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Perspectives of Medical Students Towards Current Admission Process, Medical Curriculum and Teaching Methods in India

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Abstract
Medical education in India is very demanding and has an extensive curriculum with intensive clinical training. The present study aims to assess the perspectives, opinions feedback of medical students on medical curriculum, teaching methods, examination patterns admission process into medical colleges. A cross-sectional survey-based study was conducted among medical students from various medical colleges. A 15-item questionnaire including questions on both the personal and academic aspects of the medical students was designed and asked to fill by the students to obtain their feedback. A total of 262 medical students participated in the study. Most of the medical students preferred to study the important (51%) and clinically relevant topics (20%). The preferred source of studying is standard textbooks (52%) and the source would alter with the subject or topic. Most of the medical students (49%) expect more on-the-table/clinical practical experience from their medical college and aim to achieve good rank in their professional or university examinations. The best teaching method preferred by the medical students was Chalk and Talk (56%). Nearly 59 % of medical students stated that only some parts of Biology and Chemistry from their entire pre-medical subjects were useful for them in their MBBS program. Most of the students preferred that question papers should consist of more application/clinical-oriented questions followed by MCQs in their professional exams. About 92% of medical students suggested that clinical research and psychology should be included and given more emphasis in their MBBS curriculum. An integrated curriculum is preferred by the students and clinically relevant topics should be given more emphasis in this curriculum. The medical curriculum should be updated with the inclusion of clinical research and psychology. These opinions and feedback from students help in modifications in the medical curriculum in the future.

INTRODUCTION

The perception of health has considerably changed over the years this calls for the need for qualified doctors. With one of the best medical education systems in the world, India contributes significantly to global health care by producing highly qualified and effective doctors. The selection procedure for medical schools throughout India is done by a single entrance exam NEET exam conducted by the NTA (National Testing Agency) once a year[1]. The National Eligibility-cum-Entrance Test (NEET) exam is conducted for all admissions to bachelor degrees in Medicine and Surgery (MBBS) and other clinical courses. The NEET exam was aimed to eradicate dishonesty in medical admissions and promote merit-based admission into medical colleges for qualified and deserving candidates, thereby replacing all other entrance exams to medical schools across the country. The NEET examination is an MCQ-based examination with Physics, Chemistry, Botany, Zoology as its subjects, with a maximum mark of 720. The use of these subjects for an MBBS student is a subject of controversy[2,3].

Medical education in India is very demanding and has an extensive curriculum with intensive clinical training. The MBBS students have to study 15 core subjects[4]. The approach medical students take towards their subject determines the sources they use to study. That in turn decides the implication of these subjects in their future career by these students. There are various standard textbooks and exam-oriented books for medical students. The source of information also has a great impact on the understanding of the topic by the student. These days online lectures are also proving very useful to a large section of medical students. Pre and Para Clinical subjects are considered the base of all clinical subjects. These include Anatomy, Physiology, Biochemistry (with some molecular biology), Pharmacology, Pathology, Microbiology, Preventive and Social Medicine Forensic Medicine[5,6].

The medical field has advanced recently due to significant breakthroughs in science and technology. These advancements necessitated the up gradation of the education system and the development of new approaches and concepts in medical education[7-9]. Most of the medical schools in developed and developing countries are suggesting and upgrading their medical curriculum from a traditional discipline-oriented to an integrated curriculum[10,11]. Some medical colleges use a hybrid integrated curriculum that involves case-based sessions (CBL), problem-based learning (PBL), interactive sessions, model study, small group format interactive sessions, mini-seminars, etc[12-14].

In India, the MBBS course comprises experimental integrated teaching for 4½ years and 1 year of compulsory residential rotatory internship in a hospital setting[5]. Having a sound knowledge of Clinical Research is important for a medical graduate to have more exposure to the field, especially in the era of EBM (Evidence Based Medicine)[6,10]. Also, mental health is gaining importance day by day. Given this fact, general physicians need to be well equipped with the basics of human psychology, for a better understanding of the mindset of patients and be able to provide basic psychiatric treatment and counselling[15]. The perspectives of a medical student about integrated teaching and the curriculum are not well understood. Student's opinions on the present curriculum and expectations may be helpful in the modification and up gradation of teaching and learning methods in medical colleges to produce efficient and skillful doctors for society. The present study is aimed to assess the perspectives of an MBBS student on these areas.

