

Foundation Course conducted under the new CBME curriculum of Indian Medical Council: Analysis of students' perspective in South Indian Medical Institutions

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Abstract

The Indian Medical Council introduced the Competency based medical education (CBME) in the academic year 2019-20. One of the many new changes in the undergraduate medical curriculum, was the Foundation course (FC) of one month duration, introduced at the beginning of the medical course. The purpose of FC was to prepare the entrant medical students to medical education and profession. Program evaluation is essential to analyse the utility and also for continuous remodelling of any educational program, so that the primary objectives are achieved. The study hypothesis was that the students would find the foundation course vital and beneficial. This was a mixed method study including quantitative and qualitative methods. Following the conduct of FC, we collected feedback from diverse group of first professional medical students (n= 719) of academic year 2019-20 by administering pre-validated standardized questionnaires using google forms.

Majority of students agreed or strongly agreed that the FC experience was educative, interesting, and an enabling experience. Qualitative responses revealed, that the students were pleased to be introduced to the most salient aspects of medical education and profession. The most significant suggestions for improvement were reduction of duration of FC, conducting FC after completing the entire admission process, reduce redundancy in topics and to deliver it more interactively. Our study is unique to have evaluated perception on FC from a large number of students across various government, private and deemed medical institutions in South India. Insights from this study will help to guide effective implementation of FC.

Key words: Foundation course, medical education, Qualitative, Students' perspective

Introduction

The Competency based medical education (CBME) was introduced by National Medical Council in the academic year 2019-20. Numerous changes were made to the curriculum as per GMER 2019 (Graduate Medical Education Regulations). One among this was the Foundation course (FC) of one month duration introduced in the beginning of the medical course. The purpose of FC was to prepare the new entrant to the medical college to effectively study medicine^[1]. A standard protocol for the conduct of the FC across medical colleges of India was provided by the Medical Council of India. The Structure of the

FC program for students included orientation, skills module, field visit to Community health centre, professional development including ethics, sports and extracurricular activities and enhancement of language/ computer skills^[1].

Program analysis and evaluation is important for development of educational activities and helps in improving the program^[2]. The aim of our study was to evaluate the conduct of FC, achievement of its purpose, overview of FC as perceived by the students of first professional year belonging to first batch of CBME curriculum from various medical colleges who attended the foundation course. The study also aimed

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to analyse the feedback to understand the strengths and weaknesses of the FC and formulate suggestions for improvement.

Subjects and Methods:

Following the conduct of FC, we planned to evaluate the same across medical colleges of South India. This was a cross sectional study using both quantitative and qualitative indicators. Institutional ethical clearance was obtained and the data required for evaluation of FC was obtained by administering pre validated standardized questionnaires to students of first professional year of CBME batch of various medical colleges in South India. Only students who had attended FC for more than two weeks were eligible to be included for the study. Detailed information regarding the study was provided to the eligible participants. Participation in this research was voluntary. Informed consent was obtained from study participants who consented to participate.

Study instruments

A standardized student questionnaire was used to collect information from first professional medical students of academic year 2019-20. The questionnaire included close-ended questions to collect basic student data, questions using the rating scale i.e., Likert scale and open-ended questions. The information was collected by online tool using Google

forms. For simplicity, the questions using the Likert scale were grouped under three groups - the conduct, achievement of purpose, and overview on FC.

Statistical analysis:

Quantitative analysis - The quantitative data were recorded and analysed using SPSS software version 16. The results were expressed in frequency and percentages. The questions with Likert scale had 5 options ranging from strongly disagree, to strongly agree. They were scored as 1= Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly agree. Median and interquartile range were calculated for all these queries where Likert score was used.

Qualitative analysis:

Qualitative analysis was done on the open-ended questions. The descriptive responses received for the open-ended questions were read and reread by the authors to analyse the content and were coded.

Objectives:

1. To evaluate the process, perception and learning on the Foundation course according to students.
2. To analyse the feedback to understand the strengths and weaknesses of the FC and formulate recommendation for improvement.

