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## Comparative Analysis of Perception of MBBS Students on Foundation Course: A Questionnaire Based Study

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**How to cite this article:** Nabanita Barua, Pramit Ghosh, Ranjita Santra et. al. Comparative Analysis of Perception of MBBS Students on Foundation Course: A Questionnaire Based Study. Indian Journal of Public Health Research and Development / Vol. 17 No. 1, January-March 2026.

### Abstract

**Introduction:** The Foundation Course was designed to provide a sound foundation for learning in the MBBS curriculum and later in students' professional careers. Although the document on CBME was prepared by doyens in the medical field after years of toil, it is only natural for any program to face difficulties during the implementation phase. Faculty members are facing new, technology-enhanced teaching methods at the institutional level, with varied lectures on professionalism, ethics, communication, skill acquisition, language development, spirituality, and miscellaneous brainstorming lectures to induce confidence in managing problems in medical practice.

**Objective:** Primary Objectives: To evaluate students' perception of the foundation course and to evaluate the perception of faculty members about the foundation course.

Secondary objective: To assess the gap between the foundation course program schedule and its implementation.

**Materials and Methods:** Study design: This was a single-center, cross-sectional, observational study conducted as an educational design study.

**Study Population:** The entry batches of 2022 and 2023 were the intended population (group 1). Responses from the entry batches of 2021 and 2020 were also taken for comparison (group 2).

**Sampling technique:** Total enumeration.

**Method of data collection:** Data was collected via a self-administered questionnaire. Feedback from all six modules was taken using a modified Likert scale. Feedback from teachers was recorded using a different Google Form that had modified Likert scoring and scope for individual responses.

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**Submission date:** Apr 16, 2025

**Revision date:** Aug 6, 2025

**Published date:** January 6, 2026

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**Duration:** 2 months.

**Results:** There was good consensus among students about all modules of the foundation course in the early response group (group 1), with positive response rates ranging from 75% to 96%. The responses were similar in the late response group, except for the professional development and ethics module and the language and computer module. The difference was statistically significant (p-values < 0.016 and 0.007, all < 0.05). Feedback from teachers was also positive, with scope for modifications and suggestions for individual modules.

**Conclusion:** We conclude that in our study, there is good consensus among students and faculty members regarding the perception and continuation of the foundation course. The statistics show that 80% responded positively. The positive response rate from group 2 (2020 and 2021) was lower, as there were initial implementation hurdles in a new medical college. With time, these hurdles were overcome, and the responses improved.

**Key words:** Perception of foundation course, Teachers' review on foundation course, Foundation course and CBME

## Introduction

Educational technology has become modernized, and medical knowledge has been growing exponentially. What has not kept pace with these changes is the medical curriculum, especially in India until 1997, when the Government of India, under the direction of the Medical Council of India (MCI), which is now National Medical Commission (NMC) brought out a gazette notification on "Regulations on Graduate Medical Education," which is considered an important milestone in the history of medical education in India. The next major overhaul in medical education was the introduction of Competency-Based Medical Education (CBME) in 2019. [1]

Since the inception of the NMC, importance has been given to the mandatory implementation of the foundation course. Initially, it was emphasized that the first two months should be dedicated to the Foundation Course. During the pandemic, the time frame changed to one or two weeks; the recent 2023 guideline recommends it should be for an initial week, with the rest of the course to be blended with regular classes throughout the academic year. [2]

Orientation programs are designed and implemented by different academic institutions globally for students transitioning from high school to an undergraduate course, with the objective of familiarizing the students with the campus environment and course curriculum, thereby helping them in their adaptation. The NMC has introduced Competency-Based Medical Education (CBME) to produce Indian Medical Graduates (IMG) who can function efficiently as basic doctors and first-contact

physicians. CBME emphasizes learner-centered approaches, integrated learning, and continuous assessment to ensure IMGs are practice-ready. Traditional methods, on the other hand, often rely on lecture-based teaching, rote memorization, and time-bound assessments, which may not adequately prepare students for the complexities of clinical practice.

