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Original Research Article

Inclination of Medical Students for Paraclinical and Preclinical Subjects during Integrated Teaching Modules: A Questionnaire Based Cross-Sectional Study

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Abstract

Introduction: Imparting knowledge about a clinical condition with consideration of related pre and para-clinical subjects leads to better perception and understanding, but liking towards individual subject(s) that are taught during these sessions may differ from student to student. This study aims to assess the opinion of medical students towards their likings for various subjects taught and teaching methods used in the integrated teaching sessions.

Aims & Objectives: To assess the opinion of medical students towards their likings for various subjects taught and teaching methods used in the integrated teaching sessions.

Material and methods: A total of two hundred students from this institution participated in this study. A multi-graded questionnaire was prepared and a pilot study of 20 students was done and the results were discussed among the authors to modify the questionnaire. This modified questionnaire was used in the main study. The same questionnaire was used for eliciting feedback from clinical students.

Results: Out of 200 medical students, male students (61.7%) were higher than female students (38.3%). The mean age was found to be 18.3 ± 4 years SD. Most of the medical students (50%) wanted to become doctor, to either become rich and famous or to satisfy parents aspiration, 29% wanted to go to abroad (considerable brain drain). 25% of the students perceived that Pharmacology is the most interesting and most relevant basic science subject for clinical studies and in Pharmacology theory hours of teaching is to be increased (19%). Biochemistry was the most uninteresting subject (33%) of Basic sciences and if they are assured of attendance which subject they would not like to attend, maximum students opted for community medicine (33%) and Biochemistry (33%) classes. The best teaching method is Chalk and Board Method (53%) followed by LCD slides (40.5%).

Conclusion: The observations were alarming and may be taken up seriously by the policy makers. They can fetch modifications in course curriculum of universities in future.

Keywords: Medical Education, Under-graduate, Integrated teaching, Cross sectional survey.

Introduction

The advancement in scientific knowledge is responsible for day to day addition of novel information in the field of medicine. When medical schools attempt to place, up to date information without coherence into their vast curricula, students face an overwhelming burden of dispersed information and desperately opt for rote memorization rather than understanding [1]. Studies show that students learn best when curriculum objectives are well identified, related to each other and allied to real- life experiences [2-3]. Learning can thus be facilitated in our medical schools by integration of knowledge in basic and applied subjects with eradication of redundant details. An integrated curriculum is one that is focused on the organisation of central themes or concepts and synchronises several subjects [4]. Medical institutes are following a modular, integrated, hybrid system in which traditional teaching of lectures, demonstrations and skill labs are flavoured with problem based learning (PBL), case based sessions (CBL), model study, seminars and interactive sessions [5]. Course curriculum of medical sciences is made by learned professors of Universities, politicians and the government officers without consulting the students for whom it is made [5]. In India, Medical education is an experimental integrated teaching of four and half years for MBBS degree. Until now it has not been assessed that what do the undergraduates think about the integrated teaching module. The academically challenging curriculum can be designed by inter departmental teams; formed by recruitment of faculty members from concerned disciplines. Accreditation of curriculum by students may be useful in further modification of teaching and learning methods in medical colleges of any country specially India [6-7].

This study aims to assess the opinion of medical students towards their likings for various subjects taught and teaching methods used in the integrated teaching sessions.

Methodology:

It was a cross sectional study based on anonymous Questionnaire. All the senior students, higher than third semester from HIMS, Dehradun were included in this study. A multigraded questionnaire covering both personal aspects and academic aspects of the medical students were used for eliciting feedback from medical students. Data was collected on this predefined structural questionnaire consisting of III-sections Section-A: General belief & future aspirations, Section-B: Liking & disliking for various subjects and Section-C: Likings for various teaching methods by one of the investigators personally by distributing the questionnaires to the students and students were asked to answer each question frankly, honestly leisurely and after cool thinking. The identity of the students was kept confidential to avoid bias and to enable them to reply boldly and honestly.

