



UNVEILING THE PATH TO SUCCESS - NAVIGATING CHALLENGES IN THE IMPLEMENTATION OF COMPETENCY-BASED MEDICAL EDUCATION (CBME) CURRICULUM

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ABSTRACT

Background: The Medical education system has revolutionized from traditional teaching methods to competency-based medical education (CBME). The switch from a two-decades-old traditional curriculum (1997) to the newly reformed competency-based medical education (CBME) in 2019 has led to a significant change. **Objectives:** To determine the challenges in implementing the CBME curriculum. To determine the level of acceptance of the CBME curriculum among the teaching faculty. **Methodology:** A web-based multicentric cross-sectional study was conducted from May to June 2023 among teaching faculty in government and private medical colleges of Telangana. The questionnaire was built using Google Forms and was disseminated through various social media applications like WhatsApp, Instagram, and Telegram. **Results:** Nearly 70% of the participants were from paraclinical departments, and only 11.5% were from clinical branches. 79.8% had undergone at least one FDP. Time constraints, an inadequate faculty in the departments were the most common difficulties raised by the respondents. It was found that there was a statistically significant association between different departments and the perception of faculty towards the CBME curriculum. Around 70% of the faculty strongly agreed that recruiting sufficient faculty was a way to overcome the challenges, followed by training of faculty in medical education, academic appraisal, and implementing the CBME curriculum in a phased manner. **Conclusion:** Competency-based medical education as a reform in the medical education, ameliorates the education standards of the medical graduates. Identifying and addressing the challenges of this novel approach would make graduates competent enough to attain the goals of an Indian Medical Graduate.

KEYWORDS : Competency, Medical Education, Indian Medical Graduate, challenges, perceptions, faculty

INTRODUCTION

World has perceived the need for change in medical education from the existing knowledge-based education and stresses on the skills required to fulfil roles as a health-care professional, which is grounded on the recommendations of the Accreditation Council of Graduate Medical Education of America which mandates the acquisition of six domains of competencies namely, patient care, knowledge, practice-based learning, communication skills, professionalism, and systems-based practice.^[1-7] So medical education system has revolutionized from traditional teaching methods to competency-based medical education (CBME).^[8, 9] Switching of a two-decades-old traditional curriculum (1997) by the newly reformed competency-based medical education (CBME) in 2019 has led to a paramount change.^[1]

This new curriculum was introduced from the 2019-2020 batch of MBBS students, which focuses on student-centred learning with a systematic, interdisciplinary, integrated approach.^[10,11]

The goal of CBME is to produce an Indian Medical Graduate (IMG) who is envisaged as a doctor fulfilling the roles of clinician, leader, communicator, professional, and lifelong learner.^[12,13] Elements of the new curriculum include the foundation course (FC), early clinical exposure (ECE), attitude ethics, and communication (AETCOM), elective postings, alignment, and integration. Other features include opting for electives, self-directed learning (SDL), problem-based learning (PBL), structured feedback, and maintenance of a logbook.^[14-19]

Faculty development programs are crucial to drive this curriculum. The Medical Council of India (MCI) has initiated the National Faculty Development Program (FDP), which aims to empower the faculty of every medical institution across the country by a structured and perpetuating process^[20] [Fig 2]

Successful and sustained operationalization of CBME curriculum is a huge challenge for faculty, so this study was an attempt to explore the difficulties in implementing CBME curriculum, to determine the level of acceptance of CBME curriculum among the teaching faculty, and to study the association between different departments and perception towards CBME.

MATERIALS AND METHODS:

Study Design And Setting:

A web-based multicentric cross-sectional study was conducted among teaching faculty of various medical colleges of Telangana. The study period was from May to June 2023.

Study Participants And Sampling:

All the teaching faculty in government and private medical colleges of Telangana, including tutors and senior residents. Snowball sampling technique.

Data Collection:

The questionnaire was built using Google Forms and was disseminated through various social media applications like WhatsApp, Instagram, and Telegram. The Google form included, firstly, an informed consent section and continued with questions on Medical Education Trainings and CBME.

