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A study on the preference of teaching methods among medical undergraduate students in a tertiary care teaching hospital, India

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Abstract:

BACKGROUND: In medical education, the learning–teaching method is an active process in which both students and teachers have to work mutually to enlighten the knowledge. Currently, in India, there is an increase in the enrollment of students in medical fields and thus medical educators face the challenge of teaching larger classes in a short period. Furthermore, it is observed that there is a lack of consensus about the best teaching and learning methods for medical students. This study aims to assess the preference of teaching methods and identify the reason for absenteeism among medical undergraduate students in a tertiary care teaching hospital.

MATERIALS AND METHODS: A cross-sectional study was conducted among 246 medical undergraduate students in a tertiary care teaching hospital from August 2019 to October 2019. A pretested, validated self-administered questionnaire was used to assess the preference of teaching methods. The data were analyzed using SPSS-IBM software 23.

RESULTS: The majority of the students belonged to 20–21 years of age group. Most of the students preferred practical demonstration (81.3%) as the preferred method of teaching and computer with a liquid crystal display projector as ideal media for teaching (63.8%). Boring/monotonous teaching class was found (73.5%) to be an important cause for absenteeism among medical undergraduate students.

CONCLUSION: The results indicate that the medical student's preference is changing from passive learning to active learning. We conclude by linking these emerging perceptions with suggestions to help drive excellence in medical education.

Keywords:

Absenteeism, active learning, medical education, perceptions and preferences, teaching methods

Introduction

The goal of undergraduate medical education is to produce a physician with adequate knowledge of health and diseases, reasonable medical skills, and a healthy attitude toward patients and their families.^[1] In the current scenario, teaching in a medical college is considered as “ever-evolving” process.^[2] It is a hurdle in any medical college that a teacher needs to deliver

vast medical knowledge in a very short schedule and students need to remember, retain, interpret, and apply practically. In India, various teaching–learning methods are followed in medical education such as didactic lectures, role plays, seminars, case studies, demonstrations through videotapes, problem-based learning, and tutorials to facilitate learning among medical students. In addition, it is observed that to witness the progress in medical education,

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more emphasis should be focused on teaching methods along with technological advancement.^[3] In addition, absenteeism is an ongoing problem in many higher education university, especially in medical education. Literature has identified many direct and indirect factors influencing absenteeism among medical students. Among them, absenteeism was strongly associated with lack of subject interest, poor relations with demonstrators, poor teaching methods and strategies, unfavorable learning environment, ill-health excessive social mobilization, and easy availability of online learning contents.^[4] Despite the advancement of technologies which makes the medical education classes more interactive, interesting, and presentable, low attendance at lectures persists as an issue. It is important to analyze the perception on quality of teaching and learning methodology for the development of analytical approaches for the identified problem areas and the difficulty posed by the students to overcome absenteeism.^[5] One of the best approaches to reinforce the medical education at the delivery level is to understand the student perception about teaching and learning methods. Hence, this study was conducted among undergraduate medical students in a tertiary care hospital with the objectives to assess the preferred teaching and learning methods and the factors influencing absenteeism among the undergraduate students and to analyze the student's perceptions for improving their class attendance and quality of the classes in a tertiary care teaching hospital.

Materials and Methods

Study design

The study was a cross-sectional study conducted among the undergraduate students in a tertiary care teaching hospital.

Study duration

The study was conducted for a period of 3 months from August 2019 to October 2019.

Sample size determination

From the previous literature, the proportion of medical students in Malaysia choosing group discussion as the preferred method of teaching was 27%.^[2] Assuming 95% confidence with 5% allowable error, the sample size for a cross-sectional study was calculated by the formula $n = 4pq/E^2$, where p is the prevalence, q is $1-p$, and E is allowable error of P . The sample size arrived was 246.

Study population and sampling method

The study population comprises undergraduate Bachelor of Medicine, Bachelor of Surgery (MBBS) students from all academic years including interns of a tertiary care teaching hospital. Inclusion criteria included (i) the students who were present in class during the study was

conducted and (ii) students who gave written informed consent. A total of 720 students were enumerated at the time of the study and every 3rd student of an academic year batch including interns was enrolled by systemic random sampling method after choosing the first student randomly.

Data collection procedure

Administration permissions were obtained from the Principal and HODs of the respective departments of the student's prior to data collection. After obtaining written informed consent, a self-administrated questionnaire was given to the study participants and the data were collected.

