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Exploring faculty perspectives on competency-based medical education: A report from India

Rashmi Ramanathan, Jeevithan Shanmugam¹, Magadi Gopalakrishna Sridhar², Kalaniti Palanisamy³, Seetharaman Narayanan¹

Department of Physiology, KMCH Institute of Health Sciences and Research, Coimbatore, Tamil Nadu, India, ¹Department of Community Medicine, KMCH Institute of Health Sciences and Research, Coimbatore, Tamil Nadu, India, ²Department of Biochemistry, KMCH Institute of Health Sciences and Research, Coimbatore, Tamil Nadu, India, ³Department of General Medicine, KMCH Institute of Health Sciences and Research, Coimbatore, Tamil Nadu, India

Address for correspondence:

Dr. Jeevithan Shanmugam, Department of Community Medicine, KMCH Institute of Health Sciences and Research, Coimbatore, Tamil Nadu, India. E-mail: dr.jeevithan@gmail.com

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Abstract:

INTRODUCTION: Medical education in India is experiencing a paradigm shift from traditional curriculum to competency-based medical education (CBME). It de-emphasizes time-based training and promises greater accountability, flexibility, and learner centeredness. Faculty development is integral in the context of CBME. Considering faculty perceptions toward the new CBME and addressing the difficulties will play a vital role in successful implementation.

MATERIALS AND METHODS: A cross-sectional study was carried out among 297 teaching faculty in 91 medical colleges across 20 states all over India between February and July 2020. A structured validated questionnaire on CBME was used to collect the responses through Google forms and was exported and analyzed in Microsoft Excel.

RESULTS: More than 80% opined that Faculty members in departments are not adequate for successful CBME implementation. Reflective learning, early clinical exposure, and elective posting were accepted by 60.2%, 70.4%, and 45.5% of the faculty, respectively. Around 81.8% welcomed horizontal integration, whereas only 54.2% favored vertical integration during the Phase I MBBS.

CONCLUSION: Few reforms such as curtailing the duration of foundation course, sensitization of all medical teachers through faculty development programs, better synchronized vertical integration, increasing the strength of faculty in each department, and adequate infrastructure for skills laboratory can be undertaken as per faculty suggestions.

Keywords:

Attitude Ethics and Communication, competency-based medical education, early clinical exposure, integration, self-directed learning

Introduction

Medical education in India is experiencing a shift from traditional curriculum to competency-based medical education (CBME).^[1] CBME involves the attainment of observable abilities by students in a time-independent, learner-centred manner.^[2] The core feature of CBME is to produce a competent Indian Medical Graduate through skill-based training and to equip them with metacognition.^[3]

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A medical graduate should possess knowledge, skills, attitudes, values, and responsiveness, to function appropriately and effectively as a “physician of first contact” of the community while also being globally relevant.^[3] To fulfill this goal, he/she must be able to function in the following roles effectively: Clinician, communicator, leader and team member, life-long learner and professional, for which the medical teacher needs to function as a proficient teacher, facilitator, planner, manager, performance assessor, researcher, and mentor.^[4-7]

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The traditional educational approach is teacher centred, with focus on knowledge acquisition and single-time, summative, and norm-referenced assessments. CBME aims to improve student competence and performance by shifting the educational approach to a learner-centered one, with focused student learning, knowledge application, and frequent, formative, criterion-referenced assessments. Emphasis on learners' engagement, using newer performance assessment methods as a learning tool along with formal teaching of communication and professionalism will lead to a significant change in existing teaching-learning methods. Faculty development is one of the most integral aspects of CBME. Mere introduction of CBME will not serve the purpose and the principal responsibility of carrying it forward lies on the shoulders of medical faculty. Although faculty development is gaining momentum in India by MCI-directed faculty development programs through medical education units, it is yet to be completely materialized in most of the institutions.^[8-10]

A short span of 3 days of curriculum implementation support program will not be sufficient to cater to the newer educational roles of the teachers.^[11]

Although being widely appreciated, the new curriculum is also facing criticism by the faculty. The upcoming strategies in medical education motivated us to explore the faculty perspectives on the implementation of CBME along with the challenges, time, and resource constraints encountered.