Data Analysis:

After completion of data collection, the questionnaire was channelled to the Google platform, and the resultant data was downloaded as a Microsoft Excel sheet. The data was then analysed using IBM SPSS Statistics version 20. Data has been presented in the form of numbers and percentages for categorical variables, and as means for continuous variables. The chi-square test was used to test the statistical significance.

Ethical Permissions:

Institutional Ethical Clearance was obtained before the start of the study.

RESULTS:

Table 1: Baseline Characteristics Of The Study Subjects (n=366)

Variable	Frequency (%)
Age in years	
Below 25years	123 (33.3)
25-50years	189 (51.6)
Above 50years	54 (15.1)
Gender	
Male	130 (35.5)
Female	236 (64.5)

Type of institute	
Government	145 (39.6)
Private	221 (60.4)
Department	
Pre-clinical	72 (19.7)
Para clinical	152 (68.9)
Clinical	42 (11.5)
Designation	
Tutor	37 (10.1)
Senior Resident	37 (10.1)
Assistant Professor	147 (40.2)
Associate Professor	55 (15)
Professor	90 (24.6)
Preferred method of teaching	
Traditional	85 (23.2)
CBME	281 (76.8)
Total teaching experience (years)	8.48years
Total teaching experience in CBME (years)	2.3years

Of the 366 respondents, government and private medical college faculty account for 39.6% and 60.4%, respectively. Nearly 70% of the participants were from paraclinical departments, and only 11.5% were from clinical branches. Shivkumar Gopalakrishnan et al²² found that Pre, para & clinical discipline participants were 34.3%, 29.1%, and 37.5%, respectively. Assistant professors constituted 40% of the respondents, followed by professors, 25%. More than three-quarters of the respondents opted for the CBME method of teaching. Mean teaching experience, mean teaching experience in CBME.

Table 2: Rationale For Implementing The CBME Curriculum

Variable	Frequency
Undergone FDP in Medical Education	
Yes	292 (79.8)
No	74 (20.2)
If yes, what are they?	
Basic Medical Education	138 (37.8)
Revised basic MET	228 (62.3)
CISP	168 (45.9)
AETCOM	30 (8.2)
ACME/FAIMER	24 (6.6)
CBME	78 (21.3)
Mentorship	60 (16.4)
If no mention the reasons	
No opportunity	55 (74.3)
Not aware	19 (25.7)
Do you think that FDPs are helpful for CBME in implementation	
Yes	348 (95.1)
No	18 (4.9)
Do you think that CBME is useful?	
Yes	324 (88.5)
No	42 (11.5)
Are you following the CBME curriculum to the full extent?	
Yes	242 (66.1)
No	124 (33.9)
Are you facing any difficulty in implementing CBME	
Yes	244 (66.7)
No	122 (33.3)

From table 2, 79.8% had undergone FDPs; those trained in basic medical education, revised basic MET, CISP, Attitude Ethics and Communication (AETCOM), and an advanced course in medical

Table 4: Perceptions Of Faculty Towards CBME And Ways To Overcome The Challenges In Implementing CBME Curriculum On A Likert Scale

Variable	SA	A	N	DA	SDA
Perceptions of faculty					
Increased interaction	129 (35.2)	164 (44.8)	55 (15)	18 (4.9)	0
Creates interest	129 (35.2)	152 (41.5)	61 (16.7)	24 (6.6)	0
Better understanding	104 (28.4)	183 (50)	67 (18.3)	12 (3.3)	0
Better results	67 (18.3)	141 (38.5)	110 (30.1)	36 (9.8)	12 (3.3)
Overall perception	93 (25.4)	176 (48.1)	61 (16.7)	24 (6.6)	12 (3.3)
Ways to overcome challenges					
Undergoing	171 (46.7)	176 (48.1)	19 (5.2)	0	0
Implementing in a phased manner	129 (35.2)	170 (46.4)	61 (16.7)	6 (1.6)	0
FDPs	256 (69.9)	98 (26.8)	6 (1.6)	6 (1.6)	0

education constitute 37.8%, 62.3%, 45.9%, 8.2%, and 6.6%, respectively. 21.3% have undergone CBME training, and only 16.4% mentorship. Those trained in the revised basic course workshop, Attitude Ethics and Communication (AETCOM), and the advanced course in medical education constitute 43.55%, 37.6%, and 16.65%, respectively.

