

Knowledge and Perspectives of Undergraduate Medical Students Towards the Introduction of Electives in the Undergraduate Medical Curriculum: A Cross-sectional Study from a Medical College in India

Nitin Sinha*, Annie Singh**, Ishaan Singh**, Piyush Jain*

Abstract

Background: An Elective is an area or a stream in a speciality which can be chosen by an undergraduate student to work for a stipulated duration to learn something over and above to what is normally taught by that speciality in under graduation. Electives as a teaching module has been introduced for the first time in Indian undergraduate medical curriculum from the year 2019. This study was done among MBBS students before Electives were opted by the very first MBBS students batch. This study was done to ascertain their knowledge regarding Electives, their choice of Electives and reasons for choosing the Electives they wanted to pursue. Such a study on Electives has not been undertaken as Electives had been introduced for the first time in Indian undergraduate medical curriculum.

Methods: A pilot tested and self-designed questionnaire was administered to consenting undergraduate students studying in different phases in our Institute. Analysis was done using SPSS Software (version 16, IBM).

Results: Awareness regarding electives was less even in the batch that was supposed to pursue Electives. Knowledge regarding different guidelines-related to Electives was also lacking. Varied perceptions of students related to various aspects of Electives were noted.

Discussion: Electives is a new concept. Hence, appropriate knowledge regarding the same must be imparted to students so that they can choose their Electives wisely. Institutes also have to formulate Electives based on perception of students. Onus is also on the Institutes to allocate Electives in an appropriate manner.

Keywords: Electives, competency based undergraduate curriculum India, perceptions of undergraduate students on Electives, knowledge regarding electives.

Introduction

The term "Elective" translates to being an option, i.e., having a choice. In the context of medical education, the term "Elective" implies an area/stream in which a student himself/herself opts to work/undergo training for a defined period in a particular speciality. National Medical Commission (NMC), India is a body that frames curriculum for the undergraduate medical students of India. A new Competency Based Undergraduate Medical Curriculum has been launched by NMC from the year 2019. In this new curriculum, NMC has introduced Elective module for the first time in India. The purpose of Elective module is mentioned as "a learning experience created in the curriculum to provide an opportunity for the learner to explore, discover and experience areas or streams of interest¹."

As per the NMC guidelines, an Elective is an area or a stream that a speciality will offer which will help the students to learn and explore something new. Even

Superspeciality departments (which are not involved in undergraduate teaching) can offer Electives. The total duration for Electives is one month divided into two Blocks (Block 1 and Block 2) each having a duration of fifteen days. Students will have to choose from Electives offered by Pre- and Para-Clinical departments (Anatomy, Physiology, Biochemistry, Pathology, Microbiology, Pharmacology and Forensic Medicine and Toxicology) in Block 1 and from Clinical (Broad Speciality), Superspeciality departments and Community Clinics (rural/urban) in Block 2. Each student is supposed to do two Electives, one in each block. Presently, MBBS students move through four Phases while undergoing their training. Phase I (Pre-Clinical) starts with entry to the Medical College followed by Phase II (Phase II), Phase III (Part I) and finally Phase III (Part II). Electives are conducted at the end of Phase III (Part I) and before the beginning of Phase III (Part II). The entire list of Electives being offered by the Institute is provided to all the students well in advance. Every Elective needs to have specified learning objectives, well defined

*Professor, **MBBS Student (Phase III, Part I), Department of Medicine, Atal Bihari Vajpayee Institute of Medical Sciences, Baba Kharak Singh Marg, New Delhi - 110 001.

Corresponding Author: Dr Nitin Sinha, Professor, Department of Medicine, Atal Bihari Vajpayee Institute of Medical Sciences and Dr Ram Manohar Lohia Hospital, Baba Kharak Singh Marg, New Delhi - 110 001. Tel: 9818046274, E-mail: drnitinsinha26@yahoo.co.in.

plan of its execution, a logbook and an assessment at the end. Every Elective can have only a fixed number of students that can be trained in that Elective. This number is to be decided by the speciality offering that Elective. Students have to choose Electives from the list provided. The further method of allocating Electives to the students is to be decided by the Institute. Electives can also be chosen in an outside Institution¹.

In the United States of America, after the initial two-year course in pre and para clinical sciences, the final 2 years are divided into two parts, Required sequence blocks and Optional sequence blocks (synonymous to Elective). Required sequence blocks are those stipulated as necessary to be done by every student to meet the minimum expectations, while the optional sequence blocks allow students to self-elect².