One of the important components of CBME is the introduction of a one-month Foundation Course for all new entrants to the MBBS Curriculum before they start their formal training. Students enter a medical college from different walks of life. They start their undergraduate journey with little knowledge about their course and its future. They encounter many hurdles in the form of background, cultural, and socioeconomic differences; language proficiency; adjustments to the new campus environment; and challenges of the new curriculum. The course has been created to sensitize the fresh medical student with the required knowledge and skills that will assist them in acclimatizing to the new professional environment. While institutions are expected to follow the general guidelines, institutional-level changes can be made depending on the content and requirements. [3]

In the 2019 Graduate Medical Education Regulation (GMER), the Foundation Course was envisaged to be a one-month-long program (later modified to 1-2 weeks) with continued support throughout the year for students to acquire language, ethics, attitude, communication, and computer-assisted skills. The Foundation Course is designed specifically to address most of these issues so that students can have a smooth metamorphosis from

a highly protected school environment to the challenging professional environment of a medical college. During this month, they imbibe and inculcate the basics of medicine in terms of its history, the role of an IMG in society, community orientation, ethical principles, national health needs and policies, universal precautions, immunization, the doctor-patient relationship, stress and time management, the importance of a balanced life, skills in information technology and language, communication skills, etc.,<sup>[4]</sup> and upon its completion, they will embark on their journey of life-long medical education with confidence and competence. An orientation program is considered valuable in lowering the anxiety of a new workplace and can benefit both faculty and new entrants. Resource faculty from various medical disciplines are incorporated. The modules of the Foundation Course are: 1) Orientation module, 2) Skills module, 3) Community Orientation module, 4) Professional Development and Ethics module, 5) Language and Computer Skills, and 6) Sports and Extracurricular Activities.<sup>[5-8]</sup>

Faculty members are facing new, technology-enhanced teaching methods at the institutional level, with varied lectures on professionalism, ethics, communication, skill acquisition, language development, spirituality, and miscellaneous brainstorming lectures to induce confidence in managing problems in medical practice.

## Aims and Objectives

### Aim:

To explore the perception of the foundation course from the perspectives of students and faculty.

### Primary Objectives:

To evaluate students' perception of the foundation course.

To evaluate the perception of faculty members about the foundation course.

### Secondary objective:

To assess the gap between the foundation course program schedule and its implementation.

## Materials and Methods

**Study Population:** All students from four batches of MBBS (each batch had 100 students; the average number of respondents in each batch was 80).

**Sample size calculation:** The study aimed to find out the perception of the foundation course among all batches of undergraduate students, so a total enumeration technique was applied; no student was exempted.

**Type of study:** Single-center, cross-sectional, observational study.

**Sampling technique:** Total enumeration.

**Method of data collection:** Data was collected via a self-administered questionnaire.

**Duration:** 2 months.

**Selection criteria:**

**Inclusion criteria:** MBBS students of the 2020, 2021, 2022, and 2023 entry batches.

**Exclusion criteria:** Unwilling or absent students.

The foundation course had different modules: orientation, skills module, field visit to a community health center, professional development including ethics, language/computer skills, and sports and extracurricular activities. The number of hours allotted in each batch differed due to the pandemic and subsequently due to changes in guidelines from the NMC and the state university. During the pandemic, the time frame changed to one or two weeks; the recent 2023 guideline recommends it should be for an initial week with the rest of the course to be blended. All students received the course as per the guideline of that year. All activities were conducted by faculty members of the institution except for language, computer, and sports and extracurricular activities, for which instructors from other institutions were hired.

**Validation of questionnaire:** A structured questionnaire was designed, validated (in-house, during a presentation at the nodal center, and by one expert from the regional center), and used to assess the performance of students. The validity of the questionnaire was checked by qualitative research experts from other institutes. Test-retest reliability was checked in an initial group of 15 students. Cronbach's alpha was used to check reliability during the initial validation (score was 0.76). The perception of students was assessed through a feedback form via Google Forms. Two types of feedback were taken

(first regarding the topics and second regarding the effect of the module).

Content and objectives were assessed as a closed-ended response of yes or no. Organization and interaction were assessed with a modified Likert scale. Feedback on the teaching and learning sessions was also taken at the end of the foundation course, and responses were recorded.

Feedback form scores: 4, 3, 2, and 1

4 - excellent

3 - satisfactory

2 - good

1 - needs more understanding.

For ease of analysis, we considered scores of 3 and 4 as a better response and analyzed them accordingly.

We wanted to analyze the responses of first-year students in two subsequent batches—2022 (after one whole year of completion) and 2023 (after completion of one month of the foundation course in September)—and compare their responses with two previous batches (2021 and 2020 entry batches). Our institute is a newly established medical college, and the 2020 batch was the first admission batch. For analysis, we grouped the 2022 and 2023 batches as group 1 (early or immediate feedback). The 2021 and 2020 batches were grouped as group 2 (late feedback).