Results

We received responses from 719 students from across

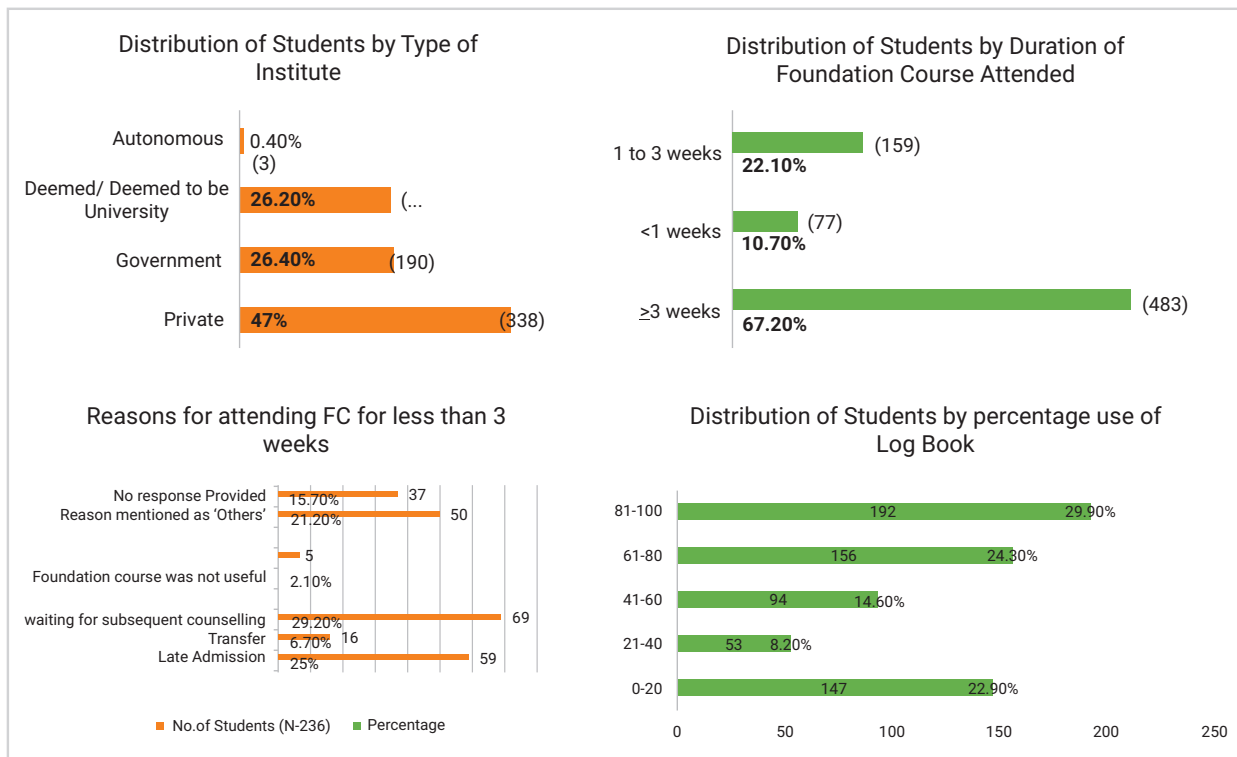


Figure 1: Distribution of students based on the type of Institution, duration of attendance and usage of logbooks during Foundation Course.

the medical colleges of South India. Of these 47% (338) students were from private medical colleges, 26.4% (190) were from government colleges, 26.4% (188) were from deemed or deemed to be universities and 0.4% (3) were from autonomous institutions. When the students were asked if it was better if the topics of foundation course were taught weekly along with 1 year MBBS subjects instead of being taught in the beginning, 45% (289) students agreed to the suggestion but 55% (353) of them disagreed to it.

A variety of contextual information related to their college, foundation course attendance, log book etc were collected and are depicted in Figure 1. We found that 67.2% (483) students attended foundation course for more than 3 weeks, 22.1% (159) students attended the course between 1 to 3 weeks and 10.7%

(77) students attended for less than a week. The students who attended the course for less than a week were not included in the study as per our study protocol. So, further analysis was conducted for 642 students. The reasons for attending the course for less than 3 weeks are depicted in figure 1. FC log book was provided as per NMC (National Medical Council) norms only to 69% (443) students. The distribution of students by percent use of log book is depicted in Figure 1.

Questions with Rating scale

Table 1 provides the median and interquartile range of the responses given by students. On analysing the student responses, it can be noted that in the queries the median response is either 4 or 5 corresponding to agree and strongly agree.

