ORIGINAL ARTICLE

Strength weakness opportunities challenge analysis of implementing competency-based medical education curriculum: Perspectives from anatomy specialty

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Abstract

Background: Delivery of quality healthcare to meet societal needs begins with robust medical education training of health professionals. Implementation of Competency-based Medical Education (CBME) was one such step by the Medical Council of India (MCI) in sculpting an Indian Medical Graduate (IMG). India implemented the CBME from its 2019-2020 batch of medical undergraduates. *Aim and objectives:* This study was to understand and analyze the Strengths, Weaknesses, Opportunities, and Challenges (SWOC) involved in implementing CBME in the middle of the academic year in the Anatomy specialty. *Material and Methods:* A convenience sample of 95 anatomy faculty members was invited to participate in the study by email from the harvested list of emails from institutional websites. A Google form of a self-structured pre-validated questionnaire was used as the study tool. The perceptions regarding the CBME curriculum and its implementation were obtained. The SWOC of CBME implementation in the anatomy specialty were deduced by mixed method analysis. *Results:* By voluntary response sampling method, 42 faculty members responded. Initiating the faculty development programs and revising the curriculum were perceived as strengths. A weakness was a need for more understanding of the tools and materials, such as guidebooks and competencies framework. The responders thought that the CBME had provided opportunities for their professional development. Still, the deficiency of the workforce, the poor documentation, and the lack of inter-departmental coordination were voiced as the main challenges that needed to be addressed to implement CBME effectively. *Conclusion:* The faculty considered implementing the CBME as an avenue for learning and growth. An ethos of collaboration, resource augmentation, and support is required to ensure productive CBME implementation. There is a need for improved quality of training material. Inclusive capacity building and training of all faculty is essential to achieving the intended objectives of CBME implementation.

Keywords: Competency, Medical Education, Medical graduate, Anatomy, Curriculum

Introduction

Competency-Based Medical Education (CBME) is an outcome-based approach designed, implemented, evaluated, and assessed based on the framework of competencies [1]. The CBME curriculum, which includes new components of pedagogy like aligned and integrated lectures, Early Clinical Exposure (ECE), Self-Directed Learning (SDL), and a month-long foundation course, was introduced for the 2019-2020 batch of first-year medical undergraduates. Reflection was introduced as a primary tool in continuous formative assessment [1].

To implement this change in curriculum, the Medical Council of India (MCI) rolled out capacity building in phases [2]. The faculty training encompasses sensitization and training of faculty across the country, sensitization of students, structuring of curriculum, and formulation of defined entrusted professional and programmatic activities. Upgrading of infrastructure and different learning resources is mandatory [3-4].

For accomplishing the mentioned prerequisites, the training programs such as Curriculum Implementation Support Program (CISP), Revised Basic Course Workshop in Medical Education (RBCW), Attitude, Ethics, and Communication (AETCOM) programs were implemented under the Medical Educational Unit (MEU) of every institution for a successful CBME implementation [5]. The newer tools like the CBME manual and logbook guided the implementation of the curriculum [6].

MEU of each medical college has formed a continuous first-line support system for implementing CBME. Each MEU has trained all teaching faculty in their respective institution in a time-bound, outcome-based method. Explicit knowledge regarding each component of CBME, such as vertical and horizontal integration, different pedagogical methods, and assessment formats, will help to successfully implement the curricular program [7]. The study aims to understand and analyze the Strengths, Weaknesses, Opportunities, and Challenges (SWOC) involved in implementing CBME in the context of anatomy specialty in the mid-year of implementation.

Material and Methods

Study setting

The study is an interim observation study following the implementation of the CBME curriculum. The study obtained clearance from Institutional Ethics Committee (IEC/Pharmac/53/20 dated 13/03/2020) before the commencement of the study.

Data collection and sampling

Emails of 95 anatomy faculty members were retrieved from institutional websites from 50 medical institutions in south India without any further sampling. These 95 anatomy faculty members formed the convenience sample for this study and received the study tool questionnaire via Google Forms, which needed a response within a week. The investigators sent a reminder email seven days after the first email. The written informed consent was incorporated along with the Google form to be filled out by the participants.

