

Undergraduate Medical Students' Experience with Foundation Course at a Public Medical College in India

The study aimed to explore the perception and knowledge-gain of undergraduate medical students during the Medical Council of India-mandated one month foundation course in August, 2019. A total of 129 consenting students who underwent the foundation course were enrolled and their feedback collected using an email-based structured questionnaire. A majority (>60%) had positive attitudes towards various aspects of the course, with good scores obtained in the post-test by the majority of the students. The information reported will assist in the planning of future foundation course programs.

Keywords: *Attitudes Ethics Communication Module (AETCOM), Medical Council of India (MCI), Training.*

Medical Council of India (MCI) envisages an Indian medical graduate (IMG) to have both clinical skills and also right attitudes, professionalism, and ethics [1], which were included as an Attitude, ethics and communication (AETCOM) module [2]. Competency-based medical education (CBME) was proposed to revamp the existing medical teaching to replace it with a more uniform and objective prototype [3].

A foundation course of one-month duration has been introduced throughout India from August, 2019 as a compulsory module at the beginning of the MBBS course to sensitize students to information, lifestyle and practical skills required to sail through the training [4]. This study aimed to record the reactions and learning of students who undertook the foundation course.

Data were collected as an online Google form administered in the English language and disseminated *via* an online link in an email to the students. All undergraduate students who joined our institution, a public medical college in Northern India, were administered the survey before completion of the foundation course in the fourth week of August, 2019.

Permission for the study was obtained from the institutional ethics committee. Consent was obtained before sending the link for the online form. The information was collected in an anonymized form. A provision for the hard copy of the form was available for students who were not well-conversant with the online usage. Faculty-volunteers assisted students who needed language-support for filling the form.

The semi-qualitative questionnaire used consisted of four sections *viz.*, Demographic information; Clinical

medicine knowledge and skills; Medical ethics including professionalism (student's experience and understanding of foundation course, its relevance, competency in medicine, role of a doctor in the community and perception about attitude, ethics, and communication in medical curriculum); and Beyond curriculum (extracurricular activities and interests of students with their perceptions about the need for sports, technology and recreation, and their experiences with peers, seniors and faculty). Clinical medicine section evaluated knowledge-based responses pertaining to skills module and orientation to clinical medicine, which was discussed during the foundation course (post-test). Pretest for this content was not taken separately, as it was considered that factual knowledge on these concepts would not be available to the students. The questions in this section were related to the immunization schedule, first-aid, waste management, universal precautions and basic life support. The responses were converted to a score and scored from 0 to 1. Participants with a correct response to questions were given a score of 1, a partially correct response received 0.5, and an incorrect response received zero.

Data were recorded on a Google excel sheet and analyzed using SPSS version 23. A five-point Likert scale was used to report the overall experience of the foundation course.

Out of a total of 250 students enrolled, only 129 (51.6%) participated, with mean (SD) age 18.2 (1.1) year (range 17-23). Reasons for non-participation among the rest were not available. The majority of respondents (56%) were residents of Delhi, and most were conversant both in English (97.7%) and Hindi (93.8%).

The overall feedback on the foundation course was positive (average score of 3.9 out of 5) on the Likert scale. **Table I** details the students' perceptions of the foundation course. The positive experiences with foundation course included interactive sessions and simulation-based learning, team-building activities with peers, seniors and teachers, college campus tours, the inclusion of cultural activities and yoga, and visits to hospital and community outreach center. Three students did not feel the need for a foundation course, and one regretted joining MBBS. The unpleasant experiences highlighted by few included long college hours, long duration of the foundation course, parental separation anxiety, lesser exposure to the clinical side, poorer ice-breaking activities, lack of cleanliness in college campus and hostel, and the requirement for better physical activities and sports. The majority (94%) identified lack of time as a major constraint to pursue hobbies.

Table I Perceptions of Undergraduate Medical Students After Completing a One-month Foundation Course (N=129)

<i>Component of training</i>	<i>*No. (%)</i>
<i>Overall course</i>	
Necessary for the right attitude	119 (92)
Provided orientation of knowledge and skills required in MBBS	115 (89)
Helped to identify roles of IMG	95 (73.6)
Identified research as important for IMG	119 (92)
Understood need and role of CBME	81 (63)
Found course boring and lengthy	20 (25.8)
<i>AETCOM</i>	
Empathy, attitude, and communication important for IMG	105 (81.4)
Role of non-verbal communication in medicine	52 (40.3)

**Positive response; CBME: competency-based medical education; IMG: Indian medical graduate; AETCOM: Attitudes, ethics and communication module.*

The mean knowledge scores under the skill module are shown in **Table II**. The highest scores were seen in the clinical skill areas (first-aid and safe injection practices, >85%).

