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To study the challenges in the implementation of "Foundation Course" of newly launch competency-based medical education curriculum among Indian medical colleges

Ramesh Pawar[1], Sunita Vagha[2], Varsha Pande[3], Sanjeev Chaudhary[4]

[1]Assistant Professor, Department of Community Medicine, Government Medical College, Akola, Maharastra, India, [2]Professor and Head, Department of Pathology, Jawaharlal Nehru Medical College (DDIMS), Wardha, Maharashtra, [3]Associate Professor, Department of Anatomy, Radhakrishna Dharmaday Foundation Medical College Hospital and Research Center, Bhopal, Madhya Pradesh, India, [4]Associate Professor, Department of Community Medicine, Government Medical College, Akola, Maharastra, India

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ABSTRACT

Background: Medical knowledge is advancing at a rapid pace in a world, where technological evolution is at an all-time high. However, the health-care system falls well short of acceptable standards when it comes to meeting patient demands. Our medical environment, on the other hand, requires conscious revamping to increase healthcare quality. Traditional training approaches are significantly lacking in this era of value-based medicine, which prioritizes quality measurement and provider proficiency. Competency-based medical education (CBME), with its emphasis on individual, programmatic and institutional outcomes, has the ability to realign medical education with this social expectation. However, CBME implementation, on the other hand, is fraught with many challenges. **Aim and Objectives:** The aim and objective of this article is to study the challenges in implementation of "foundation course (FC)" of newly launch CBME in Indian settings. **Materials and Methods:** The study was conducted in a tertiary care center in the specialty of advanced course in Research Methodology. This was an observational study with records of 180 participants in 2019–2020 year. The average age of group was 13–50 years. **Results:** One hundred and forty students and 40 teachers from various Medical Colleges had participated in the study. Around 70% participants had rated positive for the implementation of FC, while around 17% rated below average for the implementation of FC. Classes on Communication and Language (52.2%) and Computer and IT (45%) could not be taken was pointed out by the students. 35% of the students and 22.5% of the teachers pointed out that existing infrastructure is not sufficient for implementation of CBME. About 12.5% students express the concern that less study material is available on new CBME and topics included in the FC. Around 40% of the students and 17.5% of the teachers had express their concerned about time management during FC. **Conclusion:** The education community has begun to address the difficulties associated with implementing of CBME. Models and guidance are available to inform implementation strategies across the educational continuum, with a focus on the more efficient use of resources and technology, as well as the use of milestones and entrustable professional activities-based frameworks.

Key words: Competency-based medical education; Foundation course; CBME; Competency; Competence; Entrustable professional activities.

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INTRODUCTION

Competency-based medical education (CBME) is a results-oriented approach to residency training that has garnered national and worldwide popularity. CBME training prioritizes the patient, family, and community, with the primary goal of simultaneously enhancing educational and clinical results.

Address for Correspondence:
Dr. Ramesh Pawar, Assistant Professor, Department of Community Medicine, Government Medical College, Akola, Maharashtra, India.
Mobile: 9702523062. **E-mail:** drrameshniar@gmail.com

The challenges for medical education include that, instead of the government investing large resources in medical education and health care, the work force produced is insufficiently qualified. Basic surgical skills, inter-professional teamwork, information management, and quality improvement are all inadequate in the physician workforce.[1]

Medical education in the developing world is recognizing the need to shift away from the existing primarily knowledge-based education and emphasis on the skills required to fulfill duties as a health-care professional.[2-4]

To resolve the shortcomings, the government has chosen to replace the undergraduate medical education curriculum with a new CBME curriculum.[5] The MCI is a non-profit organization that promotes from August 2019, the CBME was planned and implemented and a circular as well as guidelines for its execution had been distributed to all medical colleges in India. Foundation course (FC), early curriculum clinical exposure, integrated teaching-learning, skill development-learning, and electives are the primary areas identified in the new. The "Foundation Course," is 1-month course which is to be perceived 1 month before the students begin their studies and is consider to be one of the most important aspects of CBME.