Study tool

A focus group discussion among the study investigators resulted in four major areas that needed exploration for this SWOC study. The emergent areas for investigation were as follows: 1. functionality of MEU and usefulness of its training program, 2. understanding tools of CBME implementation, 3. implementation of advocated pedagogical methods, and 4. measures for the implementation outcomes. The study tool was developed based on the details shown in Table 1. A final structured questionnaire consisting of 43 items was developed, as given in Table 2, following the content validation process conducted by three Medical Education Training (MET) faculty members independent of the study group.

Table 1: Details obtained from respondents by the study tool questionnaire

The study tool sections	Details probed
Demographic data	• Respondent faculty member's designation • Duration of teaching experience • Number of students per year • The available number of qualified teaching faculty
Functionality of MEU & usefulness of its training program- 8 items	• Respondent's involvement with MEU • Their rating of the level of functioning of their MEU • The number of medical education technology (MET) trained faculty members in the respondent's department • Perceived usefulness of the MCI-mandated training programs using a rating scale • The impact of those programs on the effective conduct of CBME sessions • The role of their institutional MEU in implementing CBME • Suggestions for improving the functionality of MEU concerning the CMBE curriculum
Understanding tools of CBME implementation	• Rating the usefulness of the CBME manual provided by MCI, mentioning areas in the manual that need improvement • Perceived impact of foundation course upon the effective implementation of CBME curriculum • Self-rated their level of understanding of alignment and integration and awareness about core competencies in anatomy with the difficulty faced during the process • Efforts and difficulties in successfully implementing CBME
Implementing advocated pedagogical methods	• Respondents' awareness of different pedagogical methods and their assessment in the CBME curriculum • Listing the topics in anatomy along with challenges they encountered in materializing sessions of integration, ECE, and SDL • Inquired about the presence of a skills lab in the respondents' institute • In case of the absence of such a skills lab, respondents were asked about the solutions they used to overcome this specific lacuna
Measure the outcomes of CBME implementation	• Self-rate their awareness of different assessment tools introduced in the CBME curriculum • Opinions about using a logbook to monitor student progression • Opinions about apt tools for assessing student reflection • The respondents were asked to write about challenges faced when working towards implementing the CBME curriculum in their respective departments

Table 2: Distribution pattern of items in the study questionnaire

Section Description	Number of items			Total items
	Multiple options	Rating scale	Open-ended	
Demographic data	4	-	3	7
Functionality of MEU & usefulness of its training program	4	2	2	8
Understanding tools of CBME implementation	3	6	2	11
Implementation of advocated pedagogical methods	4	1	7	12
Evaluation measures for outcomes of implementation	2	1	2	5

Study analysis

The multiple option and rating items were analyzed descriptively and open-ended using thematic analysis with deductive coding of the answers. The SWOC faced by these respondents during CBME implementation were deduced independently by three investigators.

Results

Demographic data

Forty-two faculty members responded out of the emailed 95 anatomy faculty members, resulting in a calculated response rate of 44.2%. The distribution of responders based on their hierarchical positions revealed that among the participants, 19 (45.9%) held the position of professor, 9 (18.2%) were associate professors, and 13 (27.3%) were assistant professors. The average teaching experience in years among the respondents was 7.8 years. The average number of qualified anatomy faculty members in the respondents' departments was four. Student intake per year in the respondents' departments were 150.

Functionality of MEU and usefulness of its training program

Fifty percent of the respondents' departments had 2-4 MET-trained faculty members. Greater than four and less than 2 MET-trained faculty existed in 18.2% and 31.8% of respondents' departments, respectively. On enquiring whether the respondents were actively involved in MEU activities, 59.1% answered affirmatively, while 40.9% answered negatively. The percentage of faculty members who received training in the CISP, RBCW, and AETCOM training programs was 37.5%, 27.5%, and 22.5%, respectively, and 12.5% of faculty were untrained. Among those MET-trained respondents, 52.9% felt the training was extremely useful, and 47% felt useful. During analyses, two themes emerged for considering the training programs extremely useful, as seen in Figure 1. Respondents perceived MEUs as disseminators of knowledge and capacity builders. About 72.7% of respondents gave the functionality level of respective MEU the maximum point in a 5-point Likert scale rating. Majority (77.3%) thought that the MEU support

helped them effectively implement CBME, while 13.6% needed clarification on MEU's role at the departmental level. Respondents identified three themes in response to the areas where MEU could support their departments towards attaining excellence, as seen in Figure 1. MEU's proactive role in capacity building and establishing a support framework is vital for CBME implementation.