Table 1: Perception of students on the conduct, achievement of purpose and overview on the Foundation course

Sl no	Student Questionnaire	Strongly Agreed % (n)	Agreed % (n)	Neutral % (n)	Disagreed % (n)	Strongly Disagreed % (n)	Median (IQR)
The Conduct Of FC							
1	The entire foundation course was conducted seriously and earnestly	41.7 (268)	42.1 (270)	13.4 (86)	2.6 (17)	0.2 (01)	4 (4,5)
2	The time table and schedule of different activities were informed well in advance	47.0 (302)	38.0 (244)	10.6 (68)	3.6 (23)	0.8 (05)	4 (4,5)
3	The number of classes held each day were ideal	38.3 (246)	40.7 (261)	17.0 (109)	3.7 (24)	0.3 (02)	4 (4,5)
4	There was an ideal ratio of large group teaching and small group discussion/activities	38.4 (250)	36.1 (232)	18.2 (117)	5.3 (34)	1.4 (09)	4 (4,5)
The Achievement Of Purpose Of FC							
5	The foundation course oriented the MBBS students to all aspects of the medical college environment course and medical profession.	47.0 (302)	39.7 (255)	9.9 (64)	2.6 (17)	0.6 (4)	4 (4,5)
6	I believe that the foundation course provided adequate opportunity for peer and faculty interactions and an overall sensitization to the various learning methodologies.	50.3 (323)	33.8 (217)	12.6 (81)	2.3 (15)	0.9 (6)	4 (4,5)
7	I agree that the foundation course equipped the students with certain basic and important skills required for patient care and enhanced their communication, language, computer and learning skills.	39.0 (251)	36.0 (231)	14.6 (94)	5.0 (32)	5.3 (34)	4 (4,5)

Students Overview On FC							
8	The foundation course was interesting and useful.	39.2 (254)	40.8 (262)	15.0 (96)	3.3 (21)	1.4 (9)	4 (4,5)
9	I believe that the foundation course introduced me to the basic and essential values of professionalism and ethics.	50.8 (326)	36.6 (235)	10.3 (66)	1.9 (12)	0.5 (3)	5(4,5)
10	Sensitization to National Health goals and policies/ health Care systems/ community health etc was very essential and helped me to gain an overall perspective of my role in future health care.	42.9 (275)	41.9 (269)	13.1 (84)	1.7 (11)	0.5 (3)	4 (4,5)
11	I believe that learning the basic skills module which included skills in Basic Life Support, First Aid, Universal precautions and biomedical waste was important.	64.2 (412)	28.5 (183)	6.2 (40)	0.8 (5)	0.3 (2)	5(4,5)
12	The White Coat ceremony was an occasion which made us proud and inculcated a sense of responsibility.	70.1 (450)	19.2 (123)	7.6 (49)	1.4 (9)	1.7 (11)	5(4,5)
13	I liked the opportunity to communicate with patients and patient attendants during the foundation course.	39.9 (256)	29.0 (186)	16.7 (107)	7.2 (46)	7.3 (47)	4(3,5)
14	The sports and extracurricular activities conducted helped me to understand the importance of work-life balance.	34.6 (222)	29.9 (192)	20.4 (131)	7.6 (49)	7.5 (48)	4(3,5)
15	I am using the learning styles and strategies taught in the foundation course	23.7 (152)	39.7 (255)	26.8 (172)	5.6 (36)	4.2 (27)	4(3,4)
16	The opportunities to interact with patients and patient attendants helped me to initiate myself in the art of communication	25.4 (163)	37.4 (240)	22.4 (144)	8.9 (57)	5.9 (38)	4(3,5)

Qualitative analysis

Analysis of the qualitative data showed the following results. The reflections on their learning from the FC were descriptive and based on the repetition of responses, we grouped their responses and coded them. They are depicted in Table 2.

Table 2: Student's learning from the Foundation course

SI No	Summary of Student comments	Codes
1	Good exposure to the course and got to know what to expect during the course Got to know the faculty and peers and we were able to interact with them Enjoyed the interactive way of teaching and also the skit, dramas, plays enacted by us as part of learning	Experience during FC and orientation
2	Helped to develop skills to provide basic life support in emergencies. Learnt that these basic lifesaving skills are essential before starting to deal with patients Understanding of biomedical waste management improved after the foundation course.	Skills module

3	Helped to understand the concept of healthcare team and the various national programs being rolled out for larger public good. Liked the field visits, came to know how the system works and were very happy to talk to patients.	Field visit
4	Helped to understand the importance and relevance of ethics, empathy and compassion in medical profession. The need to understand the rights of patients and the duties and responsibility of medical professionals was enlightening Provided a clear idea about professionalism and its importance in providing healthcare to patient.	Professional development and ethics
5	Helpful in improving communication skills with regard to doctor patient interactions. Developing better communications skills helped in improving confidence Language skills improved. Helped in enhancing computer skills.	Communication and computer skills