During this 1-month period, students are introduced to the MBBS curriculum and given the necessary information, communication (including electronic), technical, and language skills, all of which are regarded key aspects in the development of professionalism among medical students.[6] Procurement of resources and assistance, identification and resolution of difficulties, introduction of curriculum and execution of curriculum, curriculum modification, and failure to pay attention to any of the components threatens the effectiveness of a curriculum.[7]

Other nations have highlighted a number of obstacles in implementing the CBME among medical undergraduates, including benchmarking for assessment, developing medical students and PG residents programs, expanding faculty development programs, and developing better student evaluation system.[8,9] It is a new beginning in India for CBME implementation for medical undergraduates. The present study will aid in identifying the barriers to effective implementation of the "Foundation Course" in a newly designed CBME curriculum among medical undergraduate students, allowing for corrective action and effective solutions to be suggested.

Aims and objectives

The aim and objective of this article is to study the challenges in implementation of "foundation course (FC)" of newly launch CBME in Indian settings.

MATERIALS AND METHODS

Study area and patients

The present study was a descriptive cross-sectional study undertaken between 2019 and 2020 as part of a research project in the 8th Batch of the advanced course in Research Methodology. The study was conducted among students and Teachers of Medical Colleges in Maharashtra. A total of 180 participants were enrolled, of which 140 were students and 40 faculty members from various medical schools.

Study procedure

Medical educators helped to develop and validate a systematic collection of questions. The study was conducted using Google forms, which are publicly available in the public domain and participants were asked to answer within a certain time frame. Consent from all the stake holders involved in the study was taken and participants not willing to participate were excluded from the study.

Study tool was a predesigned and semi-structured questionnaire for quantitative methods and in-depth interview of stake holders for qualitative methods was taken. Some questions were close-ended, while others were open-ended and they covered a wide range of topics related to the implementation of the FC and CBME, such as the various challenges that faculty and students faced during the implementation of the FC and whether or not classes in computer, language, and communication were taught by experts. The role of the Medical Education Unit (MEU) in implementation, the availability of resources for effective FC implementation, and faculty and student perspectives on how to improve FC implementation in the future were all taken into considered. Data analysis was done using quantitative method. It was entered in Excel and analysis was done using software Epi Info 7 which was freely available in public domain.

RESULTS

The present study was undertaken among the teachers and students of Medical Colleges between 2019 and 2020 as a part of research project of advance course in Medical Education. A total 180 participants participated in the study. Among the participants, 78 (43.33%) were male and 102 (56.66%) were female, as shown in Table 1.

Feedback of MBBS Students on implementation of FC program were noted in table. (Table 2)

When students were ask to rate the implementation of FC in their college, they come out with following scores; Very

Good (2.86%), Good (67.14), Average (12.86%), Below Average (15.71%), and Poor (1.43%), as shown in Table 3 and Figure 1.

In the present study, difficulties faced by faculties while implementation of FC at collage were language and communication 52.5%, field visits 42.5%, classes-less practical oriented 27.5%; similar and repetitive topics 10%, absent students were 22.5%, pace of teaching 12.5%, and uninterested students were 27.5%. Of the total 26.19%, participants had pointed out that infrastructure and audio-visual aids were not working properly during the implementation of FC, study material was not provided by MEU and very less was available online about the topics were pointed out by 37.5% of the participants. (Table-4) In study material, 12.5% of teacher were not given proper responses and 5% of the professors were not on time. Time management was not proper by 42.5% and 12.5% teachers were not one time. In students, teacher relationship 17.5% were no proper response from students and 10% were uncooperative behavior of other teachers. Classes of computer were not taken by experts were pointed out by 45% of the students. About 77.5% students suggested that for language, communication, computer, and IT a dedicated teacher with separate time should be provided.