Understanding tools of CBME implementation

Majority (86.4%) of the respondents considered implementing a month-long structured foundation course for the students to have resulted in achieving an effective intended outcome. Questions about understanding the MCI CBME manual showed that 95.5% of respondents provided a positive assertion of understanding. The assessment and competencies sections of the MCI manual need further improvement. More in-depth information on assessment methods and revision of certifiable core competencies topped the suggestions for improvement, as shown in Figure 2. Narrowing the scope towards anatomy, 45.5% of respondents wanted improvement over the existing core competencies.

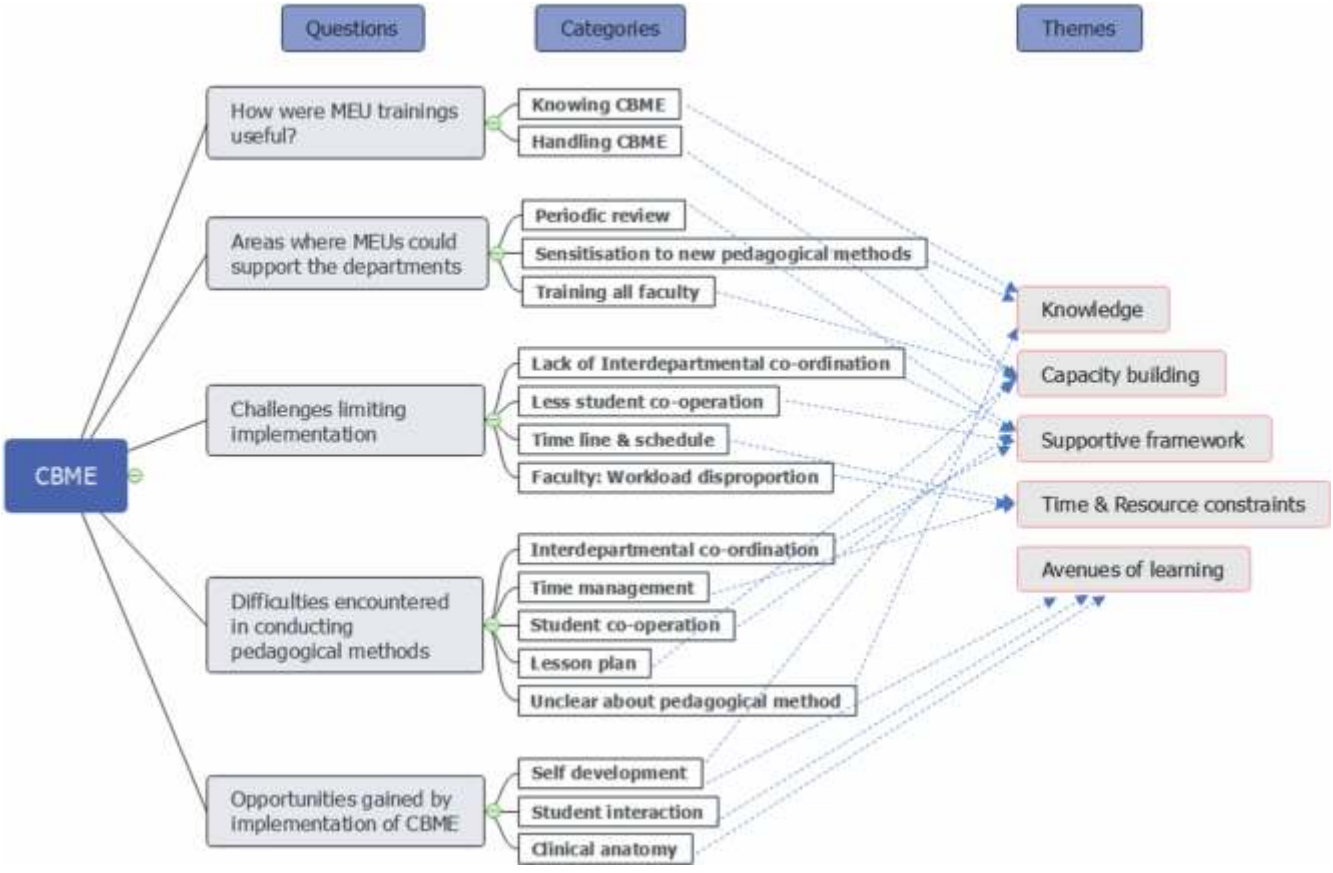

Figure 1: Emergent themes from responses of open-ended questions

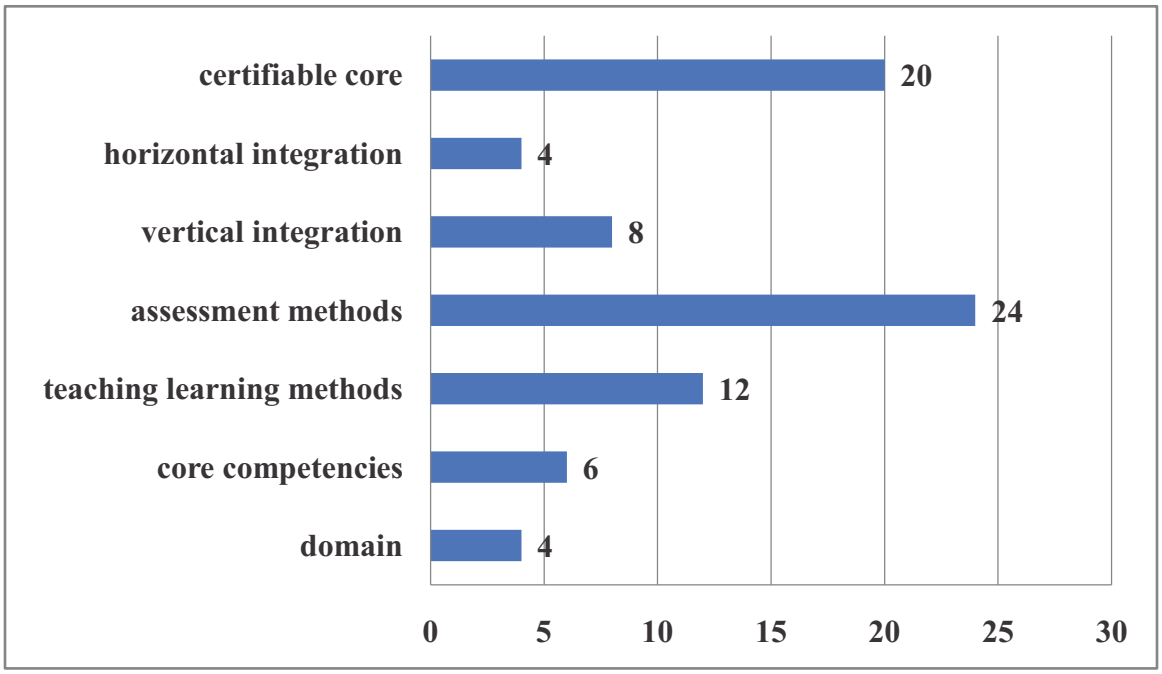

Figure 2: Categorization of sections suggested to be improved in CBME manual

When asked about the self-reported awareness and implementation of CBME under different dimensions, 93.13 % of faculty gave a three or above, in a Likert rating from 1 to 5, where one was the least, and 5 was the highest. The best-understood dimension of implementation was the alignment of topics. Comparatively, there is lesser self-reported awareness and understanding, as shown in Table 3, of the level of alignment in the department and the awareness of certifiable core topics. The challenges in implementing CBME, as in Figure 1, were the need for interdepartmental coordination, student participation, time constraints, and workforce shortage. Despite these challenges and limitations, 50% reported that they had exceeded expected efforts, 40.9% had made expected efforts, and 10% had yet to make any efforts in implementing the CBME curriculum in anatomy.

Implementation of advocated pedagogical methods

The self-reported level of awareness about different pedagogical methods showed that most respondents were aware of ECE. On the contrary, an overall lower self-rating for assessment methods, as in Figure 3, was obtained. The percentage of respondents who conducted the recommended pedagogical methods like ECE, SDL, and Integrated sessions were 95.5%, 95.5%, and 77.3%, respectively. The respondents encountered perceived hindrances while executing recommended pedagogical methods. The main reasons can be categorized as the need for CBME-relevant knowledge and capacity building, management of time and resources, and a supportive framework, as observed in Figure 1.