Materials and Methods

Study design and setting

This cross-sectional study was conducted between February and July 2020 among teaching faculty from medical colleges all over India.

Study participants and sampling

The study information sheets were circulated in various electronic media channels (email lists, professional WhatsApp groups, etc.). Nonprobability sampling method of volunteers opt in sampling was done. Those interested were provided with the link for the Google forms questionnaire and the informed consent form. Overall, 297 interested and willing Medical teachers from 20 Indian states participated in the study.

Data collection tool and technique

A structured questionnaire on the views of the newly implemented competency-based medical curriculum was prepared, predominantly using the five-point Likert scale pattern. There was also an open-ended questions section at the end, to add their views in a qualitative manner. The questionnaire was validated by one external

and two internal experts in medical education. Informed consent was included in the questionnaire so that faculty who were not willing to participate need not proceed further. The questionnaire was uploaded as Google forms and the link was sent to medical teachers through electronic platforms.

Ethical consideration

Institutional ethical committee clearance was obtained. No personally revealing information was requested. The questions primarily related their opinions and perceptions regarding the new curriculum.

Results

Of the total respondents, government and private medical college faculty constitute 40.7% and 59.3%, respectively. The proportion of faculty who attended various medical education training programs was more or less equal in both government and private sectors. Nearly half of the participants have undergone basic course and curriculum implementation support programme training. Those trained in revised basic course workshop, Attitude Ethics and Communication (AETCOM), and advance course in medical education constitute 43.55%, 37.6%, and 16.65%, respectively [Figure 1].

Majority embraced the introduction of basic life support training (86.8%), stress management sessions (82.5%), language and communication skill sessions (78.8%), and professionalism and ethics (77.1%) during the foundation course. About 59.6% of the faculty supported IT/computer skills training. Nearly two-third felt that the duration of foundation course can be reduced to 2 weeks [Table 1].

With respect to adult learning principles, small group teaching was accepted as a useful method of teaching by the majority of teachers (83.8%), followed by skills laboratory training (74.4%), self-directed learning (SDL) (70.4%), and early clinical exposure (ECE) (70%). Reflective learning and elective posting were accepted by 60.2% and 45.5% of the faculty, respectively [Figure 2].

Learning the concepts of attitude, ethical aspects of medicine, and communication skills during Phase I curriculum was perceived as essential by 69%. The need for ECE was emphasized by more than half of the respondents (64.6%). Horizontal Integration for First MBBS students was accepted by 81.8% of the faculty, whereas 54.2% believed that it is desirable to learn integrated concepts from Phase II and III participants (vertical integration) in the 1st year. Around 35.4% opined that their college had adequately trained staff to teach the students in skills laboratory. Around 87.9% opined that faculty need to

Table 1: Academic staff perception on introduction of foundation course

Components	Values				
	SA, n (%)	A, n (%)	N, n (%)	D, n (%)	SD, n (%)
It is necessary to orient the students to MBBS and all aspects of medical environment in foundation course	101 (34)	99 (33.3)	46 (15.5)	30 (10.1)	21 (7.1)
Within the foundation course, the following are useful aspects					
Basic life support training	167 (56.3)	91 (30.6)	20 (6.7)	11 (3.7)	8 (2.7)
Field/health centre visits	110 (37)	102.0 (34.3)	48 (16.2)	24 (8.1)	13 (4.4)
Stress/time management	148 (49.8)	97 (32.7)	28 (9.4)	9 (3)	15 (5.1)
Language and communication skills	139 (46.8)	95 (32)	28 (9.4)	18 (6.1)	17 (5.7)
Professionalism and ethics	148 (49.8)	81 (27.3)	31 (10.4)	18 (6.1)	19 (6.4)
Biomedical waste management	107 (36)	100 (33.7)	52 (17.5)	15 (5.1)	23 (7.7)
IT/computer skills	88 (29.6)	89 (30)	63 (21.2)	27 (9.1)	30 (10.1)
1 month duration of foundation course is too long	108 (36.3)	75 (25.3)	48 (16.2)	51 (17.1)	15 (5.1)

SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly Disagree

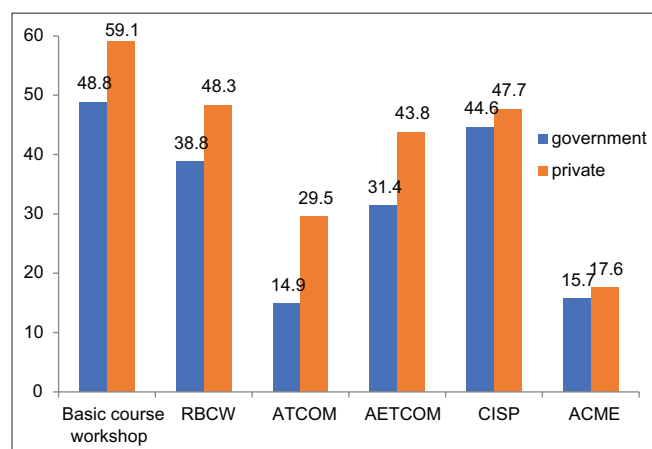


Figure 1: Proportion of faculties who attended MCI related medical education training

be trained in providing constructive feedback to the students [Table 2].

Eighty-seven percent of them had the impression that interdepartmental cooperation may be difficult during vertical alignment and integration. Majority (84.2%) opined that the minimum faculty strength as per the MCI guidelines was not sufficient to implement the new curriculum. Only 22% of the participants felt that, the faculty are trained sufficiently to implement the new CBME curriculum [Table 3].

Discussion

A cross-sectional study was undertaken to explore the views of medical college faculty on the newly implemented CBME. Although the faculty across India readily acknowledge the momentous change in curriculum, the pace at which they are getting trained is slow.^[11] Hence, intensification of the existing Faculty development program is the need of the hour. The educators must be well equipped to advance further in their respective fields of study and guide students on their journey of inquiry and discovery.

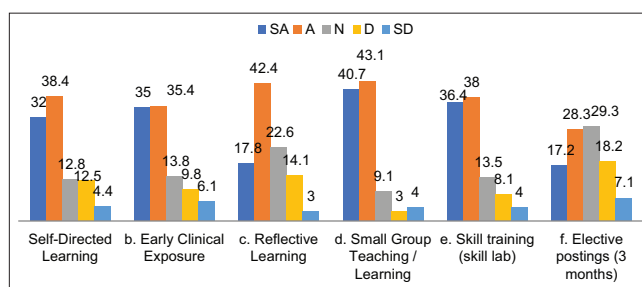


Figure 2: Rating of learning strategies-perspectives of facilitators

A proper orientation immediately after admission into medical school can make students adapt themselves to the course and its requirements.^[2,11] Suman *et al.* in 2007^[12] and Srimathi in 2014^[13] who had conducted foundation courses in their respective institutions before nationwide implementation reported that it provided insight and prepared the students to enter into the medical field with confidence. Although majority of the faculty accepted that foundation course was necessary to sensitize the students toward the undergraduate medical program, nearly two-thirds felt that its duration can be reduced.

Lack of confidence and competence among medical students in administering emergency care emphasize the need for basic life support training in undergraduate medical education.^[14-18] In the present study, the implementation of basic life support training for undergraduate students was welcomed by the majority of the participants.

Mata *et al.*^[19] in their meta-analysis on 54 studies found that the overall pooled prevalence of depression in medical students was 28.8%. It increased as the year of study increases. Patil *et al.*^[20] and Anuradha *et al.*^[21] found that the prevalence of stress among medical students was high in India. The need for stress management sessions has been rightly pointed out in these studies. More than 80% of our participants also welcomed the introduction of stress management sessions.

