

# Perception of Students About Usefulness of Foundation Course in Medical Curriculum

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## Abstract

**Background:** Foundation Course (FC) was introduced in the MBBS curriculum since 2019 with an aim to prepare a learner to study medicine effectively. The present study was undertaken to study the perception of students regarding its usefulness in the curriculum.

**Material and Methods:** The study was conducted at a private medical college in Lucknow using a mixed method approach. The study population consisted of 1<sup>st</sup> phase MBBS students of 2021 & 2022 batch. Data was collected using a pre-validated questionnaire and FGDs.

**Results:** The study included a total of 263 students. With regard to the attainment of various objectives of the course, the mean score and SD ranged from 7.59 + 1.65 for skills in IT to 9.39 + 1.23 for basic life support. Mean scores for all objectives except that for skills in IT and academic ambience, were found to be above 8.0. Mean scores for first aid and basic life support were above 9.0.

In the analysis of qualitative data, 47.3% attributed exposure to campus environment and 41.1% attributed understanding of the profession to smooth acclimatization to medical college environment. 12.2% students suggested to increase the duration of the course and 20.9% suggested to decrease the duration. For improvement in the course, 35.7% recommended increasing hospital/ field visit and 40.7% recommended more of practical classes. Overall, the students perceived that the course attained all the objectives to a large extent.

**Conclusion:** The students perceived the foundation course as a useful inclusion in their curriculum.

**Keywords:** Foundation course; Student's perception; NMC; Acclimatization; Capacity building

## Introduction

National Medical Commission (NMC) of India introduced Foundation Course (FC) of one month duration in the undergraduate medical curriculum with a goal to prepare a learner to study Medicine effectively [1]. Since the inception of the programme in 2019, four undergraduate batches (MBBS batches) have been exposed to the course and the faculty have been sensitised. A number of studies have also been undertaken to study the perception of the students about the course. Many considered it a welcome step by NMC, India to acclimatize the new MBBS students to the new professional environment [2,3]. Study carried out by Vyas, Joshi and Seth in a medical college in Ahmedabad, Gujrat revealed that the FC helped and prepared students to cope up with challenges of the MBBS course. However, in their study assessment of

sports and extracurricular activities, as envisaged in FC, was not done [4]. In another study conducted by Shah, Kulkarni, Arode and Singh in a Govt Medical College in Maharashtra, the positive feedback of students ranged from 50-100% in various aspects of FC modules. Twenty five percent students suggested that the duration of the foundation course should be reduced to two instead of four weeks [5]. Another study conducted by Goyal et al at Rajmata Shrimati Devendra Kumari Singhdeo GMC Ambikapur, Chhattisgarh, India, from April 2021 to July 2021 found the course as a welcome change that helped students in early acclimatization, peer-communication and assimilation [6].

In view of the varying responses, the present study was undertaken to find out the perception of medical students about the usefulness of Foundation Course in MBBS curriculum.

## Material and Methods

**Study design:** A mixed method approach was used in the study. The feedback taken at the end of FC on a questionnaire consisted of close-ended and open-ended questions. Focus group discussion was conducted to generate qualitative data.

**Study Population:** All 1<sup>st</sup> Phase MBBS students constituted the Reference population. The study population consisted of 1<sup>st</sup> phase MBBS students of 2021 & 2022 batch admitted to a private Medical College in Lucknow, Uttar Pradesh, India. The college is located in the urban area of Lucknow and has been admitting students In MBBS Course since 2016. The yearly intake in MBBS course is 150 students.

**Study period:** The study was conducted from Aug 2023 to Dec 2023.

### Study Participants:

**Inclusion criteria-** All students who took admission in the year 2021 & 2022 and were present on the day feedback was taken.

**Exclusion criteria-** Any student absent on the day feedback was taken.

**Sample size -** Sample size was calculated using the following formula:

$$N = Z^2 pq/d^2$$

Where N is the sample size, Z is the z-value, p is the proportion of population, q is (1 -p), and d is the margin of error.

For the purpose of the study p was taken as 0.5 (based on the study of Shah, Kulkarni, Arode and Singh in a Govt Medical College in Maharashtra) and margin of the error was kept at 5% [3]. Using the finite population correction, the sample size was worked out as 255 or more at a confidence level of 95%.