As a tool and alternate method of clinical exposure, the curriculum recommends the availability and usage of the simulation/skills lab. Only 40.9% of respondents positively affirmed the existence of a skills lab in their institution, 36.4% did not have a skills lab, and 22.7% were unaware of whether the institution had one. Encouraging students on cadaveric dissection, demonstrations, model making, and sending students to other institutions for clinical and lab visits were mentioned as the alternatives used by faculties to overcome the challenges of not having skills labs in their institutions. Different pedagogical methods other than didactic lectures utilized by faculties in implementing CBME showed different methods like small group discussions, seminars, symposiums, case scenarios, role plays, flipped classrooms, video-assisted lectures, and live surgical video conferences.

Table 3: Awareness and understanding of implementation of CBME

Questions	Percentage response for each scale				
	1	2	3	4	5
Awareness of certifiable core topics	4.5%	4.5%	40.9%	31.8%	18.2%
Understanding of alignment of topics	0	0	22.7%	50%	27.3%
Level of alignment done in the department	4.5%	9.1%	40.9%	36.4%	9%
Level of implementation of the CBME program	0	4.5%	22.7%	59%	13.6%

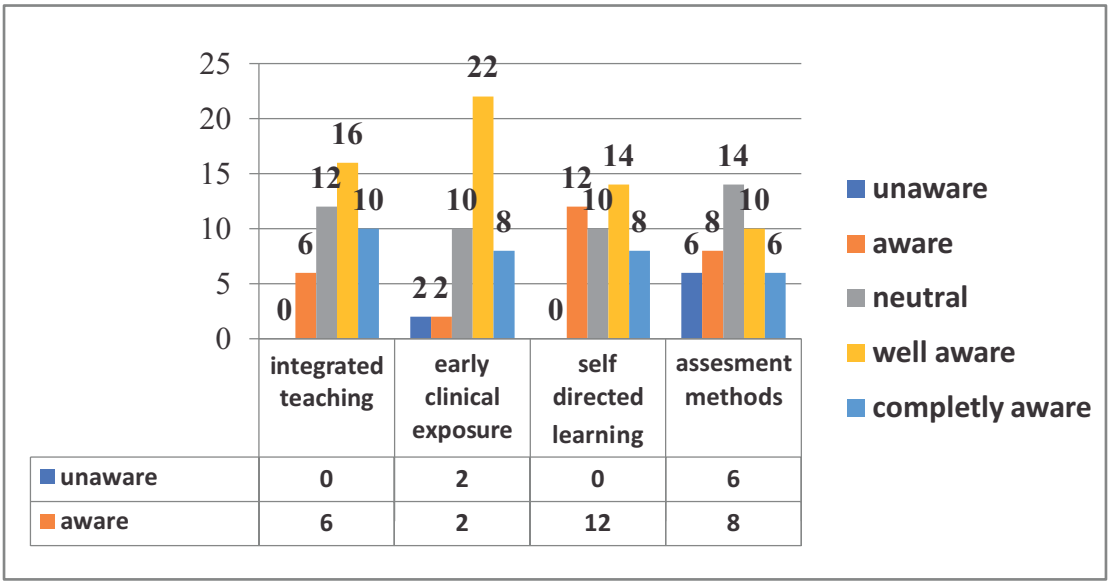

Figure 3: Awareness level of the different pedagogical methods and their assessment

Evaluation measures for outcomes of implementation

As this is an interim study in the middle of the academic year, the focus was on knowing whether a logbook served its intended purpose in monitoring learner progression in the CBME curriculum and it was found that 68.2% of the respondents were unsure about the effectiveness of the logbook in monitoring CBME progression. Questions regarding the level of awareness about the newer recommended assessment pattern showed that 13.6% were unaware of it. Inquiry into different assessment tools used by respondents elicited answers like one-to-one interaction, online and offline feedback, and keyword assessment. Contrary to this, a few respondents replied that they were unaware and never used other assessment tools besides routine summative examinations. Respondents wrote about the varied opportunities they gained as a part of this CBME curriculum, and self-development emerged as a frequent response, as given in Figure 1. Faculty perceived the CBME implementation and associated activities as opportunities that pave the way for learning. Based on the responses, Table 4 collated the SWOC in implementing CBME halfway through the academic year.

Discussion

The CBME attempts to achieve a healthcare system where medical graduates are clinicians, leaders, professionals, communicators, and lifelong learners. In addition, they are to exhibit explicit AETCOM skills [7, 8]. Implementing the CBME curriculum from the undergraduate years will lead to a progressive change in medical education and consequently improve the healthcare system and patient welfare [9, 10].