On analysis of the descriptive responses, the foremost observation from more than three-fourths of the respondents was that most of the participants liked one or many aspects of FC. They felt that FC gave them opportunity to adjust to the new environment and acclimatize with the changes. The students appreciated the interactive sessions of FC i.e, group discussions, debates and panel discussions. They liked the topics on ethics and communication skills. They were glad to have been taught how to do cardio-pulmonary resuscitation (CPR). Many have commented that they liked FC as it helped them

to orient to several essential aspects of medical profession. The informal methods of teaching and opportunities for interaction among peers were consistently appreciated. They particularly enjoyed the role plays, sports and other activities like yoga. Hospital visit, field visit to the primary and urban health centre and interacting with patients were deemed to have provided them the much-needed context and orientation. A few students appreciated the preparedness and teaching skills of the faculty. Some of the comments by the students are included verbatim along with the codes in Table 3.

Table 3: Excerpts of student's comments verbatim with codes

Sl no	Excerpts	Codes assigned to excerpts of student responses
1	"That one month upfront allowed us to acclimatize to the people around us our peers our teachers. Instead of directly beginning with the regular classes that one month gave us enough time to settle in and find the people we are most comfortable with"	Orientation
2	"I enjoyed the experience of visiting the hospital and interacting with the patients. It was very exciting and scary at the same time since I was unaware of how to begin an interaction with a patient, but thanks to the teachers in charge it was a positive learning experience."	Communication Professionalism
3	"I loved the efforts from the various faculty, they gave very insightful, fundamental and sort of basic knowledge but in an interesting and relatable way, especially Emergency Medicine (basic life support and first aid), Community Medicine (history and government schemes), General Medicine (professionalism, code of ethics, bedside ethics) and Microbiology (waste management and hand hygiene)"	Skills Professionalism Ethics
4	"The need to understand the basic communication skills was the most important thing I learnt. The classes on ethics and professional etiquette were perhaps most relevant amongst all the topics in this present day and to be taught about it beforehand prepares us better."	Communication Professionalism Ethics
6	The most memorable and happening moment was the white coat ceremony. It instilled a sense of pride and belonging	Professionalism

7	"It eased the tension of medical course and we were able to get to know each other and our profession in more detail. I liked the way the doctors and lecturers of different departments explained how they chose what they are now."	Orientation
8	I enjoyed the skill learning such as first aid, CPR and basic life skills the most. I liked the various games, quiz sessions, medical dumb charades, talent hunts and workshops that were conducted. I enjoyed and felt relaxed to participate in sports and extracurricular activities.	Skills Teaching strategy Sports and extracurricular activities

Student's suggestion for the improvement of the foundation course were compiled and grouped under appropriate themes as depicted in Table 4.

Table 4: Student's suggestions for the improvement of the foundation course

1	Overview of FC A great majority of the students expressed that they do not have any suggestions to make as they believed that the foundation course was well conceived and conducted.
2	Duration and timing of the course Duration of the course as well as duration of individual sessions needs to be reduced. FC needs to be conducted after all the student admissions are completed. FC was too lengthy and tightly scheduled. A reduction in the number of hours of FC per day is warranted. FC could be conducted along with the regular classes rather than one month right at the beginning.
3	Content A few expressed the need to improve the content without specifying on the nature of the content to be included. A lot of repetition of topics especially of ethics and professionalism. Computer classes duration may be reduced as this was part of teaching at school Language classes should be better planned and teachers with knowledge of both local and English language should be involved with the teaching.
4	Planning Timetable should be circulated to students beforehand. There was lack of planning and confusion in batches due to new students joining throughout the FC. Better planning and execution would make the course more beneficial.
5	Process Regarding teaching-learning methods; lectures should be avoided, less of power-point presentation, more use of videos, debates, quizzes etc., More opportunity to be given for exposure to hospital environment, field visit, first aid skills training and interaction with patients. More emphasis on learning techniques and stress management.
6	Adherence to schedule Sports and extracurricular activities need to be given due importance during implementation of foundation course. FC was not conducted according to NMC guidelines and many important aspects were skipped in few institutions. Conducted for less than 3 weeks or for 15 days only in few institutions.
7	Resources and infrastructure More faculty needs to be involved in conducting the foundation course. Better infrastructure is required to conduct interactive teaching.
8	Documentation Feedback should be kept confidential There should be no logbooks

Discussion

The Foundation course was conceptualised by NMC, (erstwhile MCI) after many years of research and consultation. The competencies to be addressed and guidelines for preparing time table for the course was provided by NMC [1].

