be suggested by and decided upon by the student body, and the peer tutors should undergo training programs to equip them for teaching to small groups of students. A similar evaluation system as that suggested for the faculty can also be used to constantly improve the peer tutors.[17.]

## Faculty-related Issues

A recent study showed that several factors contributing to student absenteeism in Pakistan are faculty related.[13] In this era of modern medical education, the role of teachers to deliver lectures and keep students motivated enough to attend and learn has become a point of concern. 'Boring' lectures delivered by lecturers have been documented as a leading cause of absenteeism in medical students.[18] Therefore, there is a need to strengthen teacher attributes and teaching methodologies to counter student absenteeism.

There are several barriers to the acquisition of the desired changes in medical college faculty in Pakistan. National politics exerts its influence on the selection of medical faculty exclusive of their teaching abilities and communication skills.[19] At the same time, the selection of faculty members is primarily based on their knowledge and clinical skills rather than their teaching abilities.[20] Moreover, there are minimal opportunities for faculty development.[21] Where these opportunities exist, the lack of time and organizational support, faculty disinterest, complexity of the processes involved, and resistance to change have been identified as barriers to professional development. The lack of monitoring, evaluation and improvement of teaching through feedback is hindered by lack of concept of teacher-evaluation by students and peers.[22] In addition, an absence of standardized criteria for the professional growth of medical teachers by the country's former regulating authority, the Pakistan Medical & Dental

Council (PMDC), is another factor contributing to the poor faculty development initiatives.

## Solutions to Faculty-related Issues

In 2003, the Higher Education Commission of Pakistan realized the importance of introducing Faculty Development Programs (FDP) in equivalence with the international standards of teaching and education.[23] It is emphasized that faculty should be well prepared for their lectures, with full command over PowerPoint, animations, graphic tools and learning activities.[12] (Table-1).

- We recommend that FDPs should be designed to empower faculty to teach a diverse group of students and to learn different teaching methods ('Technology Enhanced/Blended Learning', 'Flipped Classrooms' and 'Effective PowerPoint Presentations') needed to engage millennial students.
- Furthermore, faculty members should be provided with resources, protected time, capacity development grants, appreciation, rewards and recognition, along with opportunities to implement learnt strategies.[12]
- Additionally, there must be a technology-support infrastructure available to help faculty members troubleshoot and solve technology-related problems without delay and disturbance in classroom activities.[24]
- There should be a system to receive students' feedback, which should be shared with the faculty to take into account for subsequent classes.[5]
- There should be a counselling facility available which helps faculty members understand the basis of students' feedback, so that they can receive this feedback better and improve their performance [24]
- Moreover, senior faculty can mentor junior educators by giving them a clear sense of direction and constructive feedback in terms of lesson planning and delivery.[25]

## Curriculum-related Issues

The curriculum encompasses the learning outcomes, content, educational strategies, learning opportunities, assessment and the educational environment.[26] It has an important contribution towards students' decision to attend lectures.

Some significant and common factors reported in literature are students' ability to cover curricular content at their own pace, the focus of curriculum on factual material, unengaging learning experiences and assessment based on recall of factual knowledge. Students' decisions on lecture attendance are based on the anticipated learning, lecture content and nature of the material taught.[27] Some reported reasons for not attending lectures are poor content, irrelevant curriculum and poor delivery of curriculum [12]. Medical students also cite several other problems with the medical school curriculum, describing it as too demanding, rigorous[6,12], ill-defined[13] and overloaded[4].

Moreover, students believe that their primary task is to memorize facts, arguing that the pre-clinical curriculum is mostly fact-based and the exact means by which this information is acquired is insignificant.[28]

In a traditional lecture-based curriculum, absence from class may not prevent students from achieving the learning objectives, particularly if lectures are available as audio or video recordings.[1] The electronic format of lectures makes it convenient for students cover the lecture content at their own pace without even having to come to class. Additionally, the increasing availability of external educational resources designed to help students prepare for exams undermines the value of attending lectures.[28]

## Solutions to Curriculum-related Issues

The Medical Educator should keep in mind that there is need to revise the curriculum, so that only essentials are covered in lectures, as students prefer independent self-study over attending live lectures. The curriculum should be divided into components that can be covered by self-study or guided group study and those which require hands on practice for optimal understanding. The answer to curricular issues is designing a curriculum which is based predominantly on active learning principles and is grounded on the concept that students will attend classes and learn alongside one another. In conjunction with a curriculum designed on active, integrated and complex learning, there is need to develop assessments that measure higher-order cognitive skills and on which students will perform well only if they have participated fully in classroom activities.[1] Many studies have reported a high degree of student enthusiasm with curriculum promoting deeper learning.[1] Some institutes with strong medical student involvement in research have redesigned and compressed their pre-clinical curriculum, but the impact of these changes is yet to be seen.[26,28]

In order to solve curriculum-related issues contributing to absenteeism, the curricular content, its placement, delivery and assessment need to be optimized. The following are some suggestions (Table-2).