Table 4: SWOC analysis of implementation of the CBME

Strength	• Initiation of increased faculty development programs • Revising the curriculum at every level • Innovate when deficient
Weakness	• Inability to understand the tools and material hindering implementation • Limited clarity in understanding the given competencies • Less sensitization to newer methods of pedagogy • Limited support from MEU
Opportunities	• Continuous self and professional development • Increased one-to-one interaction with the students • Experimenting and implementing different types of teaching learning methods
Challenges	• Compensate the deficiency of the workforce & resource • Practicing documentation like lesson planning • Coordination with the other departments • Inculcating the positive learning behaviour • Scheduling and managing time • Limited awareness about assessment tools and methods of CBME

This study attempted to collate the opinions and suggestions from anatomy faculty actively involved in CBME implementation in defined geographical regions of the country through a questionnaire. The limited response rate received could be ascribed to the survey's email mode and the survey tool's lengthiness. Documented reports of reduced response rates with email surveys support our observation [11]. In the multimodal survey scenario, even to achieve a 25-30% response rate, the researcher should resort to reinforcement or follow-up emails to the study participants [11, 12]. Though the sample size was limited to 42 anatomy faculty, they provided insights into 50 regional medical institutions. Our limited response rate is fair enough to arrive at a study conclusion.

The analysis of demographic data provided a comprehensive idea about a few of our sample parameters. For 150 annual student intakes, the minimal recommendation mandates six anatomy-qualified faculty, establishing a student-faculty ratio of 25:1 [13]. A comparison of the percentage of faculty members who received training in different MET programs reveals that in the previous study, the rates were as follows: RBCW - 44.8%, CISP - 39.7%, and AETCOM - 24.1%. The rates of the present study were slightly lower, with RBCW at 37.5%, CISP at 27.5%, and AETCOM at 22.5% [7]. This faculty-workload disproportion has been brought out as a challenge by the participants and might negatively impact the effective implementation of the CBME curriculum in the Anatomy specialty. The experience and hierarchy level of respondents showed that most faculty with nearly eight years of experience or in the position of professor had responded maximally. This study's investigators consider this a pertinent factor in analyzing and inferring from their responses.

The MCI Act of 1999 states that MEUs should exist in every medical college, and this has led to an increase in the number of MEUs all over the country [13]. Even though the MCI has insisted on training all the medical faculty members in MET, we still witness a gross difference in the percentage of trained faculty members [14]. Capacity building has been an essential factor that underlies the implementation of CBME. Hence, the focus of the MEU should be on training adequate faculty to implement the intended curriculum.

Despite the observed gap between the expected and available number of MET-trained faculty, the different faculty development program initiatives were the strengths in implementing CBME, as seen in Table 3.

Implementing CBME necessitates understanding the tools and technologies used in the process. Three volume manuals provided by MCI to ease the process are an agglomerate of competencies, domains, core topics, teaching-learning methods, assessment strategy, certifiable core competencies, and topics for integration [6]. Studies have documented that implementing the CBME presented the most significant challenges regarding alignment and integration, which mirrors our study findings [3, 7]. This study observed the emergence of an understanding-implementation gap, with 75% of the responders reporting understanding of the document against only a few who reported effective implementation. Difficulties in inter-departmental coordination were the prime limiting factor. The current study evidences the need to emphasize a supportive environment in the practice of CBME.

The supportive framework would involve all stakeholders, including the MEU, administration, faculty members, and learners. This supportive framework will pave the way for the seamless adoption and implementation of the CBME to achieve the intended outcomes. Meanwhile, a lack of flexibility among faculty members was also cited as the reason for the occurrence of this gap [9, 15].

On comparing pedagogical methods, ECE and integrated teaching were found to have a better understanding than SDL. ECE sessions encourage obliterating the distinction between the pre-clinical and the clinical fraternities of the Indian curriculum system [16]. The objectives of the ECE prioritize the relevance of the basic sciences in diagnosis, patient care, and treatment and the relatedness to patients' experiences as a motivation to learn among first-year students [17]. Despite limiting factors, around 95.5% of the responders have conducted an ECE session. Similar studies, in addition to the point mentioned above, included managing the workforce and deriving objectives as barriers to conducting ECE [18, 19].