**Data collection:** Data collected on the questionnaire at the end of FC of MBBS Batch 2021 & Batch 2022 and available with the institution was retrieved for the purpose of the study.

**The Questionnaire –** The questionnaire was designed by the Principal Investigator being the Medical Education Unit (MEU) Coordinator, himself. The questionnaire was pre-validated by pilot testing. The questionnaire consisted of four questions. The first question included all the nineteen objectives enumerated in the NMC Module on Foundation Course<sup>1</sup> and students were required to record their responses regarding achievement of objectives on a scale of 10 where 1 was the worst and 10 was the best response. Questions 2, 3 & 4 included their views about what they liked or what they did not like and what was their suggestion for the improvement of the course. Reliability of the questionnaire was tested using Cronbach's alpha ( $r = 0.9132$ ). Time required by the interviewer to fill a questionnaire completely ranged from 15 min to 20 min.

**Focus Group Discussion (FGD) –** To further strengthen the findings of the study, two FGDs – one for each batch – were also conducted. Eight students from each batch were randomly chosen for participating

in the FGD. Informed consent was obtained from each of them before the start of FGD. The entire FGD was audio recorded with participants’ permission. A dedicated note-taker took pertinent notes for follow up as they emerged during the discussion. Sociograms that showed adequate participation of all participants, were made for the FGDs.

Statistical analysis – Numerical data were entered in Microsoft Excel. To ensure the quality, the data were entered concurrently and 10% of the questionnaire were periodically cross checked. Descriptive analysis was done using statistical software STATA SE 18.0. Mean scores and standard deviation were calculated for student responses on questionnaire meant to assess their perception regarding attainment of the objective. Student’s responses to open type questions were entered in MS Word. Code words were found in the transcript and then themes were generated. Results were presented in tabular form with samples of student’s responses. For FGD, transcription and audio recordings were reviewed for accuracy prior to content analysis. Excerpts from student’s responses were included verbatim. Data triangulation was done manually.

Ethical Approval - Ethical approval for the study was accorded by the Institutional Ethics Committee vide their letter no. TSMHC&H/IEC/July-23/94(43) dt 20 July 2023. For confidentiality, audio-recorded tapes and notebooks were kept confidential and the contents were accessible only to the authorized members of the study team.

**Results**

The present study included a total of 263 students – 121 from MBBS Batch 2021 and 142 from MBBS Batch 2022. The remaining students i.e. 29 of batch 2021 and 08 of batch 2022, were absent on the day the feedback was taken. The feedbacks were taken on the same questionnaire immediately at the end of the Foundation Course. The findings with regard to attainment of the objectives are summarized in Table -1 and Figure -1.

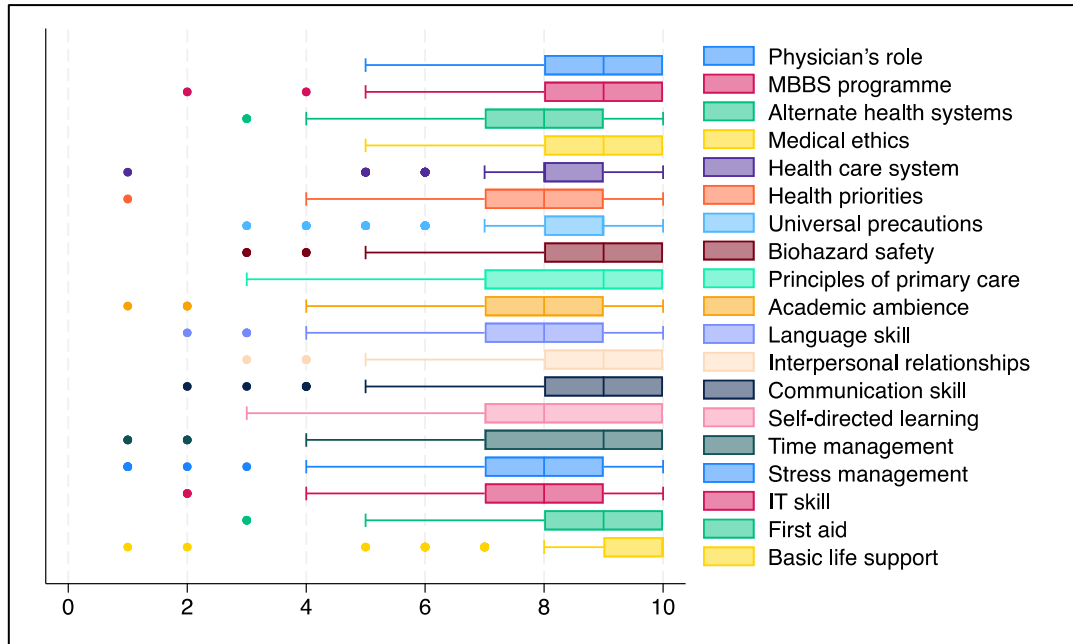
**TABLE - 1**  
**Mean Score and Standard Deviation of Student’s Perception Regarding Attainment of Objectives of Foundation Course**