Mihalyunk *et al* in their study conducted in University of British Columbia, found that many medical students view career choice decisions as a process to be undertaken in medical school. The free choice clerkship was reported not only as a positive, highly regarded learning experience, but also as a key feature of the educational process of decision-making, including clarifying decisions about both future education and career choices³.

Reed *et al* in their extensive review of medical education noted⁴:

"Exploring the complex, developmental nature of the specialty choice process is key to both understanding how specialty decisions are made and ultimately improving the decision-making process. Because this is an area that has not been researched widely, there is ample opportunity for researchers to fill this gap in our knowledge."

This study was undertaken before the Electives were allotted for the first time in our Institute. As a new module had been introduced and students of MBBS were naïve, we thought it was necessary to know about the awareness and knowledge among the MBBS students regarding the NMC guidelines on Electives. Also, it was prudent that the perceptions of students towards Electives was assessed and understood. The results obtained from this study would be helpful in refining the approach of Institutions towards imparting knowledge regarding Electives and designing Electives as per the perceptions of the students.

Methods

A questionnaire based cross-sectional study was conducted among undergraduate medical students between 1st and 10th October 2022 after obtaining the Institutional Ethical Committee Permission. There were three batches of MBBS students with 100 students in each batch at the time the

study was conducted. A self-designed, structured, pilot-tested questionnaire was administered to the consenting participants. The initial part of the questionnaire required the participant to fill demographic details and answer a question on the awareness regarding Electives. Only those who were aware regarding introduction of Electives in the curriculum were required to complete the further questionnaire. The first serial numbered question was regarding how the student became aware regarding Electives. The questions from serial number 2 to 6 assessed the knowledge among the students regarding the guidelines on Electives by NMC. The remaining nine questions (Question number 7 to 15) assessed the perceptions of the students regarding various aspects of Electives. The time allotted was 5 minutes. The data obtained from the questionnaire was recorded and analysed using IBM SPSS (Statistical package for Social Sciences) ver 16.0 (Chicago, USA) software.

Results

At the time this study was conducted, three batches of MBBS students were studying in our Institute. One batch each comprising of 100 students was in Phase III (Part I), Phase II and Phase I. Forty six, fifty and sixty students from Phase III (Part I), Phase II and Phase I, respectively consented to be a part of the study.

Awareness regarding Electives

Out of 46 consenting students of Phase III (Part I), 12 (26.08%) students had no idea regarding Electives being a part of the latest MBBS Curriculum. Among the 34 students who were aware, 15 got awareness from the Foundation Course conducted in the beginning of MBBS Part I, 14 got awareness from friends studying in other medical colleges, three got awareness from seniors and one got awareness from his batchmate. One student did not mention the source of awareness about Electives.

Out of the 50 consenting students in Phase II, only twelve (24%) were aware regarding Electives being a part of MBBS Curriculum. Among these 12, three came to know about Electives from their seniors, 2 each from the Foundation Course conducted in MBBS Phase I and friends from other Medical Colleges and five from 'Other' sources (Three students became aware from Faculty lectures, one from the Dean's address and one from the NMC website).

Among the sixty students who consented to be part of the study, only three (5%) students were aware regarding Electives being part of MBBS Curriculum. Two of these became aware about Electives from their seniors and one from YouTube.

In view of only a total of 15 students of MBBS Phase II and MBBS Phase I having awareness regarding Electives, the further results are presented cumulatively for both the Phases.

Knowledge regarding Electives

Among Phase III (Part I) students, correct knowledge regarding the timing of Electives in the curriculum was known to only 14 (41.17%) students. Twenty students answered wrongly regarding the timing of Electives. Out of these twenty, fourteen students had knowledge that Electives are scheduled to be conducted at the end of MBBS Phase III (Part II) and three students each had knowledge that Electives are scheduled to be conducted at the end of MBBS Phase II and MBBS Phase I, respectively. Out of total 15 Phase II and Phase I students, six (40%) had correct knowledge regarding timing of Electives. Out of remaining nine students, five had knowledge that Electives are to be conducted at the end of MBBS Phase II and two each had knowledge that Electives are to be conducted at end of Phase I and during Internship, respectively.

Correct response about the departments that are supposed to conduct Electives in Block 1 was marked by 11 (32.35%) Phase III (Part I) students and Five (33.33%) Phase II and Phase I students. Correct response to the question on the departments that are supposed to conduct Electives in Block 2 was marked by 12 (35.29%) Phase II (Part I) students and eight (53.33%) Phase II and Phase I students.