MATERIALS AND METHODS

A cross-sectional study among the medical students was conducted based on the questionnaire. MBBS students from various medical colleges were included in this study. A 15-item questionnaire including questions on both the personal and academic aspects of the medical students was designed to obtain feedback from medical students. The questionnaire consists of 3 sections: Section 1, questions focus on the approach of the medical students towards their subjects and their expectations from their medical college/school. Section 2, questions concentrate on the perspective of the medical students on whether to introduce and give more emphasis on subjects like clinical research and psychology in their curriculum. Section 3, mainly focuses on the perspectives of medical students about the entrance exam and admission process to the medical school.

This questionnaire was circulated among medical students across various medical schools through Google Forms. All the students were asked to fill the questionnaire genuinely and the responses were recorded. The data obtained was recorded and analyzed for descriptive statistics (Percentage, Mean) using MS Excel the results were obtained in the form of graphs, tables charts/figures.

RESULTS AND DISCUSSIONS

A total of 262 medical students (241 MBBS students and 21 Interns) completed the questionnaire survey. Of which 170 (65%) were females and 92 (35%) were males. The mean age of the participants was found to be 19.99±1.86 years. The students from Private medical colleges (66%) Government/Public medical colleges (34%) have participated in this study. The majority of the medical students (51%) prefer to study the important topics of their syllabus, whereas 20% study clinically relevant topics, 16% study everything given in the book 13% opted to study the

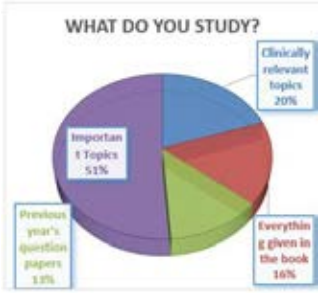

Fig. 1: Student's Responses to what they study

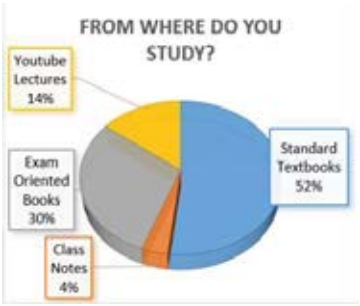

Fig. 2. Sources of Study preferred by students.