- For best use of the lectures, medical educators need to identify specific parts of curriculum where lectures may be most effective.[27] Curricular content requiring complex learning and integration can be taught via lectures. Lectures should be used to cover difficult concepts, so that even if available digitally, students would prefer attending them in person to grasp core concepts well.[27]
- The curriculum should be designed with incorporation of active teaching learning strategies which will also promote deeper learning.

- The attendance in lectures can be improved by relay of integrated and complex concepts through interactive teaching and learning methodologies with effective use of audiovisual aids. Educators, however, need to ensure consistency in delivery of curriculum through careful observation of the teaching faculty and class activities.[1,6]
- To create more meaningful educational experiences for learning essential basic science material, innovative approaches to curriculum design based on student engagement in learning (such as the 'flipped classroom') may be more effective than the traditional teacher-centred approach in a larger class format.[29] Such approaches also lead to increased levels of student satisfaction and engagement in the curriculum.[30]
- Informal learning, in which students are free to engage and where what is unrelated directly to curriculum is also taught, is likely to improve attendance and may be a possibility if educators are accepting and forthcoming about implicit curriculum.[28]

## Learning Environment-related Issues

The medical college learning environment encompasses student learning within the structural, social and psychosomatic contexts. It is defined as 'the sum of the internal and external circumstances and influences surrounding and affecting a person's learning'.[31]This includes the curriculum design, infrastructure, accommodation for students, amenities, teaching methods, interactions with faculty and peers, social and academic environment, mentoring system during stress, commitment of the institute with students as well as student motivation.[32]

The quality of medical educational programs is related to the educational environment that is being provided to the medical students.[33] A conducive learning environment is nevertheless required for students who come from diverse backgrounds and with different potentials and abilities of self-adaptation with different learning styles.[33] The comforts of one's home is desirable from the perspective of a lonely and discouraged medical student. Moreover, a student may remain absent because the class environment is not sufficiently conducive for learning. Literature suggests that student attendance and academic performance may be impacted by improved and soundproof infrastructure, proper ventilation and lighting with controlled temperatures. However, there is not much evidence to support this notion.[34] Poor infrastructure, including poorly ventilated lecture halls, overcrowding and uncomfortable classroom sitting arrangements are additional important factors for absenteeism.[5]

## Solutions to Learning Environment-related Issues

In order to solve learning environment related issues contributing to absenteeism, following are some suggestions. (Table-2).

- The visionary insight of good governance with effective administration should recognize, agree upon and be committed to the processes of educational development.[31]
- A university culture that promotes faculty development in effective teaching methodologies may help to develop a learning environment to engage students and increase student attendance.[6]
- This can be made possible by careful planning of use of existing physical space, learning and human resources for such activities.[31]
- Promotion of interactive learning environments, active teaching with use of information technology and student-faculty interaction with reflection of deep learning experiences are more likely to engage students during lectures.[35]
- Funds should be judiciously used to build and replenish libraries with latest books and journals. Moreover, free online educational resources should be made available.[31]
- Qualitative studies should be done alone or in addition to the quantitative studies to assess the learning environment.[31]
- In addition, there should be psychosocial support mechanisms to enhance student learning and attendance.

## CONCLUSION

Absenteeism is a product that springs from a variety of contributing factors that need to be addressed simultaneously. Innovations in instructional methods focused to engage students can bridge the detachment between 'digital natives' and 'digital immigrants'. The quality of teaching needs an upgrade, through developing the skills of medical teachers with newer technologies. FDPs can play a large role in training faculty to be well versed with new instructional methods, especially those involving technology-enhanced learning. Quality assurance of these initiatives through ongoing monitoring and feedback systems, and accreditation by regulatory bodies is therefore required. Furthermore, positive reinforcement to retain good teachers is required through promotions, bonuses and recognitions. Institutional commitment should be reflected in the form of change in policies and replacement of the traditional passive modes of instruction with active learning and inquiry-based approaches to ensure improved attendance of medical students.