Table 2: Faculty perceptions on newer learning strategies under competency-based medical education

CBME components	SA, n (%)	A, n (%)	N, n (%)	D, n (%)	SD, n (%)
AETCOM					
Learning AETCOM skills are necessary for Phase I medical students	119 (40.1)	86 (28.9)	36 (12.1)	33 (11.1)	23 (7.8)
Early clinical exposure					
Designing, planning ECE modules along with the clinical department are difficult	96 (32.3)	96 (32.3)	63 (21.3)	28 (9.4)	14 (4.7)
Integration					
Horizontal integration of 1st year subjects helps in holistic learning	125 (42.1)	118 (39.7)	30 (10.1)	17 (5.7)	7 (2.4)
It is desirable to learn integrated concepts from Phase II and III subjects in 1st year, even when they are not assessed in the current year	51 (17.2)	110 (37)	59 (19.9)	46 (15.5)	31 (10.4)
Skills training					
Our institution has an adequate infrastructure in the skills lab to train the learners as per CBME recommendations	37 (12.5)	95 (32)	77 (25.9)	44 (14.8)	44 (14.8)
Our faculty are adequately trained to impart skills based training as per CBME recommendations	26 (8.8)	79 (26.6)	81 (27.3)	67 (22.5)	44 (14.8)
Assessment and feedback					
Introducing newer assessment methods at the workplace like mini CEX, DOPS and multi-source feedback mandate lots of work up	104 (35)	113 (38)	51 (17.2)	19 (6.4)	10 (3.4)
Having multiple choice questions as the mode of assessment in postgraduate admission is against the skill based training in undergraduate curriculum	114 (38.4)	99 (33.3)	45 (15.2)	14 (4.7)	25 (8.4)
Faculty need to be trained in providing constructive feedback	152 (51.2)	109 (36.7)	25 (8.4)	7 (2.4)	4 (1.3)

AETCOM=Attitude ethics and communication, CBME=Competency based medical education, ECE=Early clinical exposure, DOPS=Direct observation of procedural skills, CEX=Clinical evaluation exercise, SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly Disagree

Table 3: Challenges in the implementation of competency-based medical education

Components	Values				
	SA, n (%)	A, n (%)	N, n (%)	D, n (%)	SD, n (%)
Multiple departments working together to create and deliver integrated content is challenging	131 (44.1)	127 (42.8)	24 (8.1)	9 (3.0)	6 (2.0)
There is likely to be major difference in implementation of CBME in various colleges	158 (53.2)	92 (31)	41 (13.8)	3 (1)	3 (1)
Faculty members in departments are not adequate for CBME related works	202 (68)	48 (16.2)	34 (11.4)	6 (2)	7 (2.4)
Currently, the faculty are trained sufficiently to implement the new CBME curriculum	19 (6.4)	47 (15.8)	67 (22.6)	100 (33.7)	64 (21.5)
There is a need for extracurricular activities and sports in medical education curriculum	147 (49.5)	96 (32.3)	37 (12.5)	8 (2.7)	9 (3.0)
There is adequate administrative support for implementing CBME in our institution	77 (25.9)	77 (25.9)	79 (26.6)	40 (13.5)	24 (8.1)

CBME=Competency-based medical education, SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly Disagree

Good communication skills and approaching a patient with empathy and kindness are two of the most needed qualities of a medical student. The need for training in communication skills had been clearly explicated by many authors.^[22-27] A major proportion of participants preferred separate faculty training for AETCOM.^[11]

ECE can make basic science curriculum more relevant and it helps students socialize to medicine and strengthen skill acquisition.^[28-30] Basic sciences are the backbone for further specialization and future clinical practice. Many opined that by entertaining ECE components from Phase I onwards, the importance of basic medical sciences may be lessened. Few also commented that strengthening of basic sciences is essential, as it is a fundamental requirement on which scientific reasoning and clinical problem-solving are based upon.