A total of two hundred students that included 100 students from Basic sciences (i.e. 4th semester) and 100 students from Clinical sciences (i.e. 5th to 7th semester and few final year students) were randomly selected. The students not properly exposed to Basic medical Sciences like 1st year (1 and 2nd Semester) were excluded from this study.

Data management and statistical analysis:

Descriptive statistics and testing of hypothesis were used for the analysis. The data collected was analyzed using Statistical Package for the Social Sciences (SPSS) for

Windows Version 22.0 (SPSS Inc; Chicago, IL, USA). The Chi-square test was used to examine the difference between different variables.

Results:

A total of 200 responses were recorded and analysed using appropriate statistical methods.

Demographic Characteristics:

Out of 200 medical students, the mean age was found to be 18.3 ± 4 years SD. In gender distribution, male students (61.7%) were higher than female students (38.3%).

Personal Aspects:

The results to the multigraded questionnaire were alarming. Most of the medical students (50%) wanted to become doctor, to either become rich and famous or to satisfy parents aspiration (Fig.1), 29% wanted to go to abroad (considerable brain drain) (Fig. 2). Almost 65% of the medical students wanted to marry with a doctor and only 5% students wanted to marry a housewife.

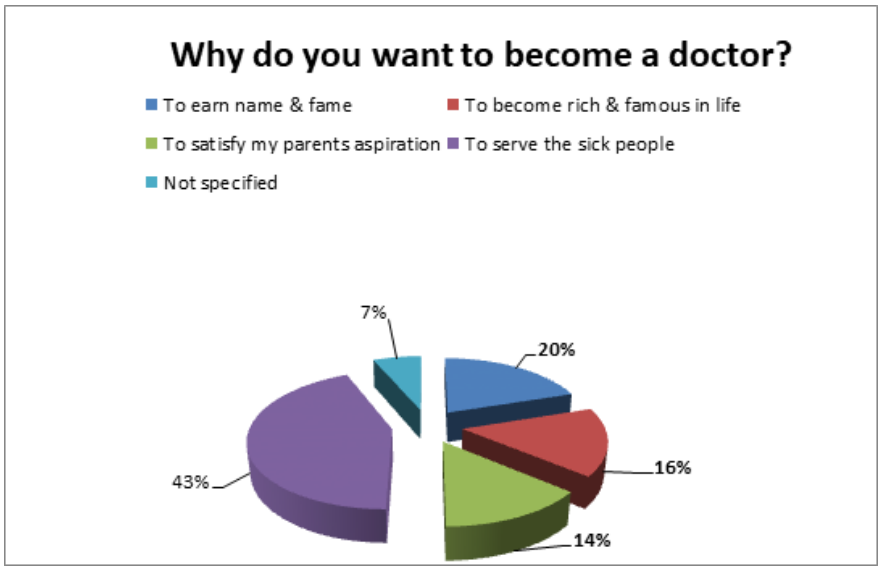

Figure 1:

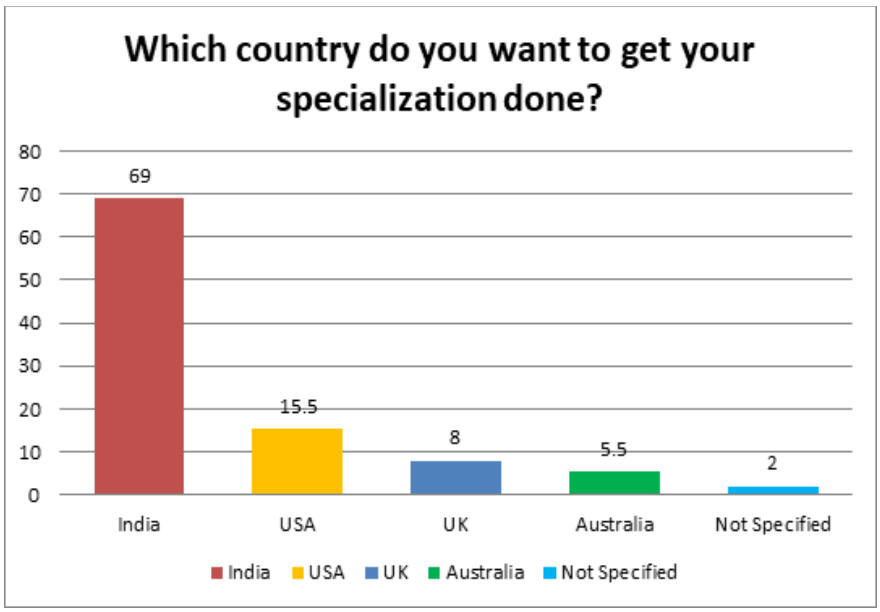

Figure 2:

Academic Aspects:

Table1 : Students Liking & Dislikings about Paraclinical and Preclinical subjects during integrated teaching module

Students Liking & Dislikings about Paraclinical and Preclinical subjects (%)									
Criteria	**ANA**	**PHY**	**BIO**	**PA**	**PH**	**FM**	**MICRO**	**CM**	**OTH (CLIN)**
most INTERESTING subject	11.5	5	4	23	25	1.5	10	9	11
MOST RELEVANT subject	8	6.5	1	22	24.5	0	9.5	13.5	15
Theory hours to be INCREASED	13.5	8.5	3	24.5	18.5	0	7	10	15
most UN-INTERESTING subject	6.5	8	33	4.5	7	0	6.5	30.5	4
LEAST RELEVANT subject	11	8.5	38	2.5	5	0	7.5	21.5	6
Theory hours to be DECREASED	9	10	32.5	4.5	5	0	7	28.5	3.5
DO NOT want to attend	8	7.5	25.5	2.5	7.5	0	10	33	6

Table 1 depicts, there was a relationship between Subjects and Most Interesting, Most Relevant and Theory Hours to be increased in Basic Medical Sciences. About 25% of the students perceived that Pharmacology is the most interesting and most relevant basic science subject for clinical studies and in Pharmacology theory hours of teaching is to be increased (19%). Biochemistry was the most uninteresting subject (33%) of Basic sciences and if they were assured of attendance which subject they would not like to attend, maximum students opted for community medicine (33%) and Biochemistry (33%) classes.

The best teaching method was Chalk and Board Method (53%) followed by LCD slides (40.5%) as shown in figure-3.

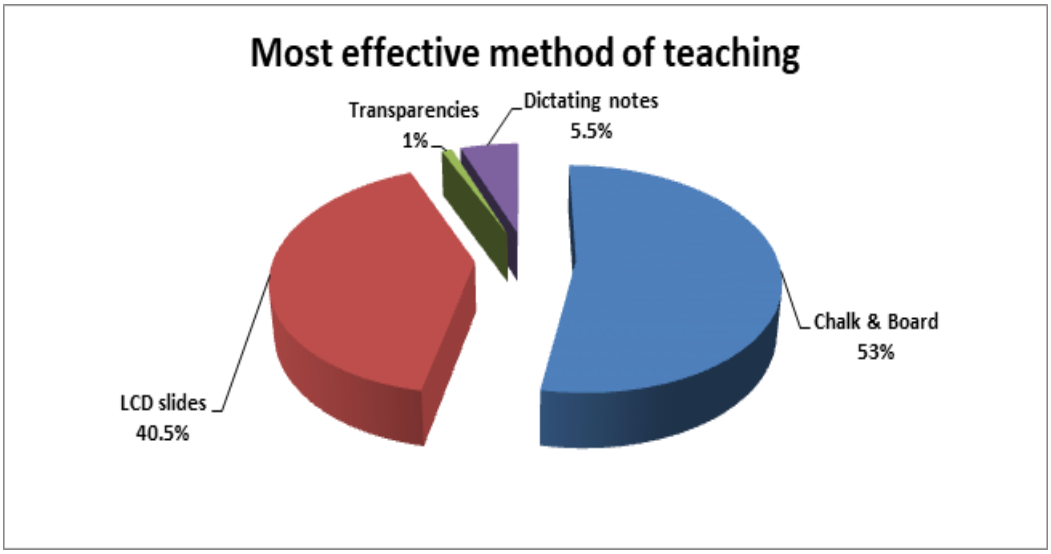

Figure 3:

Discussion:

The ultimate objective of medical education in this era is to bring new perspectives on content, process, extent delivery of integrated content but was not convinced with the traditional method of students assessment used in examination. They gave valuable feedback for implementation and reinforcement of Integrated Learning Program. The evaluation of medical curriculum, with integrated modular system being recently evolved as an important strategy that aims to bring coordination in the teaching and learning activities [8]. Learning is described as 'development of integrated, coherent growing web of understanding, knowledge and skill' [9]. Various TL methods are in trend in medical schools, all over the globe to ensure holistic rather than a fragmented approach in an attempt to promote evocative and meaningful learning. The hierarchy of teaching and learning activities in terms of their educational effectiveness comprise Level 1, interactive and clinically integrated activities; Level 2(a), interactive but classroom based activities; Level 2(b), didactic but clinically integrated activities; and Level 3, didactic, classroom or standalone teaching [10].

As students experience the curriculum, their feedback is very important and can be employed in improvement of design and development of next cohort. [11]

In our study 25% of the students perceived that Pharmacology is the most interesting and most relevant basic science subject for clinical studies and in Pharmacology theory hours of teaching is to be increased (19%). This finding is similar to the finding to a study done in Manipal College of Medical Sciences which has also showed that 34% of the students also replied that Pharmacology should be carried up to seven semester as Community Medicine [12].

In another study done in 2005 by Ravi Shankar et al also showed that students' attitude towards Pharmacology was positive. The teaching and learning of pharmacology can be enhanced and a closer incorporation with the clinical disciplines is essential [13].

Problem based learning should also be included in Pharmacology as in one study done by Karen Gregson at a Dental College has shown that PBL increases confidence. Educating the students about pharmacology through PBL is a viable and important teaching approach [14].

It becomes necessary that teachers and learners consciously find ways of integrating and incorporating teaching and learning into routine clinical practice. In

order to know whether medical teachers have been successful to present the vast amount of information to the students in a planned, organised and integrated manner, the feedback evaluation and comments of students was gathered using the questionnaire.

Among the teaching methods Chalk and Board methodology was found to be the best (53%) followed by LCD Slides (45.5% students) and Tansparencies/OHP (~1%) was the least preferred teaching method by the students (Figure-3). This finding is different from a study done at Kasturba Medical college, India which has shown that Mixed Aids (54.9%) is the best method of audiovisual aids to teach MBBS subjects like Pharmacology followed by power point presentation (20.9%) and Blackboard and OHP are (19.6% and 4.9%) respectively [15]. In another study it has shown that the best methods of teaching and learning methods are LCD slides (54.83%) followed by chalk and board methods (37%) [12].

A study done in UK in 2009 where students were asked to provide feedback on medical studies and they were found to be confident in providing feedback similar to our study [16].

The study had a few limitations regarding small sample size. Also non-inclusion of interns to provide their feedback as they could also contribute in highlighting the gaps encountered by them during their teaching sessions in a holistic manner. The feedback of faculties were not collected which could highlight their experiences about integrated teaching modules.

The redesigning of curriculum is a laborious, tedious, time consuming, and ongoing activity for which researchers have to keep in mind all the objectives, facilities and limitations from students and teachers point of view. This can only be achieved, by synchronisation of students and faculty that will endorse shift, from discipline-oriented to longitudinal patient centred curriculum. The implementation will offer students an opportunity to become true 'healer', by relating basic and clinical approach to comprehend and treat the involved subject. The steady-state homeostasis can thus be derived by sustained commitment, positive reinforcement, comprehensive criticism and thorough encouragement of programmers by an enlightened administration that is fully dedicated to systemic change.

Conclusion:

The opinion and feedback of students and faculty can be used as a basis for transformation from non-integrated to integrated curriculum. Although change was well accepted by students as well as the faculty. Overall the observations were alarming and may be taken up seriously by the policy makers. They can fetch modifications in course curriculum of universities in future.

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