The NMC proposed the FC with the following purpose:

- a. Orienting the students to all aspects of the medical college environment.
- b. Equipping them with certain basic, but important, skills required for patient care and enhancing their communication, language, computer and learning skills.
- c. Providing opportunity for peer and faculty interactions and an overall sensitisation to the various learning methodologies [1].

At the beginning of the academic year 2019-20 all medical colleges across India implemented the foundation course. The programme was conducted under the supervision of a co-ordinator appointed by the Dean of the respective college in coordination with the heads of the preclinical departments.

Program evaluation helps to know if the pre-set objectives are met and it also helps to determine how it can be modified or improved in the future [9]. In our study on the evaluation of the FC, students belonging to private (47%), government (26.4%), deemed or deemed to be university (26.2%) and autonomous (0.4%) institutions participated. Our study participants also varied in terms of the yearly intake of their colleges. The class strength was less than 100 in 6.8% students and more than 200 in 21.4% but a maximum of 71.8% had a class strength between 101-200. The large class strength might have been the reason for conduct of more lecture sessions than small group interactive teaching as expressed by the students in our study.

In our study 67.2% (483) students attended foundation course for more than 3 weeks, the most common reason for missing out on some sessions was mostly related to delay in admissions. Similarly, in the study by Dixit et al only 66% students attended FC and the rest could not attend because of transfer to other college or due to the ongoing multiple counselling sessions coinciding with the FC [4]. In the study by Dabbas et al only 51.6% attended the FC and the reason for not attending was unavailable [5]. Thus for the foundation course to be effective it is pertinent that the admissions must be completed before the FC. It may be noted that many students in our study opined that there was confusion during FC due to continuous entry of new students. Only 2.2% of our

students have commented that the reason for not attending was because they felt FC was not useful but the rest were not able to attend because of logistical reasons.

We used the rating scale to know the perception of students on the conduct, achievement of purpose and overview on FC.

The conduct of FC

In our study we found that FC was conducted seriously and earnestly in majority of the institutions with 41.7% and 42.1% students strongly agreed and agreed respectively. In the study by Sobti et al 63% of students gave an overall positive comment about the course [6]. Similarly 22.3% and 41.9% students gave excellent and very good response respectively for the foundation course in the study by Khilnani AK et al [7].

The achievement of purpose of FC

Regarding the first objective in our study, the respondents agreed (study 47% and 39.7% of students strongly agreed and agreed respectively) that the FC oriented them to all aspects of the medical college environment and medical profession. In concordance to our study, in the study by Pandey et al orientation module was rated excellent and good by 94.7% of students [8].

Second and third objectives were related to acquiring certain basic skills and opportunities for interaction that are necessary for health care professionals before they start patient care. In our study majority of the respondents perceived that these objectives were attained (Table 1). They agreed that FC provided them adequate opportunity for peer and faculty interactions. In the study by Khilnani et al nearly 75% of students felt that the FC's objectives were largely met [7].

The overview of FC

An overwhelming majority of our respondents agreed that the foundation course was interesting and useful (Table 1). Similarly, Dabas et al reported positive feedback with an average score of 3.9 out of 5 for the overall feedback on the course [5]. FC should be able to teach the medical student about the code of conduct and its importance and significance in life and career [1]. More than four-fifths of our respondents agreed that professionalism and ethics was essential and relevant. Similar results were reported by Dixit et al and Vyas et al [4,9].

The white coat is a symbol of medical profession. White coat ceremony is an inherent part of FC. It conveys to the new entrants that they are bound by same professional commitments which bind all physicians [1]. Our respondents strongly agreed that

white coat ceremony was an occasion which made them proud and inculcated a sense of responsibility. In our study regarding community model, we found that 42.9% and 41.9% strongly agreed and agreed respectively to it. Similar to our study where we noted a median score of 4, mean scores of knowledge and importance of the community module were 3.42 and 3.99 respectively in the study by Dixit et al.^[4] In contrast, Sobti et al reported that only 58% of students felt that community orientation module was relevant^[6].