Ser No.	Objectives	Batches		Total Mean Score (SD) (N= 263)	Wilcoxon rank-sum test ‘z’ statistic; p - value
		Batch 2021 Mean Score (SD) (N= 121)	Batch 2022 Mean Score (SD) (N= 142)		
1	Physician’s role in society	8.75 (1.21)	8.65 (1.23)	8.70 (1.22)	0.651; 0.5151
2	MBBS programme	8.69 (1.39)	8.75 (1.22)	8.72 (1.30)	-0.114; 0.9089
3	Alternate health systems	8.26 (1.53)	7.91 (1.45)	8.07 (1.50)	2.186; 0.0289
4	Medical ethics, attitudes & professionalism	8.74 (1.25)	8.58 (1.27)	8.65 (1.26)	0.975; 0.3295
5	Health care system	8.52 (1.27)	8.24 (1.44)	8.37 (1.37)	1.627; 0.1038
6	Health priorities	8.25 (1.42)	8.04 (1.6)	8.13 (1.52)	0.967; 0.3336

7	Universal precautions	8.31 (1.48)	8.34 (1.41)	8.32 (1.44)	0.101; 0.9194
8	Biohazard safety	8.83 (1.37)	8.58 (1.39)	8.70 (1.38)	1.694; 0.0902
9	Principles of primary care	8.65 (1.29)	8.23 (1.39)	8.43 (1.36)	2.558; 0.0105
10	Academic ambience	7.99 (1.55)	7.99 (1.64)	7.99 (1.59)	-0.194; 0.8460
11	Skills in Language	8.24 (1.73)	7.84 (1.67)	8.02 (1.70)	2.189; 0.0286
12	Skills in Interpersonal relationships	8.38 (1.47)	8.42 (1.44)	8.40 (1.45)	-0.195; 0.8456
13	Skills in Communication	8.44 (1.39)	8.3 (1.53)	8.36 (1.47)	0.660; 0.5091
14	Self-directed learning	8.22 (1.54)	8.27 (1.43)	8.25 (1.48)	-0.097; 0.9231
15	Skills in time management	8.21 (1.87)	8.29 (1.6)	8.25 (1.73)	0.118; 0.9058
16	Skills in stress management	7.93 (2.11)	8.07 (1.57)	8.01 (1.84)	0.256; 0.7978
17	Skills in information technology	7.82 (1.54)	7.4 (1.72)	7.59 (1.65)	1.856; 0.0634
18	First-aid	9.08 (1.29)	8.96 (1.27)	9.02 (1.28)	1.358; 0.1744
19	Basic life support	9.76 (0.63)	9.07 (1.5)	9.39 (1.23)	5.029; 0.0000

FIGURE – 1

Box Plot of Mean Score of Student’s Perception Regarding Attainment of Objectives of Foundation Course



As can be seen from Table -1, the mean score and SD with regard to attainment of various objectives ranged from 7.59 + 1.65 for skills in IT to 9.39 + 1.23 for basic life support. Mean scores for all objectives except that for skills in IT and academic ambience, were found to be above 8.0. Mean scores for first aid and basic life support were above 9.0. Rating by both the batches were found similar in respect of fifteen of the objectives. The observed statistical difference in respect of four of the objectives i.e. alternate health systems, principles of primary care, skills in Language and basic life support, could be a chance finding.