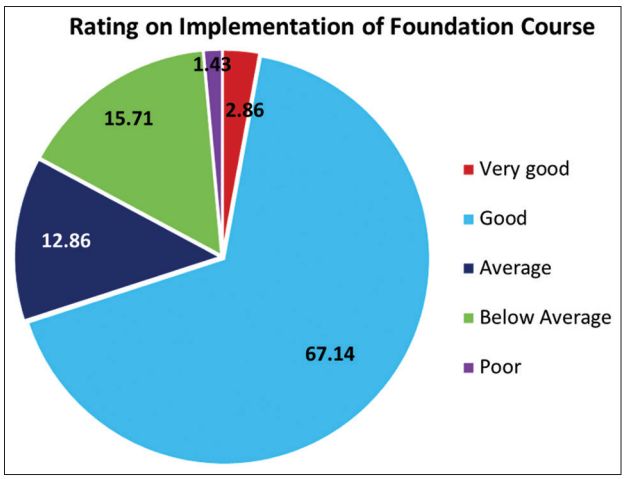

Figure 1: Frequency of response by students

Table 1: Sex-wise distribution of participants

Study Participants	Sex		Total
	Male	Female	
Students	80 (78.43)	60 (76.92)	140 (77.78)
Teachers	22 (21.57)	18 (23.08)	40 (22.22)
Total	102 (100.00)	78 (100.00)	180 (100.00)

Figures in the parenthesis denote percentages

Administrative difficulties faced during implementation of FC by teachers were noted below. (Table-5).

Administrative difficulties such as less infrastructure, time management, and many more were faced during implementation of FC, are mention in above table.

The best activity suggested by students during implementation of FC was extracurricular activity (22.86%), active learning and group interaction (22.14%), and behaving with patient empathetically (21.43%). (Table 6).

Table 2 : Feedback of MBBS Students on implementation of FC program

First year MBBS student's feedback on FC program	Yes	No	May be/Not Satisfactory
Questions	Total number of students (n)=140 (100.00)*		
1. Do you feel FC was important before actual academic classes	111 (79.29%)	6 (4.29)	23 (16.43%)
2. Do you feel the time table of FC was prepared properly according mci guidelines	117 (83.57)	23 (16.42)	0 (0.00)
3. Do you feel the time table of FC was explained in advanced to students	123 (87.86)	17 (12.14)	0 (0.00)
4. Could you attend the FC fully	104 (74.29)	36 (25.71)	0 (0.00)
5. Do you feel resource material were adequate for learning in FC	87 (62.14)	53 (37.86)	0 (0.00)
6. Did MEU of your institute help you in getting study material and resources	106 (75.71)	34 (24.29)	0 (0.00)
7. Classes on time were taken appropriately by the trained faculty	117 (83.57)	23 (16.42)	0 (0.00)
8. Classes of computer were taken	86 (61.42)	54 (38.57)	0 (0.00)
9. Classes of language were taken	65 (46.42)	75 (53.57)	0 (0.00)
10. Separate time was provided for sports and extracurricular activity	73 (52.14)	67 (47.86)	0 (0.00)
11. Do you feel the medial education unit coordinator and MEU unit guiding you during FC	100 (71.42)	31 (22.14)	9 (6.43)
12. Have you faced any difficulty in getting familiar with college environment	27 (19.28)	113 (80.71)	0 (0.00)
13. Do you feel the teachers were using the technology and e-learning efficiently	135 (96.42)	5 (3.57)	0 (0.00)
14. Students community visits (field visits) were conducted at your institute	53 (37.86)	87 (62.14)	0 (0.00)
15. Do u feel self-directed learning is good change in CBME	106 (75.71)	34 (24.28)	0 (0.00)
16. Do you feel that SDL was given a separate weightage and importance during FC	107 (76.42)	33 (23.57)	0 (0.00)
17. Do you feel coordination of teacher was proper while implementation of FC	106 75.71)	5 (3.57)	29 (20.71)
18. Do you feel FC was implemented with proper planning	114 (81.42)	26 (18.57)	0
19. Do you feel FC will help to reduce the ragging in Medical Colleges	75 (53.57)	26 (18.57)	39 (27.86)
20. Do you feel FC course will help to achieve the desired competencies among medical graduates	107 (76.42)	6 (4.28)	27 (19.29)

*Multiple Responses were recorded and Figures in the parenthesis denote percentages. FC: Foundation Course, MEU: Medial education unit, SDL: Self-directed learning

DISCUSSION

The FC is a 1-month course that will be dedicated to orienting new students about the teaching programmed, assisting them in adapting, learning language (English and local language), computer use, communication skills, time management, stress management, as well as sports and extracurricular activities.[10] However, our research revealed that language and computer sessions were not attended by experts and little time was set out for extracurricular and sporting activities.