Feedback from teachers was taken with a different questionnaire where qualitative and quantitative input was taken. This questionnaire had one open-ended question where they could provide their viewpoint or suggestion to improve the existing module.

**Inclusion criteria:** All faculty members and senior residents of the institution were included in the study. All faculty members had completed a basic teacher training course and orientation to the foundation course. All classes were conducted after discussion with the medical education unit of the institution. Senior residents assisted in the teaching program with faculty.

**Exclusion criteria:** Unwilling doctors.

A concept map was prepared in consultation with other departments, like Pharmacology and General Surgery. This process was completed in five weeks (from the last week of July to August).

**Data Analysis and presentation plan:** Statistical analysis was done using SPSS software. Descriptive statistics like mean, standard deviation, frequencies, and percentages were used to present the study. An ANOVA test was used to compare means between groups. Categorical variables were analyzed using the Chi-square test. A probability (p) value was calculated to test statistical significance at the 5% level.

## Observation & Results

A total of 202 responses were collected from four batches. Data collection was started in September (three batches: 2020 to 2022) and completed in October (2023). The highest response rate was seen in the 2022 batch, which had completed one year with all modules and extracurricular activities spread over the whole year. The 2023 batch responded least, as modules had just finished, and they needed a lot of explanation on how to proceed with their responses. These batches (Group 1) could accurately remember the details of the class schedule but agreed that they needed more practical exposure to understand each module, such as doctor-patient interaction, the responsibility of doctors, and the application of computer classes.

Feedback from previous batches (group 2) was recorded. We wanted to review their feedback to know if they had a different interpretation after being exposed to clinical postings, where they understood the implications of the modules in everyday practice. They had a lot of recall bias but mentioned their depth of understanding and the implications were more profound compared to when they were in the first phase. These responses were not documented but were revealed more through interpersonal interactions or one-on-one interviews.

Each batch was given a description for their response, and the response portal was open for two weeks; no further responses were accepted after this period.

As evident from Table 1, most of the responses were positive in group 1. The two groups were sex-matched. The age difference between the two groups was significant; the first group had a younger population. Responses from group 2 were lower for the professional development and ethics module and the language and computer classes module (p-values were significant) (Fig 1).

#### Input from faculty

We had 37 responses within one week: professors = 6 (16.21%), associate professors = 9 (24.32%), and assistant professors = 22 (59.5%). Twenty-two faculty members had participated actively in teaching the foundation course; five had not. There were nine faculty members from phase 1, nine from phase 2, and 19 from phase 3 (parts 1 and 2). All faculty members had basic teacher training; seven had additional training (six CISP and one with both CISP and ACME). We have divided this group into senior faculty (professors and associate professors) and

junior-tier faculty (assistant professors) for analysis (Fig 2).

The response from faculty members is summarized in Table 2. Module 5, computer and language classes, was taken by teachers from other institutes without any involvement of college faculty, so it was not included for rating.

A detailed review from faculty members is summarized in Table 3. Apart from all the above, five faculty members refused to participate, stating verbally that they thought the course was useless; they did not write this on the proforma. The reasons they gave were that this course had no impact, students in their early days did not understand the implications, and students did not attend classes. These views were revealed during more informal discussions; as these were not documented, these responses were not analyzed. Among the documented responses, more faculty members responded positively.

**Table 1: Response of all 4 batches**

Topic 1	Group 1 Batch 2022/23 (N1=112)	Percentage of positive response of group 1	Group 2 Batch 21/20 (N2=90)	Significance P value
F:M	67:45		61:29	.304
Age	20.58±1.66		21.87 ± 1.19	<0.001
State (others : WB)	97:15		80:10	.672
Module 1 (orientation)				
Content	104:8	92.8%	83:7	.99
Objective	90:22	80.35%	76:14	.46
Organization (better response )	102: 10	91.1%	81: 9	0.812
Interaction ( Better response	91:21	81.25%	78:12	.34
Module 2 (skill)				
Content	105:7	93.75%	81:9	.433
Objective	91:21	81.25%	75:15	.71
Organization (better response )	98: 14	87.5%	73: 17	.24
Interaction	89:23	79.5%	76:14	.46
Module 3 (community orientation)				
content	108:4	96.4%	86:4	.99
Objective	96:16	85.7%	77:13	.99
Organization	100:12	89.3%	76:14	.39

Continue.....