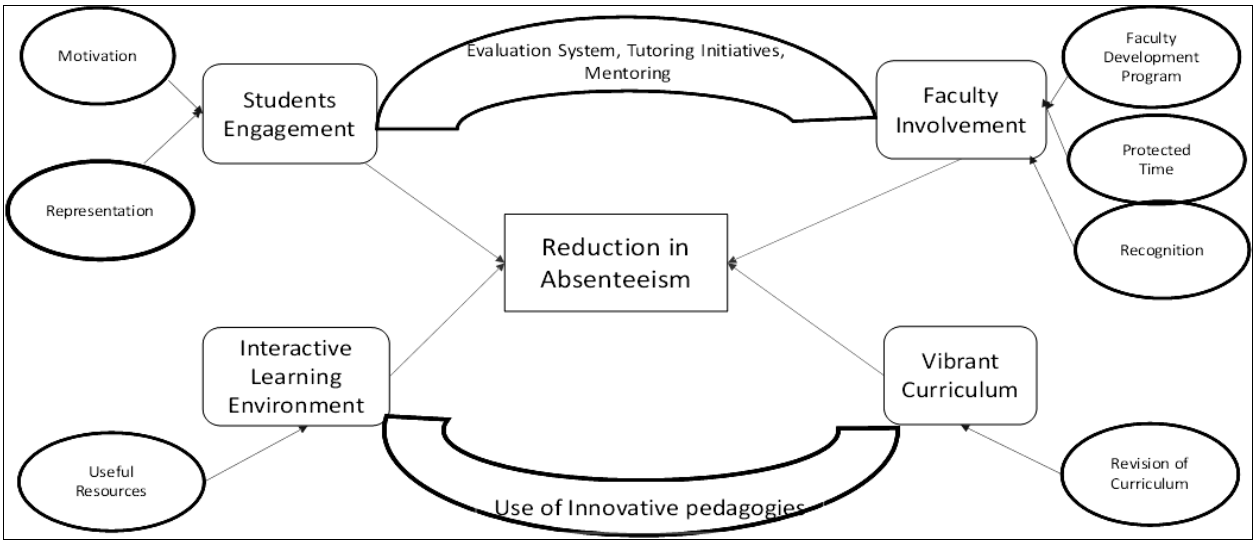


**Figure-1: Solutions to reduce absenteeism in Large Class Format**

**Table-1: Absenteeism reason and recommendation —students and faculty**

| Author /Year | Title | Objective | Significant Findings | Recommendations |
|---|---|---|---|---|
| Rao, B., Valleswary, K., Nayak, M., & Rao, N. L. (2016). IOSR Journal of Research & Method in Education (IOSR-JRME), 6, 11-19. | Reasons for Absenteeism among the Undergraduate Medical Students Attending for Theory Classes in Rajiv Gandhi Institute of Medical Sciences (RIMS) Ongole, Prakasam District of Andhra Pradesh: A Self Review. | • To explore various student, college and external factors for the absenteeism among the medical students<br>• To find out the various remedies, suggestions and ideas expressed by the students | • Laziness and taking part in extracurricular activities are main student factors for absenteeism.<br>• Lengthy classes, lack of clarity among teachers while teaching are some other contributing reasons.<br>Entertainment and sickness of the students were some external factors. | • There should be a proper plan to encourage student's feedback, so that teaching can become more meaningful.<br>• Teachers need to adopt creative teaching techniques.<br>• Faculty should be well prepared for the classes with use of animation, audio, graphics, to generate interest, curiosity in learning and motivation among students.<br>• Faculty skills are enhanced through various training programs to change their orientation from the traditional to interactive and innovative lecture method. |
| Sharmin, T., Azim, E. Choudhury, S., & Kamrun, S. (2017) Anwer Khan Modern Medical College Journal, 8(1), 60-66. | Reasons of absenteeism among undergraduate medical students: a review | To explore the link between absenteeism and the contributing factors. | • Poor teaching skills of lecturers leading to boring lectures.<br>• Lack of clarity about the topic among teachers while teaching | Application of strict attendance policy may influence student attendance and medical colleges should reinforce the attendance policy as an effort to improve their student's academic performance. |
| Rubeena Gul, Hayat Muhammad Khan, Sardar Raheel Alam, Faizan Luqman, Aymen Shahab, Hifsa Sohail<br>J. Med. Sci. 2016, Vol. 24, No. 1: 16-18 | Absenteeism among Medical Undergraduate Students | To assess the prevalence and causes of absenteeism among the undergraduate medical students of a Public Sector Medical College in Peshawar | The main reasons reported for missing lectures was lack of free time between classes, dislike of lecturers, teaching style, peer pressure and lack of sleep. | • There is a need to improve quality of lecture materials and teaching techniques. Regular training for instructors to help them improve their teaching methodologies could be a useful intervention.<br>• Peer assisted learning and problem based learning should be introduced in order to make it interactive. |
| Mukhtar F, Chaudhry AMJJ o AMCA 2010;22(3):210-3. | Faculty development in medical institutions: where do we stand in Pakistan? | • To determine the proportion of medical colleges involved in faculty development activities,<br>• to assess the types of faculty development activities, and<br>• to identify the factors influencing such activities, along with formulating recommendations for faculty development | Lack of incentives 20 (54%), lack of faculty interest 15 (40%) and a shortage of trained facilitators 15 (40%) as barriers to faculty development activities. | • Mandatory training workshops should be conducted by the PMDC,<br>• Recognition should be given to faculty undergoing training activities<br>• there should be active interaction between institutes to facilitate each other in matters pertaining to medical education |