SDL transfers skills needed for professional practice, making a learner a competent lifelong learner [20]. A meta-analysis of SDL methods proved improvement in cognitive domains compared to the traditional methods [21]. In our study, 95.5% of the responders conducted an SDL session despite needing help understanding the proper technique. MEUs need to work on this weak link to attain the expected.

Many studies cited the skill teaching and skills lab as a similar alternative for clinical experience and teaching [22, 23]. The commitment to simulation technology and building a skill lab is an essential commodity for medical education [24]. This study's observation of converting the challenge caused by the absence of a skills lab to an opportunity to innovate shows the prevalence of positive attitudes among the faculty. This strength needs to be capitalized on by the MEUs for CBME implementation. Interactive teaching methods like group discussion, flipped classrooms, roleplay, and case scenarios have increased learning, satisfaction, and interaction between learners. However, these methods found limited utilization due to the need for an intense workforce for session development [25].

Logbooks verify the learner's progression, documenting the acquisition of requisite knowledge, skill, attitude, and competencies [26]. The assessment of the components of the CBME curriculum becomes essential as it reflects the impact of the practiced modalities to achieve them. The assessment pattern of CBME includes the traditional summative type and the frequent formative assessments, which assess all the domains [7]. A 360^0 assessment at the workplace with robust criteria would provide the needed accountability with CBME implementation [3, 27]. As observed in our study compared to the previous report, the limited awareness of assessment components might be the biggest hurdle in implementing the CBME curriculum [7]. Identifying competencies, content identification, program organization, and assessment planning and program evaluation are the three robust pillars upon which implementation of CBME stands in the Indian context [28]. Preparing the stakeholders for the implementation was proposed as the additional step needed to implement CBME successfully. Adequate training and a continuous stakeholder support system would ensure a smooth transition from the

traditional to the CBME curriculum. Successful implementation of CBME needs the sensitization of students and their informed involvement [29]. The role of institutions is considerable, with the necessity for additional resources like infrastructure, material, and workforce for the successful implementation of CBME [30].

Conclusion

The strengths of CBME implementation need continuous encouragement to consolidate progress achieved so far. A constant support system by MEU could address the perceived difficulties and convert these weaknesses into opportunities. This SWOC analysis reflects the availability of opportunities to bridge the gap between the expected and existing outcomes of implementing the CBME curriculum. The commitment of every anatomy faculty to work on every level, from coordinating, framing, and planning to implementation of CBME, should be obtained to meet the expected outcome by converting weaknesses and challenges into opportunities and strengths.

Recommendations

These are the recommendations proposed to handle the challenges and progress toward successful implementation: 1. Increasing student: faculty ratio in anatomy; 2. Making improvements in the core competencies for anatomy; 3. Providing more training in assessment methods; 4. Sensitizing all stakeholders, including students, regarding their role in this curriculum; 5. Capacity building in all aspects of CBME.

Limitations

The limited sample size and the contextual restriction of the samples limit the generalizability of our study findings.

References

1. Frank JR, Snell LS, Cate OT, Holmboe ES, Carraccio C, Swing SR, *et al*. Competency-based medical education: theory to practice. *Med Teach* 2010; 32(8):638-645.
2. Shrivastava SR, Shrivastava PS. Competency-based medical education for undergraduates in India: Strengths, weaknesses, opportunities, challenges analysis and the way forward. *Mustansiriya Med J* 2020; 19(1):37-39.
3. Shah N, Desai C, Jorwekar G, Badyal D, Singh T. Competency-based medical education: An overview and application in pharmacology. *Indian J Pharmacol* 2016; 48(Suppl 1):S5-S9.
4. Caverzagie KJ, Nousiainen MT, Ferguson PC, Ten CO, Ross S, Harris KA, *et al*. Overarching challenges to the implementation of competency-based medical education. *Med Teach* 2017; 39(6):588-593.
5. Ananthakrishnan N. Competency based undergraduate curriculum for the Indian Medical Graduate, the new MCI curricular document: Positives and areas of concern. *J Basic Clin Appl Health Sci* 2018; 1(1):34-42.
6. Accessed on 1st Jun 2020. UG-Curriculum-Vol-I.pdf. Available from: https://www.mciindia.org/CMS/wp-content/uploads/2020/01/UG-Curriculum-Vol-I.pdf
7. Rustagi SM, Mohan C, Verma N, Nair BT. Competency-based medical education: The perceptions of faculty. *J Med Acad* 2019; 2(1):2.
8. Srinivas DK, Adkoli BV. Faculty development in medical education in India: the need of the day. *Al Ameen J Med Sci* 2009; 2(1):6-13.
9. Nousiainen MT, Caverzagie KJ, Ferguson PC, Frank JR; ICBME Collaborators. Implementing competency-based medical education: What changes in curricular structure and processes are needed? *Med Teach* 2017; 39(6):594-598.
10. Kruse J. Social accountability across the continuum of medical education: a call for common missions for professional, accreditation, certification, and licensure organizations. *Fam Med* 2013; 45(3):208-211.
11. Sheehan KB. E-mail survey response rates: A review. *JCMC* 2001; 6(2):621.