Interaction	97:15	86.6%	76:14	.69
Module 4: Professional development and ethics				
Content	104:8	92.8%	73:17	.016
Objective	92:20	80.35%	68:22	.29
Organization	97:15	86.6%	72:18	.25
Interaction	93:19	83%	73:17	.85
Module 5 (Language and computer)				
Activity	92:20	80.35%	54:36	.0008
Duration	93:19	83%	55:35	.0007
Interaction	84:28	75%	54:36	.032
Module 6 (sports )				
Content	91:21	81.2%	67:23	0.3
Objective	88:24	78.5%	69:21	.86
Organization (better response )	81:31	72.3%	60:30	.44
Interaction (better response)	81:31	72.3%	65:25	.99
Overall satisfaction	99:13	88.3%	73:17	.17

Table 2: Rating of modules according to faculties

Rating of modules (better response 3, 4)	Designation	Active participation
	Senior: Junior	-Yes: No
Modules 1	13/15 (86.67%): 18/22 (81.82%)	19/22 (86.4%): 12/15 (80%)
Module 2	12/15 (80%): 16/22 (72.7%)	17/22 (77.27%): 11/15 (73.33%)
Module 3	12/15 (80%): 17/22 (77.27%)	20/22 (90.9%): 9/15 (60%)
Module 4	12/15 (80%): 13/22 (59.1%)	16/22 (72.7%): 9/15 (60%)
Module 6	9/15 (60%): 16/22 (72.7%)	14/22 (63.6%): 11/15 (73.33%)

Table 3: Teachers review summarized

Type of response	Number of responses
1. No improvement	3
2. Foundation course should be stopped	2
3. No specific suggestion	14
4. Good but needs modification	
a. Stable time table	3
b. More time for language	1
c. More time for yoga	2
d. More interactive session	1

Continue.....

e. More classes on art of communication	2
f. Proper alignment	1
g. responsibility of doctors should be clarified	1
h. course should be taught after students have understood basic science	1
i. more well-defined modules	1
5. Good but needs inclusion/ suggestion	
a. More faculties/ departments	2
b. Mentorship program	1
c. Gate keeping training (for prevention of suicide)	1
d. Assessment post course	1

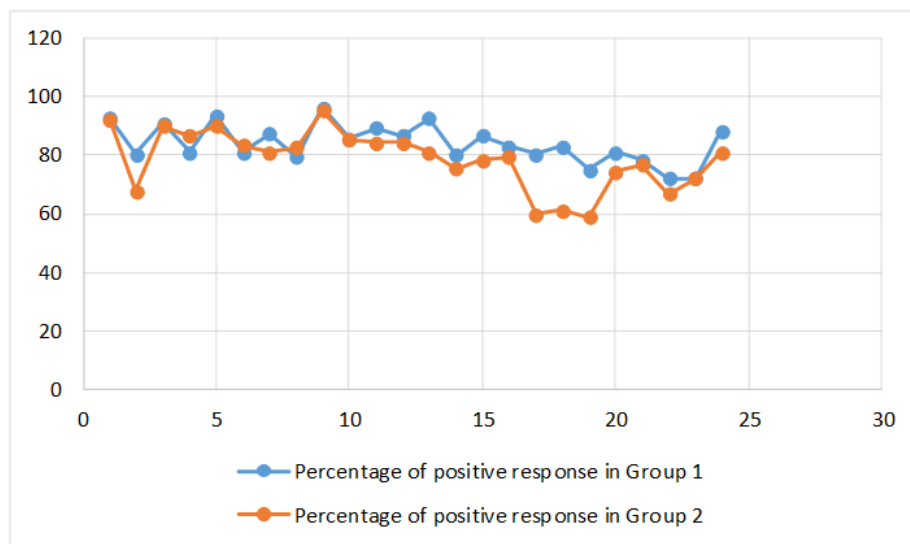


Fig 1: Percentage of positive response between two groups

Fig 2: Distribution of faculties as per designation

**Discussion**

A one-month foundation course was introduced throughout India in August 2019 as a compulsory module at the beginning of the MBBS course to sensitize students to the information, lifestyle, and practical skills required to sail through their training. The aim of our study was to assess the effect of the foundation course among undergraduate students and teachers. We also tried to assess if the perception or implication of different modules changes with time in students; therefore, we included four batches, categorizing them as an “immediate feedback” group and a “late feedback” group.

