Medical Education

Students' perception of lacunae in medical education in India, and suggestions for reforms

VAISHALI ADLAKHA, TANVI JHA, PALLAVI SAHOO, AISHWARYA MURALIDHARAN, DAMODAR BACHANI

ABSTRACT

Background. The methods of classroom and clinical teaching in the MBBS course in India have not seen major modifications or innovations in recent decades, leading to dissatisfaction among students. Lack of conclusive data in this regard and absence of a mechanism for students' feedback are also areas of concern. We aimed to assess the satisfaction levels and identify lacunae in undergraduate medical education in India.

Methods. We used an 8-item questionnaire to identify lacunae in medical education. A total of 336 undergraduate medical students from second and third professional years and interns of Delhi voluntarily participated in the study. Data were analysed using SPSS 17 version.

Results. Eighty-one per cent of students were not satisfied with teaching methods due to lack of coordination between different departments and lack of problem-based learning. Sixty-five per cent of students did not find the classroom environment conducive to learning due to large sizes of teaching batches and inadequate maintenance of infrastructure. Eighty-six per cent of students were not satisfied with learning experience during clinical postings attributing it to 'doctors being too busy to teach in clinics'.

Conclusion. There is dissatisfaction among students indicating their desire for improved methods in medical education. Suggestions include short-term reforms such as encouraging interdepartmental planning and introducing problem-based learning, coupled with long-term measures such as improving infrastructure.

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INTRODUCTION

The MBBS course in India is divided into nine semesters covering 19 subjects over a period of 4.5 years. It is considered one of the most challenging undergraduate courses taught in the country. This is followed by a year of compulsory internship where students are posted in various clinical departments in hospitals and health centres. However, any course can be productive only if its students find the environment conducive to learning. Teaching must, therefore, provide appropriate conditions for learning and an environment with minimal stress.[1] The traditional system of classroom and clinical teaching methods has been in use for decades but there is no formal mechanism to obtain students' feedback on the education system. Medical students have, over the years, expressed their dissatisfaction with the curriculum and the teaching and learning methods used, in a number of developing countries,[2] including India.[3] The need to provide a framework to produce innovation in medical education on a large scale to achieve a more sustainable model is also being recognized in other countries.[4] However, a major drawback in the Indian scenario is the lack of conclusive data or reporting on this matter by students as well as teaching faculty.

Even though the aforementioned studies have been successful in getting feedback of students, few such studies have been conducted and published on views of medical students in India. We, therefore, aimed to identify the lacunae as perceived by the target learning population of the MBBS curriculum—the undergraduate students in Delhi, and suggest reforms based on their opinions.

METHODS

Study design

A pre-tested 8-item questionnaire was used in this cross-sectional study. Students were asked to rate their MBBS education thus far on a Likert scale (1: very poor; 5: excellent), three questions were close-ended (yes/no) and four were of multiple choice-multiple response (Appendix). Students were also asked to mention the lacunae perceived by them in education received in classrooms and hospital settings, as well as suggestions for reforms. Participants' response was sought on a voluntary basis, while maintaining confidentiality and without recording any identifying details.

Participants

Participants identified were students pursuing MBBS from four government medical colleges in Delhi—Maulana Azad Medical College, Lady Hardinge Medical College, University College of Medical Sciences and Vardhaman Mahavir Medical College. They included students from the second and third professional years (both Parts I and II) and interns. Students from the first professional year were excluded as they did not have exposure to clinical settings.

The survey

The questionnaire was pre-tested on 30 students and relevant changes were made. Prior to the distribution of the questionnaire, the participants were explained the method of filling the questionnaire, the purpose of the survey and its implications.

Lady Hardinge Medical College, New Delhi 110001, India
VAISHALI ADLAKHA, TANVI JHA, PALLAVI SAHOO, AISHWARYA MURALIDHARAN, DAMODAR BACHANI Department of Community Medicine

Correspondence to VAISHALI ADLAKHA, 26-C, Janyug Apartments, Sector 14 Extn, Rohini, Delhi 110085; *vaishaliadlakha93@gmail.com*

Participants' response was voluntary and their confidentiality was maintained. Hard copies in person and on-line version of the questionnaire via email were distributed to students of the four medical colleges. The survey was conducted during 15–31 January 2015. The results were analysed using SPSS17 version.