Almost 75% of the respondents mentioned a lack of opportunity as the reason for not undergoing FDPs. Around 95% think that FDPs are helpful for CBME implementation. Two-thirds of the faculty have stated that they were following CBME to the full extent and facing difficulties in implementing the CBME curriculum.

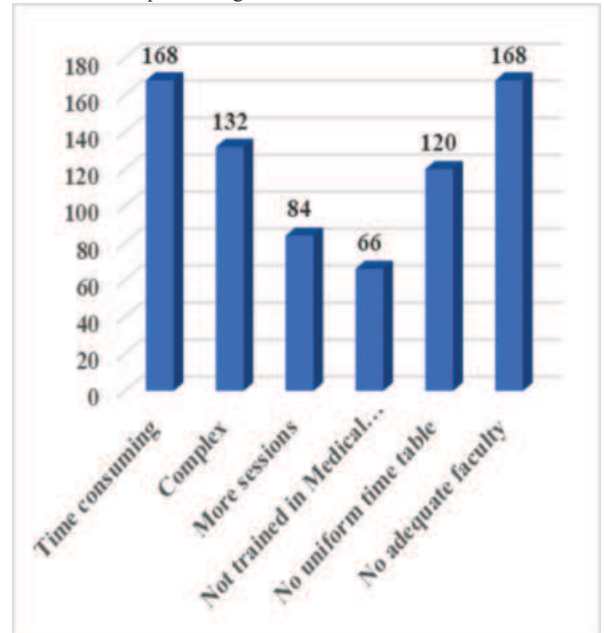


Fig 1: Difficulties In Implementing CBME Curriculum (Multiple Responses)

Figure 1 shows that the time constraints, no adequate faculty in the departments, were the most common difficulties raised by the respondents, followed by complex curriculum, no uniform timetable, more sessions, and faculty not trained in Medical Education.

Table 3: Perceptions Of Faculty On The Usefulness Of Newer Teaching-learning Methods Of CBME

Teaching – learning Method	Very useful	Useful	Not useful
Self-Directed Learning (SDL)	130 (35.5)	194 (53)	42 (11.5)
Early Clinical Exposure (ECE)	122 (33.3)	220 (60.1)	24 (6.6)
Reflective Learning	128 (35)	190 (51.9)	36 (9.8)
Small Group Discussion (SGD)	209 (57.1)	145 (39.6)	12 (3.3)
Skill Training	185 (50.5)	163 (44.5)	18 (4.9)
Electives	93 (25.4)	243 (66.4)	30 (8.2)
Integrated Teaching	183 (50)	153 (41.8)	30 (8.2)

Regarding the perceptions of faculty on the usefulness of newer teaching-learning methods from table 3, 57.1% of the respondents had the impression that small group discussion was very useful, followed by 50% each had integrated teaching and skill training. 11.5% expressed that self-directed learning was not useful, followed by 9.8% reflective learning.

Recruiting sufficient faculty	170 (46.4)	160 (43.7)	36 (9.8)	0	0
Academic appraisal	176 (48.1)	153 (41.8)	31 (8.5)	6 (1.6)	0
Attending CME, Workshops, and Conferences on Medical Education					
CBME helps in attaining the Roles of an Indian Medical Graduate	153 (41.8)	171 (46.7)	42 (11.5)	0	0
Clinician	92 (25.1)	166 (45.4)	90 (24.6)	18 (4.9)	0
Leader	165 (45.1)	153 (41.8)	48 (13.1)	0	0
Communicator	141 (38.5)	141 (38.5)	66 (18.1)	18 (4.9)	0
Lifelong learner	134 (36.6)	160 (43.8)	60 (16.4)	6 (1.6)	6 (1.6)
Professional					

*SA-Strongly Agree, A- Agree, N- Neutral, DA- Disagree, SDA- Strongly Disagree

Table 4 depicts Perceptions of faculty on CBME curriculum, nearly three-quarters of the faculty agreed that it creates interest, increases interaction, and helps in better understanding. Around 70% of the faculty strongly agreed that recruiting sufficient faculty was a way to overcome the challenges, followed by training of faculty in medical education, academic appraisal, and implementing the CBME curriculum in a phased manner.