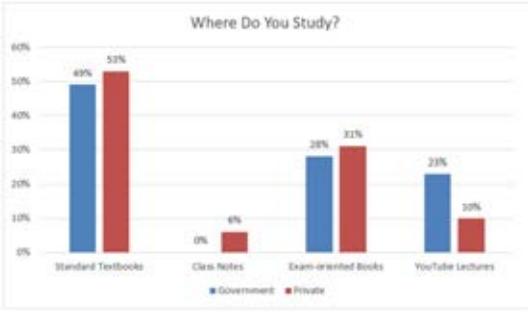

Fig. 3: Institution-wise Distribution of Response on sources of study

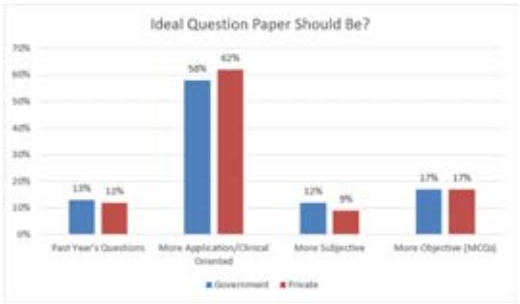

Fig. 4. Institution-wise Distribution of Responses for Ideal Question Paper

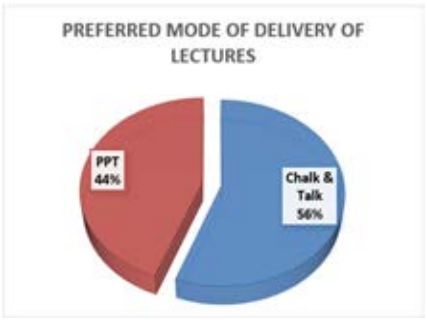

Figure 5: Most preferred method of Teaching

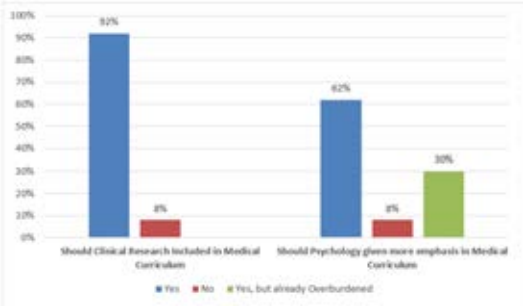

Fig. 6: Perspectives of Medical Students on Inclusion of Clinical Research and Psychology in their Curriculum

previous year's questions. Most of the medical students stated that their preferred source of studying is the standard textbooks (52%) and other study resources include exam-oriented books (30%), class notes (4%), YouTube lectures (14%) and most of the students also stated that the resources they use for studying change depending on the subject they are studying. Most of the students studying from the standard textbooks aim to become experts in clinical knowledge and practice (38%).

When the responses of the medical students were compared with their institutions, none of the medical students attending Government medical college studied from their class notes. Most of both government and private medical students study from the standard textbooks (Figure 3).

The comparison between the responses given by government and private medical college students revealed that medical students from both institutions suggested that the ideal question paper should consist of more application/clinical-oriented questions (Figure 4).

Nearly 49% of the medical students who participated in our survey stated that they expect more on-the-table/practical experience from their medical college and 18% expect more interactive classes in their course. Most of the MBBS students from private medical colleges aspire to achieve the highest ranks in their university/professional examinations than government medical college students. The best teaching method preferred by the medical students was Chalk and Talk (56%) than PPT or LCD slides (44%).

The medical students' approach towards the current procedure for admissions into medical colleges in India revealed that most of the students believe that a single medical entrance exam (NEET) for undergraduate admissions is a perfect entrance exam with high quality and promotes admission for deserving candidates based on merit. 59 % of medical students stated that only some parts of Biology and Chemistry from their entire pre-medical subjects were useful for them in their MBBS program and only 29% stated that the entire pre-medical subjects (Biology, Physics Chemistry) were useful whereas 12% stated

Table 1: Institution-wise distribution of students' responses.

Criteria	Opinion	Institution Type	
		Government College (%)	Private College (%)
What do you study?	Everything given in the book	22	16
	Previous year's questions	10	14
	Clinically relevant topics	16	19
	Important topics of syllabus	52	51
Where do you study?	Standard Textbooks	49	53
	Exam-oriented books	28	31
	Class Notes	0	6
	YouTube lectures	23	10
Ideal Curriculum	Lesser areas in more detail	59	60
	More areas in lesser detail	41	40
Ideal Question Paper	From Previous year's Questions	13	12
	More Subjective	12	9
	More Objective (MCQs)	17	17
	More Application/Clinically Oriented	58	62

Table 2: Student's Perspectives on Medical Curriculum and Examination Pattern.

Criteria		N	percentage
Ideal Curriculum	Lesser areas in more detail	157	60
	More areas in lesser detail	105	40
Ideal Question Paper	From Previous year's Questions	32	12
	More Subjective	27	10
	More Objective (MCQs)	44	17
	More Application/Clinically Oriented	159	61
Pre and Para Clinical Subjects	Important for PG Entrance Exam	16	6
	Important for passing professional exams	40	15
	Important for Clinical correlation and practice.	206	79
Should Clinical Research be included in the MBBS curriculum?	Yes	242	92
	No	20	8
Should Psychology be given more emphasis in the MBBS curriculum?	Yes	162	62
	Yes, but we are already overburdened	80	30
	No	20	8

that none of their pre-medical subjects were useful. Also, about 51.5% of the students suggested that more medical-oriented syllabus should be included in NEET instead of unrelated/futile topics or subjects.

(Table 2) depicts the perspectives of the medical students towards their MBBS curriculum and Examination pattern. Most of the students opted that the ideal question paper should be more application/clinical oriented (61%) than previous year questions (12%), objective (17%) subjective type (10%). About 60% of students stated that the ideal medical curriculum should include fewer topics in more detail. The majority of medical students (60%) believe that the pre- and para- clinical subjects (1st and 2nd years of MBBS) are important for clinical correlation and practice. Most of the students suggested that clinical research and psychology should be included and given more emphasis in their MBBS curriculum.