CBME is seen as an answer to these challenges in that it is focused on outcomes, is inherently tied to the needs of those served by graduates, and involves explicit definitions of all essential domains of competence to be acquired (Neufeld et al., 1993; Tamblyn 1999; Voorhees 2001b).

Inadequate staff/staffing issues

The majority of faculty participants in our study stated that, the current workforce is insufficient to teach this newly announced CBME programmer. Many teachers have requested that more teachers should be hired and teachers have also correctly pointed out that the tutoring positions are sanctioned but not filled; they are only shown on paper for MCI inspection purposes. Faculty also stated that, administration should be supportive of the FC's implementation. Sensitization initiatives, as indicated by deans and college managements, are necessary to make them amenable to CBMC, as evidenced by the literature regarding its necessity and benefits.[9-11] Before the implementation of the FC, it was discovered that only a small number of faculty members were trained in several workshops such as CISP, Revised Basic, and ATCOM. To guarantee uniform application of the CBMC, stakeholders and teachers must be sensitized and trained. As a result, MCI will need to hire more teachers to implement CBME and the FC.[10]

Table 3: Rating the implementation of FC for MBBS

How will you rate the implementation of FC for MBBS	Frequency (n=140)
Very good	4 (2.86)
Good	94 (67.14)
Average	18 (12.86)
Below average	22 (15.71)
Poor	2 (1.43)
Total	140 (100.00)

Figures in the parenthesis denotes percentages. FC: Foundation course

Specialist

While implementing the FC for the newly launched CBME curriculum, deficient staff was observed. Other investigations have come up with similar results. The majority of medical colleges have insufficient staff, which is only filled following MCI inspections. That too, is mostly due to temporary transfers. The TL and assessment techniques recommended by CBMC will necessitate a significant increase in faculty strength. Certain elements of the FC, such as language, computer skills, athletics, and extracurricular activities, may require the assistance of additional specialists.[10]

To understand the actual problem, we held a questionnaire with 1st year MBBS student's and take a feedback on FC program.

Table 4: Difficulties faced by faculties while implementation of FC at colleges

Difficulties faced	Difficulties faced by faculties while implementation of FC at college	Frequency (40)
Language and communication	Many students were facing language problem	21 (52.50)
	The language and communication program was not implemented properly	
Field visits	Not conducted field visits due to lack of transport facility for field visit	17 (42.50)
Classes	Less practical oriented, less group activity	11 (27.50)
	More topic were similar and repetitive	4 (10.00)
	Common off of the students was major problem	9 (22.50)
	Pace of teaching was more could not cope up	5 (12.50)
	Could not have been taken more interestingly	11 (27.50)
Infrastructure	Lack of space for sitting in the class	14 (35.00)
	Audio-visual aids were not working properly during FC	11 (27.50)
	Study material was not provided by MEU and very less was available online about the topics	15 (37.50)
Study Material	No proper response by other teacher	5 (12.50)
	Professor was not on time	2 (5.00)
Time management	Time management were not proper	17 (42.50)
	Many times teachers were not one time	5 (12.50)
Students teacher relationship	No proper response from students	7 (17.50)
	Uncooperative behavior of other teachers	4 (10.00)
Computer and IT	Teachers should be trained in e-learning and computer	18 (45.00)
	No classes of computer were taken by experts	
Sports and extracurricular activities	Special time with dedicated teacher should be provided	31 (77.50)

Figures in the parenthesis denote percentages. FC: Foundation course

Table 5: Administrative difficulties faced during implementation of FC

What administrative difficulties have you faced during implemention of FC?	Responses
Availability of infrastructure and workforce Teaching Aids and Mic system were not working	9 (22.5)
Basically administration not come out of old tradition method	6 (15.00)
Time Management	7 (17.5)
Training of teachers involved in FC were not completed within stipulated time	5 (3.57)
Faculties were not oriented about the course and activity	3 (7.5)
Faculties from non-clinical departments were not properly informed and involved	10 (25.00)
Total	40 (100.00)