Table 5: Overall Perception Of Faculty Of Different Departments Towards CBME On Likert Scale (n=366)

Department	SA	A	N	DA	SDA	χ^2 - 38.078 P- 0.000
Pre-clinical	6	42	12	6	6	
Para clinical	75	104	49	18	6	
Clinical	12	30	0	0	0	

*SA-Strongly Agree, A- Agree, N- Neutral, DA- Disagree, SDA- Strongly Disagree

From Table 5, it was found that there was a statistically significant association between different departments and the perception of faculty towards the CBME curriculum.

DISCUSSION:

The reforms in the medical education system have alarmed all teaching institutions with many challenges in implementing the newer curriculum with the introduction of various teaching learning methods. For the successful implementation of the newer curriculum, FDPs are of utmost importance. In this study, around 80% of the faculty had undergone at least one FDP. These findings were consistent with a study by Ramanathan R, Shanmugam J, et al.^[21] Those trained in basic medical education, revised basic MET, CISP, Attitude Ethics and Communication (AETCOM), and an advanced course in medical education constitute 37.8%, 62.3%, 45.9%, 8.2% and 6.6%, respectively. 21.3% have undergone CBME training, and only 16.4% mentorship. Ramanathan R, Shanmugam J, et al.^[21] found that nearly half of the participants have undergone basic course and curriculum implementation support programme training. Previous research by Rustagi SM et al.^[23] identified that 44.8% of faculty had undergone RBCW and 39.7% attended CISP.

Medical Education Units or faculty of the teaching institutions were facing many challenges, like a lack of adequate faculty, sudden changes in curriculum, which are complex to implement in their full extent, increased workload, etc., in implementing the CBME curriculum. In this study, time constraints, no adequate faculty in the departments, were the most common difficulties raised by the respondents, were complex curriculum, no uniform timetable, more sessions, and faculty not trained in Medical Education. In a study by Ramanathan R, Shanmugam J, et al.^[21] More than 80% opined that Faculty members in departments are not adequate for successful CBME implementation. Shivkumar Gopalakrishnan et al.^[22] explored that the perception of major challenges included a high student-to-faculty ratio 67.7%, infrastructural deficiencies 41.4%, and non-feasible assessment methods 41.1%. Research findings by Kulkarni et al in 2020 found that student to student-to-faculty ratio, poor infrastructure, time constraints, lack of commitment, and human inertia to be the main hurdles in the way of CBME^[24,25].

For the operationalization of the CBME curriculum, the challenges need to be addressed, the solutions like recruiting sufficient faculty as ways to overcome the challenges were opted for by 70% of the faculty, followed by training of faculty in medical education, academic appraisal, and implementing the CBME curriculum in a phased manner. Shivkumar Gopalakrishnan et al.^[22] observed that the solutions suggested were boosting faculty strength 73.7%, revamping infrastructure 69.3%, performance-based remuneration 35.9 %, and additional administrative support 30.7%

CONCLUSIONS:

Competency-based medical education as a reform in medical education ameliorates the education standards of the medical graduates. It necessitates identifying the concerns and challenges, like administrative, logistical, practical, and conceptual, in CBME. Addressing the challenges of this novel approach would make graduates competent enough to attain the goals of an Indian Medical Graduate.

Abbreviations:

FDP – Faculty Development Programme
CBME – Competency-Based Medical Education
IMG – Indian Medical Graduate
AETCOM – attitude and communication
CISP – Curriculum Implementation Support Program
SDL – Self-Directed Learning
SGD – Small Group Discussion
ECE – Early Clinical Exposure
ACME – Advanced Course in Medical Education
FAIMER – Foundation for Advancement of International Medical Education and Research

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