RESULTS

Of the 336 undergraduate medical students from four government medical colleges of Delhi, who participated in the study, 58% rated their medical education thus far as average, 28% as good, 10% poor, 2% very poor and 2% excellent. About 81% of students were not satisfied with the teaching methods used in the class. Absence of coordination between different departments and lack of problem-based learning were the major reasons cited for dissatisfaction in teaching methods (Table I).

About 65% of students did not find the classroom environment conducive to learning, mainly due to the large size of batches and lack of infrastructure (Table II). About 86% of students were dissatisfied with the learning experience during clinical postings; their main reasons were 'doctors being too busy to teach' and 'a large number of students in each batch' (Table III).

Students were also asked to suggest reforms in teaching methods and in the learning environment. Use of standardized videos depicting important concepts (68.7%), implementation of a mentor–mentee programme (52.4%) and change of timings of postings from 9 a.m. to 12 noon to after 12 noon (22.9%) were the main suggestions to improve the learning experience.

TABLE I. Students' reasons for their dissatisfaction with teaching methods used in class (multiple response)

Reason	*n* (%)
Lack of coordination between different departments	199 (59)
Lack of problem-based learning	164 (49)
Lecture presentations are not made easily available to students	148 (44)
Inadequate utilization of audiovisual aids	102 (30)
Lack of student–teacher interaction during lessons	102 (30)
Lack of adequate teaching skills (example: communication skills and ability to use technical aids)	75 (22)
Lack of adequate preparations by the teachers for the lecture	63 (19)

TABLE II. Students' reasons for their perception of a poor classroom environment

Reason	*n* (%)
Size of teaching batches	144 (48.9)
Lack of infrastructure and/or its maintenance	116 (33.5)
Size of classrooms	99 (29.5)
Hesitation in asking doubts due to fear of being looked down upon by peers	74 (22.0)
Hesitation in asking doubts due to lack of encouragement by teachers	62 (18.5)
Lack of encouragement for participation in the lecture	62 (18.5)
Inability to concentrate in class due to disturbance by peers	54 (16.1)

TABLE III. Students' reasons for their dissatisfaction with clinical postings

Reason	*n* (%)
Doctors being too busy attending to patients to teach	251 (74.7)
Too many students in a batch	209 (62.2)
Lack of hands-on experience during postings	168 (50.0)
Less duration of clinical postings	50 (14.9)

DISCUSSION

A number of studies have revealed dissatisfaction of medical students in graduate courses. A study done among the students of a medical college in India, reported a progressive deterioration in the students' perception of the medical education environment over successive semesters.[5] Students were stressed more often and felt that the course organizers emphasized on factual learning and were authoritarian.[5] In a survey of students in Pakistan, an overwhelmingly negative reaction towards the education methods was seen. The majority of students expressed dissatisfaction with the traditional passive methods of teaching used in the classroom, which are similar in most medical colleges in India. The study further reported on the need to adopt an active enquiry-based mode of teaching during lectures.[6] The need to incorporate alternative and interactive methods of learning is being recognized increasingly within the medical education fraternity throughout the world. An emphasis is now being laid on the need for adoption of problem-based learning in classrooms.[5,7] It has been shown that this method leads to an increase in learning and recall in students.[7] Further, evidence has shown that computer-based cognitive representation, when incorporated into the curriculum, improved learning of clinical reasoning in problem-solving and in the assimilation of knowledge.[8]

The results of our study show that students desire changes in the system of medical education to facilitate improved learning.