Figures in the parenthesis denotes percentages. FC: Foundation course

Table 6: Best activity according to students in the FC

What was the best activity according to you in FC?	Frequency n=140 (Percentage)*
1) Sensitization were given to students that how to behave with patients empathetically. 2) Training for BLS and suturing and dressing.	30 (21.43)
Active learning by students/group interactions	31 (22.14)
Classes on communication skills	27 (19.28)
Ethics classes	10 (7.14)
Extracurricular	32 (22.86)
Language teaching	7 (5.00)
Meditation	6 (4.29)
Outreached activities	17 (12.14)
Research methodology	12 (8.57)
Self-directed learning	19 (13.57)
Sensitization of the students for becoming doctors	16 (11.43)
E-Learning	23 (16.43)
All Activities	22 (15.71)

*Multiple Responses were recorded and Figures in the parenthesis denote percentages. FC: Foundation course

According to Caverzagie et al., faculty may need to improve their assessment, observation, feedback, and coaching skills to facilitate individualized learning and professional growth. Institutions, for their part, must support faculty development and the time commitment required for faculty to apply what they have learned to teaching and assessing trainees.

Administrative difficulties

In the present study, we found that many major problems such as in availability of infrastructure and workforce, teaching Aids, and Mic systems were not working (22.5%) and in faculties from non-clinical departments (25%).

However, the best activity was recommended to reduce challenges in implementation of FC such as sensitization which was given to students that how to behave with patients empathetically, self-directed learning, meditation, sensitization of the students for becoming doctors, and many more.

Besides that, clinical education facilities will need to reengineer the systems and environments, in which training takes place. Medical trainees are currently observed infrequently by supervising physicians (Hawley and Wilson 2004) and many trainees serve solely in a clinical workforce capacity with little intent for faculty to provide feedback for learning or professional growth.

Limitations of the study

1. As CBME is a new concept and started recently by the National Medical Council, because of scarce literature we cloud not draw the exact sample size required for the study.
2. As study was conducted on limited number of participants present study may not genelize the results to large population.
3. Some of the questions were open ended and opinion and view of the participants were taken in consideration. Complete information may not have reveled.
4. Further studies with large sample size are recommended.

CONCLUSION

As it is the first batch of MBBS students which have started with new CBME, although the challenges are daunting, we believe they can be resolved. Health care and medical education have changed. This process of transformation will take time, patience, diplomacy, and funding. With great efforts from stakeholders, teachers, and students, we can overcome the challenges in near future. Medical education stakeholders must work together to define meaningful and measurable outcomes for individuals, programs, and institutions that reflect the needs of Community.

We believe that the graduate medical education community must embrace the evolution to CBME. This transition will involve overcoming a number of challenges. Understanding the importance of implementing a competency-based training framework is only the beginning of the process of change. Allowing for the flexibility to meet the needs of the learner, while promoting change in the existing infrastructure of a time-and-process-based system will be critical. Given the diversity of programs and training sites, no single road map will fit all programs. Although competency-based training is the ultimate goal, the transition will likely include inter-mediate hybrid frameworks containing time and process components as well as specific competency-based outcomes. The support of senior institutional administration and the

leadership provided by the program director and key faculty champions at the local level will be critical to successful implementation. At the national level, accreditation and key stakeholder organizations must continue to ensure that CBME becomes a reality.

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RP, VP- Concept and design of the study, prepared draft of manuscript, review the literature and manuscript preparation, interpretation of results and analysis;
SV, SC- Concept, coordination, statistical analysis and data interpretation, preparation of manuscript and revision of the manuscript.

Work attributed to:
Government Medical College, Akola, Maharashtra, India.

ORCID ID:
Dr. Ramesh Pawar- https://orcid.org/0000-0003-1633-1990
Dr. Sunita Vagha- https://orcid.org/0000-0002-9763-9921
Dr. Varsha Pande- https://orcid.org/0000-0001-5716-2519
Dr. Sanjeev Chaudhary- https://orcid.org/0000-0002-0689-133X

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