With regards to duration of Electives in Block 1, 18 (52.94%) students of Phase II (Part I) and six (40%) students of Phase

II and Phase I marked the correct answer of 4 weeks. Correct response of 4 weeks duration of Electives in Block 2 was marked by 14 (41.17%) Phase III (Part I) students and five (33.33%) Phase II and Phase I students.

Perceptions

Regarding perceptions of students towards the purpose of introducing Electives in the curriculum, the results are displayed in Table I (Students could select more than response to this question).

Responses to agreement upon introduction of Electives in the MBBS Curriculum are depicted in Fig. 1. It is evident that maximum students of any Phase agreed of Electives being part of MBBS Curriculum.

Among the Phase III (Part I) students, on being asked to choose the best method that should be adopted by our Institute to select a student for an Elective being offered, 10 students (47.61%) chose 'interview by the Teacher In charge for an Elective' as the best method for selection. 13 (38.23%) students, however, did not answer this question (Table II). Out of 15, six students (46.15%) of MBBS Phase II and MBBS Phase I also chose the same option. Two students (13.33%) did not respond to the question.

Twenty-five MBBS Phase III (Part I) students (73.52%) responded to the question regarding indicating their preferred departments for Electives in Block 1. Twelve out of these 25 students (48%) had not decided upon any preferences at the time of filling the questionnaire. Only two students filled the names of departments that are

Table I: Perceptions of students regarding purpose of introduction of Electives in the MBBS Curriculum.

Perceptions	MBBS Phase III (Part I) (Total = 34)	MBBS Phase II and MBBS Phase I (Total = 15)
Help in choosing a career stream later	12 (35.29)	5 (33.33)
Gain in depth knowledge on something not normally taught in detail in routine teaching	22 (64.70)	7 (46.66)
Understand concepts of research	7 (20.58)	7 (46.66)
Provide an edge to students planning to go to foreign universities after MBBS	6 (17.64)	2 (13.33)
Develop self-directed learning skills	8 (23.52)	4 (26.66)
Any other perception	Nil	Nil

Values in cells are expressed as Number Observed(%).

Table II: Best method that should be adopted by Institute to select students for an Elective.

Method	MBBS phase III (Part I) (Total = 21)	MBBS phase II and MBBS phase I (Total = 13)
Based on cumulative marks of all Internal Assessments and University Examinations held prior to choosing an Elective	5 (23.80)	4 (30.76)
Interview by Teacher In charge of an Elective	10 (47.61)	6 (46.15)
An MCQ based examination	6 (28.57)	3 (23.07)
Any Other Method Proposed	Nil	Nil

Values in cells are express as Number Observed (%)

supposed to offer Electives in Block 1. Rest all wrote names of departments that are not supposed to offer Electives in Block 1. However, maximum students chose the Department of Medicine (20%) as their first preference for Electives in Block 1. Three (20%) of the fifteen MBBS Phase II and Phase I students had not decided upon the departments they would choose for Electives in Block 1. Seven (46.66%) did not respond to the question. Three students (20%) wrote the correct departments that are supposed to offer Electives in Block 1. In response to the question on preferred departments for Electives in Block 2, 24 students of MBBS Phase III (Part I) (70.58%) wrote their preferences. Fourteen (56%) had not decided upon their preferences at the time of filling the questionnaire. Out of the ten remaining students, maximum (two students each) gave first preference to Medicine and Orthopaedics. Surgery received maximum number of second preferences (three students). Three students out of 15 (20%) of MBBS Phase II and Phase I gave their preferences. One student wrote names of departments that are not supposed to offer Electives in Block 2. The remaining two students chose Neurology and Medicine, respectively as their first preference for Electives in Block 2. Four (26.66%) had not decided regarding their preferences. Remaining eight did not answer the question.

In response to the question asking for reasons (students could select multiple responses) for choosing a subject as their first preference in an Elective, the results are displayed in Table III.

Table III: Reasons for choosing a subject as First Preference for an Elective.

Reasons	MBBS Phase III (Part I) (Total = 13)	MBBS Phase II and Phase I (Total = 5)
Interest in that subject	9 (69.23)	2 (40)
Want to pursue career in that subject later on	4 (30.76)	1 (20)
Elective in this subject will give me an edge over others while obtaining admission in foreign universities after the MBBS is completed	0	3 (60)
You are already doing a research project in that subject	1 (7.69)	1 (20)
Your research project is approved already and will be done in Electives	0	
Your best friend is likely to select that project	2 (15.38)	
Any Other reason apart from above	2 (15.38) —Money	

Values in cells are written as Number Observed (%)

Table IV: Reasons for contemplating choosing Elective in another Institution.