A foundation program was initiated in 2004-05 in United Kingdom for newly joined postgraduate students [5], and evaluation of the impact on doctors in training found that foundation course improved the perceived confidence and competence; though, the survey could not reliably assess the quality of care that was provided to patients [5]. Such information for foundation course during undergraduate medical courses are lacking in the published literature.

Studies have shown that learning during the medical curriculum depends upon students' gender, race and ethnicity [5-7]. The perceptions about the medical school environment also change with the progress of the curriculum [6]. A survey on about 4000 medical students from United States and Canada revealed that perception scores for learning environments had declined during clinical exposures. A systematic review analyzed 28 medical schools with 4664 students for the medical school learning environment survey (MSLES) scores and student characteristics [7]. They found that demographic characteristics across different schools and medical school environment accounted for 2.2% and 15.6% variation in MSLES scores, respectively [7]. Therefore, understanding of students' perceptions about learning and the environment could facilitate overall course delivery and learning.

Table II Clinical Medical Knowledge and Skills of Undergraduate Medical Students After a One-month Foundation Course (N=129)

<i>Question</i>	<i>Score (%)</i>
AYUSH components	116 (89.9)
Safe injection practices	110 (85.3)
First aid	110 (85.2)
National immunization program	108 (83.7)
E-learning platforms	103 (79.8)
Hand washing	102 (79.1)
Biomedical waste management	102 (79.1)
Universal precautions	89 (68.9)
International classification of diseases	87 (67.4)
Healthy lifestyle	73 (56.6)
Basic life support	72 (55.8)

AYUSH: Ayurved, Unani, Siddha and Homeopathy.

Medical informatics is the science and art of processing medical information [8]. Computer-assisted learning and problem-solving learning are powerful tools that can improve lifelong learning of medical students [9]. A fair number of students in the present study were aware of e-learning and its use in the medical field, suggesting that this technology can be used during the curriculum for an improved learning experience, and address the issues of the time- and faculty-shortages.

The present study could not quantify the impact of the foundation course for improvement in knowledge as a pre-test questionnaire was not administered. The change in behavior and improvement in patient-care resulting from the course would need to be studied over the long-term by other researchers. Despite a large sample, this was a single-center study, and the results may not be generalizable to other settings, as the course-content or delivery methods may be different at other centers. However, we have highlighted the key aspects of qualitative experiences related to the foundation course, which may guide curriculum-planners for formulating future programs.

To conclude, the foundation course was reported as a pleasant and beneficial experience by undergraduate students. An improved understanding of their aspirations and concerns will aid in the development of a better curriculum and training module.

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planning the study, participated in data collection, and statistical analysis; DM: assisted in planning, outcome assessment, manuscript finalization and data analysis. All authors approved the final manuscript.

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Audience Response System Technology for Pediatric Postgraduate Training

We report our experience of using Audience Response System among 21 pediatric postgraduate residents in pediatrics as a mode of teaching. Apart from significant improvement in test scores, three-fourth of the participants felt it was an interesting way to learn actively and was better than the traditional audio-visual presentation during lectures.

Traditional methods of postgraduate residents teaching program include seminars, didactic lectures, journal club, mortality meet, and clinical case conferences. Most of them have a drawback of passive learning. With the advancement in technology, there is a need to develop new teaching methods that involve active participation of students. Audience response system (ARS) enables learners to answer multiple-choice questions anonymously during the lecture. Result of responses by learners is displayed instantly in form of a histogram that allows the lecturer to assess learners’ understanding of the subject, and also promotes the learners’ engagement with the study material, thereby increasing comprehension and retention of material.

The study participants included 21 second-and third-year pediatric residents who consented to participate in this study. The study was conducted in a tertiary-care teaching hospital of Northern India. A WhatsApp group of participating residents was created prior to the intervention. ARS was administered using website www.polltab.com and the link for the questions were posted in the WhatsApp group.

A 10-minute pretest in the form of video-based multiple-choice questions was administered to establish baseline knowledge of movement disorders in children. It consisted of 10 questions with 10 marks each with a maximum of 100 Marks. Subsequently, a powerpoint presentation on basic principles and tips for recognizing movement disorders were delivered, followed by a case-based discussion with videos depicting each movement.

At the end of each video, ARS was used to assess residents ability to identify the type of movement disorders depicted in the video. The response of residents was displayed simultaneously when they voted, and the lecturer discussed the points concerning that video. At the end of the lecture, all residents completed a post-test evaluation to reassess their knowledge of the topic. In addition, they also completed a feedback form to assess their opinion regarding the usefulness of the ARS.