The MCI has recommended integration of at least 80% of the topics, to understand the related concepts better, to prevent redundancy and to save time. Integration of teaching learning across the phases in medical education

can break departmental silos.^[2] Although integration was much welcomed by most of the educators, many did not support the introduction of 2nd and 3rd year topics in the 1st year, as few concepts can be difficult to understand and can be painstakingly time-consuming. Although ideal on paper, many felt it was difficult to implement due to differences in weightage of each subject, time allotment, and faculty strength.^[11]

More than half of the respondents accepted that their colleges were not well equipped with the skills laboratory and only one-third of the staff felt that they were adequately trained to teach students in the skill laboratory. However, there is no uniform and clear pattern of assessment method for the competencies learned through skills laboratory.^[31]

In a constantly changing environment, SDL equips the learners to develop independent learning, assertiveness, and accountability to remain self-reliant as a life-long learner and have a continuous quest for knowledge through critical thinking that will enhance retention and recall of information to promote better

decision-making.^[32] Although adult learning principles were appreciated by more than 2/3rd of the faculty, there was a poor response for reflective learning. Reflective practices have irrefutable impact on undergraduate and postgraduate medical education. It inculcates the right attitude for life-long learning as it boosts the students SDL skills. Reflections being analytical, a process for critical thinking helps students on their learning goals and attitude and may serve to give feedback. There are positive evidence proclaiming that reflection, like any other skill can be taught and offer appropriate insight for betterment of future academic setting.^[33] Integrating reflective learning into one's own practice enhances patient care, bridges the theory-practice gap, helps in the resolution of practice-related problems and stimulation of critical thinking to foster changes in practice.^[34]

The medical practice and health policies are facing rapid changes from time to time. The medical education has to simultaneously absorb the new processes keeping in the pace of changes in standards, thereby leading to change in assessment methods. Based on modified blooms taxonomy, the assessment of newer competencies has to be woven.^[35,36] Previous assessment methods focussed more on cognitive domain compared to attitude and practice. The newer assessment techniques such as Mini CEX, DOPS, Multisource feedback, etc. have more potential to measure all three domains. Major proportion of our study participants felt that designing new assessment strategies as a difficult task as it needs a lot of groundwork to measure multiple integrated abilities. Many of the faculty opined that constructive feedback to the students allows retrospective self-reflection. Feedback acknowledges and reinforces exemplary behavior and highlights areas requiring improvement.

The MCI document has not clearly mentioned regarding the introduction of multiple choice questions (MCQs). It states "MCQs if used should not have more than 20% weightage." Few universities have preferred not to include MCQs for qualifying summative assessments. There is no uniform assessment method across the country. Only MCQ as the mode of assessment for postgraduate admission is against the skill-based training in the undergraduate curriculum. Medical students have already been trained in MCQs for National Eligibility Entrance Test and will have to prepare for postgraduate entrance examinations later. This will strongly skew the skill learning efforts of students in the undergraduate period.^[5,9]

Multiple departments working together to create and deliver integrated content is challenging and resistance to change by few inter- and intradepartmental faculty also

exists. There is likely to be a major difference in the method of implementation of CBME in various colleges as many of the staff have not undergone any formal training program.

More than four-fifths have felt that they needed frequent training programs to update themselves in CBME. Capacity building of faculty is the key determinant of successful implementation of curriculum. The Medical Council had been training thousands of medical teachers over the last few years through the basic course workshops and advance courses in medical education. Many medical colleges still have a substantial backlog of faculty awaiting such basic training.^[2] In many Indian medical colleges, the goals of CBME remain on paper. Teachers are mostly poorly trained to implement CBME, unless they themselves were a product of it. MCI regulations suggest the minimum staff requirements for each department which is interpreted as maximum requirements by all college administrators. The current staffing in medical colleges needs a revamp to enable successful CBME implementation.

Limitation and recommendation

The present study was planned to obtain the perception of medical faculty on the new curriculum all over India through google forms through the social media. Although the responses were obtained from faculty across 20 states, those who were self-motivated only responded to the questionnaire.

Conclusion

"Change is the only constant and everything needs to advance." So does medical education. Hybrid approach could be considered before the complete implementation of CBME. As per faculty suggestions, few reforms such as curtailing the duration of foundation course, complete sensitization of all academic staff by Faculty development programs, better synchronized vertical integration, increasing the strength of faculty in each department and setting up infrastructure/adequate workforce training for skills laboratory can be undertaken for a smooth and successful transition from an existing traditional curriculum to CBME.

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Conflicts of interest

There are no conflicts of interest.

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