Study instrument

The study instrument was pretested with 10% of total sample size derived among the students of undergraduate dental students and the necessary changes were made. Since the tool was pretested with another group of students from medical profession (dental discipline), no significant psychometric variations were found and no change was required to be made in view of psychometric perspectives. The study tool comprises three sections. Section 1 comprises the profile of the study participants. Section 2 comprises preference of method of teaching and media used for teaching among the students and the cause for preferring it. Section 3 comprises perception of students regarding factors for improving the quality of teaching classes and class attendance.

Statistical analysis

The data were analyzed using Statistical Package for the Social Sciences (IBM) software version 23(IBM Software groups and services, India). The mean and standard deviation was calculated. The quantitative data were expressed in proportions.

Ethical consideration and confidentiality

Institutional ethical committee approval was obtained before starting the study. The confidentiality of the study participants was maintained in all the phases of the study.

Results

In Table 1, 50.8% of the study participants were in 20–21 years of age group. 61.4% were male and 38.6% were female and majority of the students were hostellers (91.5%). Equal participants (21%–27%) were included from all the end semesters.

In Table 2, the majority of the study participants preferred practical demonstration (81.3%) as an ideal teaching method, followed discussion (64.2%), chalk and talk method (58.5%), and lecture classes (35.3%).

Table 1: Distribution of the profile of the study participants

Variables	Frequency (%)
Age group (years)	
18-19	35 (14.2)
20-21	125 (50.8)
22-23	77 (31.3)
24-25	8 (8)
>26	1 (1)
Gender	
Male	151 (61.4)
Female	95 (38.6)
Residence	
Hostel	225 (91.5)
Day scholar	12 (12)
Rented house	1 (1)
Semesters	
2 nd	66 (26.8)
4 th	67 (27.2)
6 th	53 (21.5)
8 th	60 (24.4)

The major students preferred practical demonstration because it is easy to understand (69.1%); the medical curriculum is based on practical method (43.9%) and elaboration is clear (45.5%).

The study participants choose Computer with Liquid Crystal Display projectors(63.8%), whiteboards(52.8%) and blackboards(46.7%) were choose by the students as preferred media for teaching. Easy to understand (68.6%) and attractive/interesting were the causes chosen by the students for preferring LCD projector as ideal media for teaching.

In Table 3, it was observed that boring or monotonous class(73.5%), non-attractive classes (57.7%), longer duration of classes(37.8%) and habits like late night sleep pattern among the students was found to be the major cause for less attendance among the study participants. To improve interaction with students (63.8%), student-friendly approach (63.4%) and more practical/discussion class (56.09%) were the suggestion given by students to increase in class attendance. Good knowledge about the topic in teachers (52.08%), good lecture condition (49.18%), clear voice of teacher (48.5%), and classes in small group (46.7%) were suggested by the study participants for improving the quality of the class.

Discussion

In this study, majority of the participants were male and belonged to 21–24 years of the age group, which was coherent with the results of Joshi *et al.*^[6] Majority of the students preferred practical class demonstration as the preferred method. Similar other studies preferred lecture and problem-based teaching and learning as an ideal

Table 2: Distribution of preferred method and media of teaching among the study participants

Variables	Frequency (%)
Preferred method of teaching (multiple options)	
Lecture	87 (35.36)
Chalk and talk	144 (58.53)
Discussion	158 (64.22)
Practical demonstration	200 (81.30)
Roleplay	28 (11.38)
Social media	42 (17)
Others	6 (2.4)
Causes for preferring practical demonstration (multiple options)	
Medical curriculum based on practical method	108 (43.9)
Easy to understand	170 (69.1)
Give a vivid idea about the subject	73 (29.6)
Explanation is good/elaboration clear/focused	112 (45.5)
Clear conception/idea	160 (65)
According to question pattern of examination	40 (16.2)
Active participation of student	95 (38.6)
Practical and theoretical knowledge's student	89 (36.1)
Preferred media of teaching (multiple options)	
OHP	29 (11.7)
Computer with LCD projector	157 (63.8)
Blackboard with chalk	115 (46.7)
Whiteboard with pen	130 (52.8)
Model and charts	107 (43.4)
Others	7 (2.8)
Causes for preferring computer with LCD projectors (multiple options)	
Attractive/interesting	125 (50.8)
Easy to understand	169 (68.6)
3D image/realistic picture	118 (47.9)
Less time-consuming	63 (25.6)
Note-taking is easier	126 (51.2)
Give a clear idea	72 (29.2)
Comfortable	3 (1.2)
Others	3 (1.2)

3D=Three-dimensional, OHP=Over Head Projector, LCD=Liquid Crystal Display

method of teaching.^[3] The study participants preferred practical demonstration as superior because unlike other methods, it is very easy to understand and the elaboration is clearer and focused; moreover, the medical curriculum is based on practical demonstration. Although the Medical Council of India emphasized lecture method as one of the old-age and the principal methods which conveys the facts with evidence among medical students, it is the one-way communication process that arouses the question of preference nowadays.^[7] In the current study, the other method of preferred teaching was group discussion, in which increases the students' involvement and commitment and promoting active learning and making learning further enjoyable.