Fig -1 further elaborates and confirms the findings of Table -1. More than 75% students have given a score seven or more for all objectives and eight or more for ten out of nineteen objectives. In other words, majority of the students have perceived that the foundation course was able to meet the objectives it was meant for.

Qualitative data generated from the questionnaire was organized as themes and codes. Analysis of data in the form of findings is presented in Table – 2. Percentage of comments and sample responses from students are also included.

**TABLE - 2**  
**Open-Ended Questionnaire Responses Categorized into Common Themes**

<b>Probe</b>	<b>Theme</b>	<b>Codes</b>	<b>Percentage of responses</b>	<b>Sample responses</b>
What I liked most about the Foundation Course	Acclimatization	Exposure to campus environment	47.3	Our initial days of the college life made us comfortable to the environment and with people around us.
		Understanding the profession	41.1	It taught us about the basic manner, etiquette and role of doctor in the society.
	Capacity building	Skill training	31.2	The BLS demonstration was best part of foundation course.
		Interaction	15.2	The thing that I liked most about foundation course was the interaction with the professors.
		Professionalism	32.3	The part I liked most was medical ethics and professional.
		Dedicated faculty	13.3	I liked the dedication of faculties to teach their respective subjects.
Caring faculty	09.5	I loved the fact that our teachers were very considerate and caring.		
What I did not like about the Foundation Course	Lengthy and boring classes	Classes too long for the subject	64.6	Some of the classes were a bit long than necessary.
		Repeated subjects	49.4	Some lectures were repeated again and again.
		Continuous classes	52.5	The continuous long hours class sometimes make it a little boring.

		Less extra-curricular activities	51.7	Sports and extra-curricular activities were given very less time.
	Less of practical classes	Less practical/demo classes	46.4	Foundation course was very theoretical with very less practical learning.
What can be done to improve the Foundation Course	Duration of course	Increase duration of course	12.2	This course gives us opportunity to explore different aspects of medical profession and so it should be for whole year.
		Decrease duration of course	20.9	The duration of foundation course could be reduced and can involve more interactive sessions.
	Increase skill component	Increase hospital/field visits	35.7	To improve foundation course, we can be more exposed to clinical departments.
		Increase practical classes	40.7	The classes could have been more interactive with more practical approach.
		Scenario based training	07.2	More scenario based learning skill programme should be included.

Themes generated from probe 1 were acclimatization and capacity building. Of all the students, 47.3% attributed exposure to campus environment and 41.1% attributed understanding of the profession for smooth acclimatization to the medical college environment. Factors that led to capacity building included professionalism (32.3%), skill training (31.2%), interactive sessions (15.2%), dedicated (13.3%) and caring faculty (09.5%). Themes generated from probe 2 included lengthy and boring classes and less of practical classes. 64.6% of the students found that the time allotted for the given topic was more than what was required. Continuous classes, overlapping subjects leading to repetition, less of extra-curricular activities and practical classes made the classes boring. When asked to suggest measures for improvement of foundation course – probe 3 -, students commented on the duration of the course and increasing skill component in the course. 12.2% of the students suggested to increase the duration of the course and 20.9% suggested to decrease the duration. More than 35% of the students suggested to increase the skill component in the course – 35.7% were in favor of increasing hospital/ field area visit and 40.7% favored more of practical classes in the course.

Focus group discussions (FGD) were conducted to explore the students' perception of the foundation course and its duration. The students mentioned that the foundation course helped them understand about the course that they were going to pursue, about the campus they would be working in and about the role (as a doctor) that they would be performing. Their verbatim remarks are as follows:

- *As much as I remember about foundation course, firstly we were told about the curriculum of MBBS,*



*how it is divided. Then we have been told about the campus of our institution.*

- *Role of doctor basically, we were introduced to the patients and we were made to know how to deal with them how to make the patient comfortable and know his problems basically, so that we can treat him as per requirement.*

About the duration of the course, they mentioned many classes were allotted more time than what was required. Some classes were repeated also. They also mentioned that skill classes like BLS should be given more time. Their verbatim remarks are as follows:

- *Professional Development and Ethics module took 40 hours which I think was a bit more because most of things were covered in the orientation program as well. So it could be minimized.*
- *I think the hours regarding the BLS were a bit less and communication and language module also. Many people don't know how to operate computer so for them the hours should be increased so that they also learn to work on computer.*

## Discussion

The present study carried out to find the perception of students regarding usefulness of foundation course in medical curriculum, had participants from MBBS Batch 2021 and 2022. The study gains significance by virtue of it being one of the largest studies on Indian soil, having 263 students from two consecutive MBBS batches. The findings of the study showed that according to the students, the course had succeeded in attaining all the enumerated objectives to a large extent. The acclimatization to the new environment and capacity building helped smooth transition to the professional environment. Many students (64.6%) felt that the theory classes were long, repetitive and boring. There were less of demo/ practical classes (46.4%). Many students suggested incorporation of more classes on skills and hospital/ field visits. Opinion of the students were divided on the duration of the course – a small percentage of students (12.2%) wanted an increase in duration while a little more (20.9%) wanted a decrease in the duration of the course. For improvement of the course, more than 35% students suggested increased visits to hospital/ field area and increase in skill component of the course.

In our study, the students reported the foundation course as relevant with regards to objectives of the course and contents. A previous study conducted at a medical college in Chennai, India also reported positive feedback with regards to objectives of the course, contents, presentation and future value of the course in the student's career [7]. Another study from Bhuj, Gujarat, India reported that 75% of students felt that the objectives of the Foundation Course were largely met and it helped students, like the findings of our study, in adjusting to the new environment and allay their anxiety and fear [8]. In another study conducted by Singh, Sushobhana, Sachan and Chandra at Hind institute of Medical Sciences Safedabad, Barabanki, India most of the students acknowledged the usefulness of various elements of foundation course and appreciated the inclusion of this course in under graduate medical curriculum [9]. In the study conducted at SVS Medical College, Mahabubnagar, India by Dixit R, Joshi KP, Suhasini P, Jamadar D, the overall rating for the foundation course was very satisfactory and encouraging [10]. Like our study, Pandey et al based on the findings of their study, concluded that the one-month-long foundation course was beneficial for newly joined students to get introduced and adjusted to higher education systems' demands [11].

In our study, the students had rated BLS as the best with a mean score of 9.39. In a study by Khilnani, Patel and Khilnani also 40.5% students felt that the sessions on BLS and CPR training were the

most important and informative. They felt that BLS training was an important clinical skill that every medical student should acquire as it can save life [8].

About the duration of foundation course, the opinions were divided in our study. While 12.2% wanted an increase in duration, 20.9% wanted a decrease in duration. In a study conducted at a medical college at Puducherry, India students felt that the one-month course duration can be reduced [12]. In their study conducted at a medical college in North India, Sharma S, Gupta S, Bansal R. found that six percent of students responded on the duration of course (1 month) to be very long and thought that the same content could be delivered in the smaller duration of time [13]. In the study by Khilnani, Patel and Khilnani, 48.6% students felt that the present duration of FC (1 month) was appropriate and 49.3% students were of the opinion that one month was a long duration, and it should be less [8]. The difference in the findings could be because of the timing of the study. The study by Khilnani, Patel and Khilnani was conducted on the first batch i.e. on students who took admission in the year 2019 but our study was conducted on students who had taken admission 2 years later i.e. in the year 2021 and 2022. By this time, many of the things were streamlined and hence the change in the response.

For improvement of the course, like the findings of our study where students recommended increasing skill component, James T, Ajith TA, Joson D, Thomas B also recommended to include more topics concerned to the modules of skill training and extracurricular activities [14].

The only limitation of the study was probably, the lesser number of FGDs – one for each batch i.e. only eight students per batch. More number of FGDs might have strengthened our findings.

## Conclusion

The one-month long foundation course has been successful in familiarizing the students with their new environment. Students perceived it as an excellent opportunity to get acclimatized to the new professional environment of a medical college. They perceived that the course achieved its objectives to a large extent and helped them in their capacity building. Students found few classes long and boring but enjoyed the skill component of the course. Opinions about the duration of the course were divided. However, increase in skill component of the course and hospital/ field visits is likely to improve the impact of the course.

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