The approach of medical students towards their course and curriculum their opinion on various aspects of medical education revealed that most of the students prefer to study important topics and clinically relevant topics of their medical curriculum. They study these subjects from standard textbooks to get deep insights into clinical knowledge practice. Many students stated that the study source preferences change with the subjects/topics they study. This reveals that the standard textbooks contribute great knowledge to medical students.

Medical students expect more on-the-table/clinical practical experience from their medical college and some prefer more interactive classes and more focus on the PG (postgraduate) entrance exam should be provided in their medical college. Most of the students from private medical colleges aim to achieve good ranks in their professional or university examinations while students from government medical colleges aim to acquire profound clinical knowledge with Distinction or first-class in their university examinations. Novel teaching strategies and integrated teaching methods help medical students to understand the topics. Among the teaching methods, the chalk and talk method is preferred mostly by the students over the PPT/LCD slides. These results are quite similar to the study results reported by Sharma *et al*[5]. and Mohan *et al.*[16]. whereas our study results contradict the results of the studies conducted by Banerjee *et al*[17]. and Gregson *et al*[18]. showed that the best methods of teaching and learning include using LCD slides, Multimedia Mixed Aids.

Our study results revealed that many students think that the NEET exam is standardized and perfect in its purpose and quality which allows uniform evaluation of students throughout India for admission into medical colleges. Most of the students recommend more medical-oriented topics should be included in the NEET syllabus instead of useless and unrelated topics. Many medical students stated that

only some parts of Biology and Chemistry from their pre-medical subjects (Class XII-Physics, Chemistry Biology) are helpful in their course. Our findings suggest that the current syllabus of NEET and selection procedure should be modified to improve the quality of selection of potential students who are capable and would become professional, ethical, sensitive medical practitioners. Some students suggested that behavioral sciences/Psychology should be added to the NEET syllabus. Our study results coincide with the study findings reported by Avinash *et al*[1]. and Neelima Gupta *et al*[19].

The medical students expressed their honest thoughts and suggestions in the areas of improvement current medical curriculum and examination patterns. As medical students experience the curriculum, their feedback will be found useful and can be employed in the improvement of the design, development and improvement of medical curriculum and examinations. Most of the students preferred that question papers should consist of more application/clinical-oriented questions followed by MCQs (objective) in their professional exams. These study results are comparable to the studies conducted by Ahmed FZ *et al*[4]. Oyebola *et al*[20]. and Noreen Rahat *et al*[21]. In our study, the students also stated that the ideal medical curriculum should include fewer topics with greater depth and detail. This can help in greater understanding of the subject and decrease the burden on students. Our study findings also stated that most of the students think that the pre and para-clinical subjects in their 1st and 2nd year of MBBS are helpful in a clear and better understanding of the clinical subjects and important for acquiring profound clinical knowledge and practice. Many students perceived that Pharmacology is the most relevant and interesting basic science subject for clinical studies. These results are also comparable to the study findings reported by Sharma *et al*[5].

The majority of students suggested including clinical research courses (research teaching) and student research projects in their medical curriculum. Although research activities are not part of their regular medical syllabus, many students think that clinical research is important for evidence-based practice and helps justify the use of comparative regimens. The medical students also perceived that Psychology should be given more emphasis in their MBBS curriculum so that, the general physician can provide basic psychiatric treatment and counselling. Our study findings are also similar to the study conducted by Khan *et al*[10]. Chatterjee *et al*[22]. and Picks *et al*[23].

CONCLUSION

The majority of students preferred an integrated curriculum in which clinically relevant topics are given more emphasis and more practical/on-the-table clinical training should be provided. The medical curriculum should be updated with the inclusion of clinical research and psychology. The education system and medical curriculum should cope with the advancements in the medical field. Constancy in education approaches and refraining from evolving with the advancements will subsequently affect the competency level of medical students by deteriorating their knowledge, skills abilities as a healthcare provider leading to decreased understanding of the subjects and weaker performance. These opinions and feedback from students help in modifications in the medical curriculum in the future.

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