Majority of the students preferred LCD projects and white/blackboard with chalk/pen as prime media for

Table 3: Distribution of perception of study participants on the improvement of quality of the teaching classes

Variables	Frequency (%)
Causes of less attendance among the students (multiple options)	
Boring/monotonous	181 (73.5)
Too long class	93 (37.8)
Poor quality	92 (37.39)
Not attractive/interesting	142 (57.7)
Old teaching-learning method	36 (14.6)
Frequent item/class test	44 (17.8)
Late-night sleep of student	129 (52.43)
Not audible from the back bench	61 (24.7)
Addiction	16 (6.5)
Homesickness	31 (12.6)
Family burden	6 (2.43)
Private coaching	16 (6.5)
Others	4 (1.62)
Suggestions for increasing class attendance (multiple options)	
Need interaction	157 (63.8)
The teacher should do more blackboard work	74 (30.08)
Teacher should be knowledgeable/efficient	79 (32.1)
Student-friendly approach	156 (63.4)
Disciplinary action for nonattendance	33 (13.4)
The topic should be interesting	105 (42.6)
Audible from backbench	73 (29.67)
More practical/discussion class	138 (56.09)
Regular class test	78 (31.70)
Duration of class to be shortened	80 (32.52)
Regular counseling	43 (13.41)
Others	5 (8.13)
Suggestion for improving quality of class (multiple options)	
Teacher should have sufficient knowledge about the topic	128 (52.08)
Good condition of lecture theatre	121 (49.18)
Regular short-term assessment of student	97 (39.4)
Teacher should have clear voice	119 (48.5)
More teacher-student interaction	138 (56)
Small revision of previous class at the beginning	96 (39)
Class in small group	116 (46.7)
More practical class	103 (41.8)
Class should be slow pace	40 (16.26)
Others	1 (0.4)

teaching as it is easy to understand and being attractive and interesting. The results are similar to a study conducted by Gupta and Rathod, in which the majority of the medical students preferred blackboard (44.6%) and PowerPoint presentation (36.1%) as the best teaching media for medical curriculum subjects.^[3] In a study conducted in Rajasthan among medical students, majority (71%) of them preferred blackboard as an ideal teaching aid than PowerPoint presentation.^[8] Chaudry *et al.* also showed that 54% of students preferred black/whiteboard when compared to LCD projectors/overhead projector.^[9] The similar results from varying regions of

the country imply that the students are accustomed to blackboard teaching from their school days and also they feel there is better student–teacher orientation and this type of medium provides much time for taking notes during classes for the better understanding of the medical subjects.

In this study, more than half of the students, about (73.57%), had an opinion that the cause of less attendance was having monotonous classes, followed by not attractive/interesting classes (57.72%) and late-night sleep of students (52.43%). In a study conducted in Tripura Medical College, the cause of absenteeism in lecture class was mainly due to preparation for the examination (55.8%).^[10] In another study conducted in Hawassa University, the main cause of absenteeism was preparation for examination, followed by lack of interest found in only 8.1% and 4.7% of students.^[11] In another study conducted in Bangladesh, the main cause of absenteeism was sickness (17%) and inconvenient class schedule (15%) with only 11% of absenteeism due to lack of interest.^[12] There is extensive literature worldwide, which showed a direct association between absenteeism among medical students with lack of subject interest, poor health, sleeplessness, excessive socialization, unfavorable learning environment, and poor teaching strategies and moreover easy access to online lecture contents has its own role in increased absenteeism among the medical students.^[4]

Conclusion

From the study, it was highlighted that most of the medical students preferred the conventional mode of teaching like practical demonstration and with the use of blackboards. It clearly indicates that the medical student's preference is changing from passive learning to active learning. Moreover, the medical education is facing a paradigm shift where it is becoming more student centric than teaching centric. Hence, it is a responsibility of a medical teacher or institute or university to meet the perception and preference of individual medical students in teaching and learning methods to strengthen medical education.

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Conflicts of interest

There are no conflicts of interest.

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