**Table-2: Absenteeism reason and recommendation —Curriculum and Learning Environment**

| Author /Year | Title | Objective | Significant Findings | Recommendations |
|---|---|---|---|---|
| White C, Bradley E, Martindale J, Roy P, Patel K, Yoon M, Worden MK. Medical education. 2014 Mar;48(3):315-24. | Why are medical students 'checking out' of active learning in a new curriculum? | To understand why (especially with a newly adopted student-centered curriculum) many students were opting to learn on their own outside the curriculum and learning environment. | ● Passive classroom exercises which may not promote active learning and collaborative learning.<br>● Students perceive that they are not prepared for adult or active learning | ● Help students understand the nature of deep learning and their own developmental progress as learners<br>● Provide robust faculty development to ensure the consistent deployment of higher-order learning activities linked with higher-order assessments. |
| Gupta A, Saks NS. Medical Teacher. 2013 Sep 1;35(9):767-71. | Exploring medical student decisions regarding attending live lectures and using recorded lectures | ● To identify factors involved in the decisions first and second year medical students make about attending live lectures,<br>● To discover students use recorded lectures, and if their use affects live lecture attendance | Decisions about lecture placement in the curriculum need to be based on course content and lecturer quality. | Identify parts of curriculum where lectures are effective |
| Zazulia AR, Goldhoff P. Teaching and learning in medicine. 2014;26(4):327-34. | Faculty and medical student attitudes about preclinical classroom attendance. | ● To investigate differences in medical educator and student attitudes regarding preclinical attendance,<br>● To assess the impact of absenteeism on educators and the learning environment, and<br>● To explore a possible relationship between attendance and professionalism | Students view class as a tool to learn factual material and a preclinical students primary task is to learn factual material and the means of mastery is not important | ● Incorporate interactive learning techniques<br>● Active educational programs that require attendance and student engagement |
| T Sharmin, E Azim, S Choudhury, S Kamrun AKMMC J 2017;8(1):60-6 | Reasons of Absenteeism among Undergraduate Medical Students: A Review | To explore the reasons of absenteeism in undergraduate students | ● Missing home comforts.<br>● Class environment is not conducive enough for learning. Poorly ventilated lecture hall, overcrowding in the classrooms and uncomfortable sitting arrangement in class are important factors for not attending class.<br>● Poor infrastructure | ● Promote conducive Learning environment by ensuring adequate ventilation of the lecture halls.<br>● Classroom size should be designed in such a way that all student can be seated comfortably.<br>● Infrastructure of the institute should be properly designed according to the educational needs of the students. |

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**TZ:** Literature review, composition and editing the section on learning environment
**AS:** Literature review, composition and editing the section on student related factors and review table
**RSM:** Literature review, composing and editing student related factors and overall flow of the article
**RA:** Literature review and composing curriculum related factors, review table and review of manuscript

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