As is evident from our study, most students gave positive feedback regarding the implementation of

the foundation course (the rate of positive feedback ranged from 80% to 96%). There was a difference in module 4, as students in group 2 did not remember the class schedule for ethics and professionalism correctly. The 2020 entry batch was the first batch of our institute, so there were many hurdles in implementation, and faculty members were also new to various aspects. Consequently, that cohort felt that things could have been a little better for them to get better oriented, especially regarding topics with a more theoretical aspect. The class schedule for language and computer skills also changed repeatedly, which was problematic for the external instructors who were new to the place. These issues were all revealed during informal discussions. A few of them also had recall bias. According to group 2, there was a gap in the implementation of the foundation course (class schedule, topic content,

etc.), but not in group 1 (where all classes were on time, with proper duration and content).

Other than the difference in response to these two modules, all other responses were positive.

The study by Suman in 2007 on the introduction of a Foundation Course for MBBS students at the entry level is similar to our study. They also concluded that a foundation course for medical students at the entry level is a way to facilitate their familiarization with the campus. It also broadens their horizon on the clinical application of knowledge and improves their behavioral patterns and initial experiences with teachers and patients. [9] A similar experience was noted in a study by Srinath in 2014. [10]

The study by Modi et al. in 2015 also concluded that professionalism is an integral part of the medical profession and that the implementation of a foundation course in the early days smoothens the transition to professional life; therefore, it is a crucial part of the medical curriculum. [11]

Mahsood and Khan, in 2019, also carried out a six-week foundation module. They concluded that the foundation course would help in the better understanding and application of basic science knowledge. As it is intricately modifiable by student feedback, it will be helpful in improving the quality of the curriculum. [12]

Ruprai et al. in 2020 found that the foundation course was a wonderful ice-breaking session among students. It also helps to break the initial barrier of teacher-student interaction. The students got familiarized with each other as well as with the institutional campus. [13] It also reduces various psychological barriers to learning.

Velusami D et al. also found that students showed good consensus, with a high percentage (>75%) in all modules of the foundation course. [14]

In our study, after analyzing teachers' feedback, we found that most documented responses mention it is a well-thought-out course for initial ice-breaking and better interaction. A few faculty members suggested inclusions, such as involving more faculty members or departments or creating more interactive classes in specific areas. The positive response in module 6 was lower (60%) than in other modules,

the reason being that many of these extracurricular activities were monitored by teachers from non-medical institutes, so faculty in our college were not all aware of their nature.

This is similar to the study by Velusami D. [14] They reported that faculty members suggested that Yoga and Computer sessions required further improved session planning, and they emphasized incorporating more interactive sessions in small groups. In our study, the response varied as we included four batches, and the pandemic and post-pandemic protocols were different. Although many faculty members had mixed responses, most projected a positive outcome.

## Conclusion

Our study concluded that there is good consensus among students and faculty members regarding the implementation of the foundation course. The statistics show an 80:20 ratio in favor of continuing the course. Faculty members are also motivated to implement it, as it works as an ice-breaker for students in a new environment.

There are a few limitations to this study that also guide the way for future studies. Student responses could have been open-ended with the scope for providing suggestions. As we have taken four batches, the late-response group had significant recall bias. This could be eliminated by conducting a multicenter study with the same entry year. Still, most of the responses were positive. There is also a component of bias, as students may have been hesitant to provide negative responses because the interviewer was a faculty member, out of respect for the student-teacher relationship. Although responses were recorded anonymously, identifying the batch year within a single institution is a significant identifier that may have compromised full anonymity.

Participation from students was limited. The batch that completed an entire year, with year-long time to experience and complete all modules properly, responded the most.

The response from faculty members was open-ended as it was not obligatory, and many skipped providing any suggestions. The responses could have been collected after a focused group discussion, incorporating more qualitative study techniques.

Our study concludes that the foundation course is well-perceived among students and faculty. In the beginning phase at our center, there was a gap in implementation due to various hurdles in a new setup, but with time, these hurdles were overcome, and the content and intent of the foundation course were clearly and effectively communicated.

**Ethical committee clearance:**

Date: 12.06.2021

Reference number: IEC/PGMCH/2021/008  
Committee name: Institutional Ethics Committee, Deben Mahata Government Medical College & Hospital, Purulia

**Source of funding:** None

**Conflict of interest statements:** None

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