Less than one-third of students believed that medical education is good/excellent indicating that the overall satisfaction levels are low. The reasons mentioned by the students include lack of appropriate learning methods adopted in the classroom, non-conducive environment for study and inadequate experience during postings. Four-fifths (81%) of students were unhappy with the teaching methods and they attributed this to a lack of coordination between different departments, which led to lack of comprehension. For example, simultaneous teaching of central nervous system in physiology and neuroanatomy in anatomy will result in better understanding of the topic. Lack of problem-based learning was another major reason for their dissatisfaction, which has also been reported by previous studies.[6] Students were generally satisfied by the preparation of teachers but not with the level of student–teacher interaction. Further, lack of adequate utilization of audiovisual aids and non-availability of lecture slides were common complaints.

About two-thirds of students felt that the classroom environment was not conducive to learning due to large batches of students. Students also reported that they were hesitant in clearing their doubts due to the fear of being frowned upon by their peers and lack of encouragement by their teachers.

Over 85% of students were dissatisfied with the learning experience during their clinical postings and reported that doctors in hospitals were generally too busy attending to patients and did not have time to teach. Too many students in a batch—leading to lack of hands-on experience—was also reported to be a problem by the students. Since students spend at least 3 hours each day in clinical postings, it is imperative that this time be utilized effectively.

The aforementioned problems may be addressed by simple measures such as encouraging departments to plan their teaching schedule so that related topics can be covered around the same

time to improve comprehension among students. There is an urgent need for teaching to focus on application of knowledge rather than rote learning by encouraging students to think on their feet. Timings of clinical postings can be changed to avoid clash with doctors' rounds. Since many students mentioned hesitation in asking questions, teachers must encourage students to ask questions. In the longer term, infrastructure in government medical colleges should have facilities commensurate with the increase in number of students.

Students also responded favourably to our suggestion of starting a teacher–student interaction programme, such as a mentor–mentee programme and introduction of standardized videos depicting important concepts**.**

Limitations

Our study covered four government medical colleges of Delhi and thus, cannot be representative of the country with over 400 government and private medical colleges. As we did not interact with students, a qualitative analysis of reasons for choosing the answers could not be ascertained. The study also did not cover views of the faculty members. A multi-centric study representing various states of India would be desirable.

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Conflicts of interest. None

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Appendix: Questionnaire

1. On a scale of 1 to 5, how would you rate MBBS education thus far:
   1: very poor 2: poor 3: average 4: good 5: excellent
2. Are you satisfied with the teaching methods used in the class? (Yes 1; No 2)
3. If not, please tick the following possible reasons (you can tick more than one option): (Yes 1; No 2)
   a. lack of student–teacher interaction during lessons
   b. lack of coordination between different departments during the year causing reduced understanding of the subject matter. (Example: When central nervous system is taught in physiology then neuroanatomy should be taught around that time or earlier)
   c. inadequate utilization of audiovisual aids
   d. lecture presentation slides are not made easily available to all students after a class
   e. lack of problem-based learning
   f. lack of adequate preparation by professors for a lecture
   g. lack of adequate teaching skills in professors, e.g. communication skills and ability to use technical aids
   h. Any other (please specify)
4. Do you think the classroom environment is conducive to learning? (Yes 1; No 2)
5. If not, please tick the possible reasons (you can tick more than one option) (Yes 1; No 2)
   a. size of classrooms
   b. size of teaching batches
   c. lack of encouragement for participation in the lecture
   d. hesitation in asking doubts due to
      (i) fear of being looked down upon by peers
      (ii) lack of encouragement by teacher
   e. lack of infrastructure and/or its maintenance
   f. inability to concentrate in class due to disturbance by peers
   g. any other (please specify)
6. Are you satisfied with the learning experience during clinical postings? (Yes 1; No 2)
7. If not, please tick the possible reasons (you can tick more than one option) (Yes 1; No 2)
   a. Doctors being too busy to teach
   b. Too many students in one batch
   c. Less duration of clinical postings
   d. Lack of hands-on experience during posting
   e. Any other (please specify)
8. Which of the following suggestions would you like to see implemented? (Yes 1; No 2)
   a. Change of posting timings from 9 a.m. to 12 noon or after 12 noon.
   b. Implementation of a mentor–mentee programme
   c. Standardized videos depicting important concepts approved by the MCI (Medical Council of India) to be made available to all students
   d. Any other (please specify)

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