Reasons	MBBS phase III (Part I) (Total=14)	MBBS phase II and phase I (Total=9)
Subject in which Elective is planned to be taken is better in another institution	8 (57.14)	4 (44.44)
Department where Elective is planned to be taken is not available in parent institute	3 (21.42)	3 (33.33)
Family member/Relative/Family Friend is present in the outside institute	3 (21.42)	1 (11.11)
The outside institute is in your hometown	Nil	1 (11.11)
Any Other Reason apart from these	Nil	Nil

Values in cells are written as Number Observed (%)

Fourteen students (41.17%) of MBBS Phase III (Part I) contemplated opting Elective in an outside institution. Fifteen students (44.11%), however, were not willing for an Elective in another institution. Five students did not respond to the question. Among those willing, the main reason for thinking to choose an Elective in another institution was that the subject in which Elective is planned to be chosen is better in another Institute. Nine students (60%) of MBBS Phase II and Phase I contemplated to opt for Electives in another institution. Four students were not contemplating choosing Elective in another institution. Two students did not answer the question. Table IV highlights the various reasons for contemplating choosing Electives in another Institution.

Discussion

The results clearly highlight that awareness and knowledge about Electives was seriously lacking among the students.

Among the MBBS Phase III (Part I) students, who were supposed to start their Electives within the next three months of participating in this study, 26.08% were surprisingly unaware about the electives. The awareness among the students in other phases was even poorer. Also, the source of awareness varied. Knowledge regarding the timing of Electives in the curriculum, Electives being conducted in two blocks, duration of each block and subjects/departments offering Electives in each block was also lacking among most of the students in all the three

batches. Awareness and knowledge was more in Phase III (Part I) students as compared to Phase II and Phase I students. This is possibly due to the reason that Phase III (Part I) students were supposed to start their Electives within next three months. Also, Phase III (Part I) students had spent more time in the college and in the clinical postings. Hence, their chances of becoming aware and knowledgeable about the Electives were more. Overall less awareness and knowledge clearly highlights that steps need to be taken to make the students aware and knowledgeable regarding the Electives. This can be done by taking separate session on Electives in the Foundation Course (at present there is no separate session on Electives and only passing references are made by Faculty) where Institute can not only introduce the concept, purpose and intricate details regarding Electives to the students but also let them know the Electives that are routinely offered by the Institute. As Electives are to be conducted in Pre and Para Clinical subjects also, it is imperative that student is made aware of Electives well before Phase I starts (in Foundation Course). Further sessions can be taken in the beginning of Phase II and middle of Phase III (Part I), respectively.

Maximum students studying in any Phase had welcomed the introduction of Electives. Most common reason perceived by students to introduce Electives in the curriculum was "gaining in depth knowledge on something not normally taught in detail". They perceived that Elective in a particular department will help them to learn something extra in a particular field, learn nuances of research, give an edge in getting selection in foreign universities and develop self-learning skills. These perceptions are quite in sync with the objectives of Electives as stated by NMC.

The responses of students were divided when it came to choosing a process for allocation of Electives. The perceptions in this regard have to be seen in light of feasibility of conducting a particular method. Also, an Institute/NMC has to devise such a method to allocate Electives so that the students get a chance "to Elect" rather than being "Forced to Opt" an Elective. This can be a combination of methods as shown in Table II.

Department of Medicine and Surgery were the most preferred departments for pursuing Electives. Pre and Para

Clinical departments were chosen by a select few. This reflects that students should be made aware of the specialised areas and research in Pre- and Para-Clinical departments so that their interest can develop in these departments. Clinical departments offer more interest probably because they involve lot of patient interaction.

As NMC guidelines allow a student to opt for elective in another Institution, many students were willing to opt Elective in another Institution. The main reason chosen was that the subject they wished to pursue Elective is better in another institution. The reason for this perception was not asked in the questionnaire but it can be reasoned that students of different medical institutions interact among each other and it is here that students get to know about various specialities in other Institutions. Parents or relatives of some students might be in other Institutions creating a perception of better specialities in another Institution. Another reason chosen by some students on wishing to opt Elective in an outside Institution was non-availability of an Elective in our institute. This was surprising because at the time this study was conducted, list of Electives was yet to be disclosed to the students.

Despite best of our efforts, we could not find any similar study on Electives. Hence, it was not possible to compare our results with the results from other Institutes.

Electives have been introduced by NMC with a positive ideation and onus is now on the Institutes to offer Electives to the students in an appropriate manner and in sync with the perceptions of the students.

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