Regarding the skills module the students endorsed the training in basic skills, where results showed an average median score of 5 wherein 64.2% and 28.5% students strongly agreed and agreed respectively regarding importance of all aspects of skill module. Similarly, Vyas et al noted an average mean value of 4.3 on skill module^[9]. Sobti et al noted similar findings wherein 73% gave a positive response to the skill module^[6]. In the study by Khilnani et al 40.5% felt that training in Basic life support (BLS) and CPR training were the most important^[7].

Queries about the perceptions about the communication; extracurricular activities and sports revealed an average median score of 4 for both. In the study by Sobti et al., sports and extracurricular activities was the second most important module in which 69% gave a positive feedback^[6]. In the study by Vyas et al module on communication and language skills was less favourably perceived than the other modules having a mean score of 4.0 ± 0.9 and 3.9 ± 1.0 respectively^[9]. Sobti et al also reported language and computer skills as least appreciated modules with positive feedback from only 58% and 52% of participants^[6].

In our study median of 4 was obtained when we asked if the students were able to use the learning styles and strategies taught in the foundation course. Among the objectives of FC, learning including self-directed learning, time management, stress management, use of information technology are also included. These are also very pertinent for a medical student and essential. Before the new curriculum was adopted effective communication, professionalism, ethics and its importance in developing students' personalities were part of the hidden curriculum leaving a lot for chance^[8,10,11]. Professionalism should be a part of medical curriculum as it is very integral to medical profession^[12,13].

We were able to gather more information through the open-ended questions. This exercise was their first attempt at writing reflections. Reflections help in developing affective domain^[14]. The following is the summary of the descriptive responses.

Learning from the Foundation course perceived to be useful for medical education

Students appreciated that they got essential orientation, great overview of the course and profession and what they could expect in the forthcoming years of their medical education. Similar positive responses were reported by other studies which analysed the student responses and feedback at their respective institutes^[5,8,9]. Our respondents felt that basic skills that they were exposed to during FC was essential before they started dealing with patients. They were also appreciative of the field visits wherein they could observe the patient care at the ground level. The sessions on professionalism, ethics, communication were also felt by many to be important.

Aspects liked by the students about the Foundation course

All the modules were appreciated but some modules were liked more than the others. Many have commented that they liked the interactive nature of the FC, the interaction with patients, peers and staff in a non-threatening environment. Basic skills that they learnt was also very well appreciated. Hence, during the conduct of FC the above methods and sessions may be continued and emphasised further.

Student's suggestion for the improvement of the foundation course were noted as below:

Many students commented about the timing and duration of the FC which they felt was too long. The most common suggestion was to reduce it to 15 days and also to conduct the FC after all the admissions were completed. This is also reflected in the study by Pandey et al^[6]. Many participants have commented that the planning of the conduct of FC should be improved. In some institutions the timetable and schedule appear to have not reached the students beforehand. Many also commented on the overlap of topics especially of ethics and professionalism.

Numerous responses related to teaching learning methodology suggested the need to conduct all FC sessions in a more interactive manner by including experiential learning and reducing lectures and PowerPoint presentations. Active learning, wherein meaningful learning activities are introduced will definitely keep the course interesting^[15].

Lessons learnt and suggestions for improvement of the conduct of FC

We gathered responses from 719 students and evaluated responses from 642 students. As they were from different institutes across numerous Government, private and deemed institutions we feel

that we have got comprehensive results. Hence, we would like to make a few suggestions as listed below :-

- To start the FC only after admissions of all the students are completed.
- The duration of the FC can be reduced and a part of the FC sessions could be conducted online or along with the regular first professional year classes.
- A variety of teaching learning methods must be used to make it interactive and interesting.
- Redundancy amongst the FC topics must be minimised to keep it interesting.
- FC conducted by the colleges need to be monitored closely so that all the various modules are carried in principle according to NMC norms.
- Local language classes must be conducted only for students not knowing the language and the teachers should be well versed in both local and English language.
- Computer skill enhancement classes should be imparted only to those who need guidance and may not be made compulsory.

Conclusion

The FC was well received by the students. They felt that they were introduced to the most important aspects of medical education and profession. Students found FC to be educative, interesting, enjoyable and an enabling experience. The concepts were numerous and taught in a very short span of time. Hence majority of them opined that only the most important concepts must be taught by reducing the duration using active learning methods whereas some concepts requiring deeper understanding may be conducted as a longitudinal module. The admissions need to be streamlined and completed before commencement of FC for its uniform and effective implementation.

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