12. Yun GW, Trumbo CW. Comparative response to a survey executed by post, e-mail, & web form. *JCMC* 2000; 6(1):613.
13. Medical Council of India. Minimum standard requirements for the medical college for 150 admissions annually regulations. New Delhi 1999. https://www.mciindia.org/documents/informationDesk/Minimum%20Standard%20Requirements%20for%20150%20Admissions.pdf.
14. Zodpey S, Sharma A, Zahiruddin QS, Gaidhane A, Shrikhande S. Faculty development programs for medical teachers in India. *J Adv Med Educ Prof.* 2016; 4(2):97-101.
15. Shrivastava S, Shrivastava P. Competency-based medical education and its need in the delivery of medical education in India. *Indian J Health Sci Biomed Res* 2019; 12(3):262-3.
16. Rawekar A, Jagzape A, Srivastava T, Gotarkar S. Skill learning through early clinical exposure: An experience of Indian Medical School. *J Clin Diagn Res* 2016; 10(1): JC01-JC04.
17. Accessed on Jul 2020. Early_Clinical_Exposure-MBBS-07.08.2019.pdf. Available from: https://www.mciindia.org/CMS/wp-content/uploads/2020/01/Early_Clinical_Exposure-MBBS-07.08.2019.pdf.
18. Shah C. Early clinical exposure-Why and how? *J Educ Tech Health Sci* 2018; 5(1):2-7.
19. Vernon DT. Attitudes and opinions of faculty tutors about problem-based learning. *Acad Med* 1995;70(3): 216-23
20. Schmidt HG. Assumptions underlying self-directed learning may be false. *Med Edu* 2000; 34(4):243-245.
21. Murad MH, Coto-Yglesias F, Varkey P, Prokop LJ, Murad AL. The effectiveness of self-directed learning in health professions education: a systematic review. *Med Edu* 2010; 44(11):1057-1068.
22. Khoshrang H, Salari A, Dadgaran I, Moaddab F, Rouh-Balasii L, Pourkazemi I. Quality of education provided at the clinical skills lab from medical students' viewpoints in Guilan University of Medical Sciences. *Res Med Edu* 2016; 8(2):77-83.
23. Herrmann-Werner A, Nikendei C, Keifenheim K, Bosse HM, Lund F, Wagner R, *et al*. "Best practice" skills lab training vs. a "see one, do one" approach in undergraduate medical education: an RCT on students' long-term ability to perform procedural clinical skills. *PLoS One* 2013; 8(9):e76354.
24. Qayumi K, Vancouver. Surgical skills lab: a hub for competency training. *J Invest Surg* 2010; 23(1):48-56.
25. Karimi MH, Rad M, Bakhshi M. Do the new methods of teaching in medical education have adequate efficacy?: A systematic review. *Stride Dev Med Educ* 2013; 10(2):271-280.
26. Accessed on Jul 2020. Logbook-Guidelines_17.01.2020-1.pdf. Available from: https://www.mciindia.org/CMS/wp-content/uploads/2020/01/Logbook-Guidelines_17.01.2020-1.pdf
27. Telang A, Rathod S, Supe A, Nebhinani N, Mathai S. Faculty views on competency-based medical education during mentoring and learning web sessions: An observational study. *J Educ Tech Health Sci* 2017; 4(1):9-13.
28. Modi JN, Gupta P, Singh T. Competency-based medical education, entrustment and assessment. *Indian Pediatr* 2015; 52(5):413-20
29. Karunakaran I, Sukhumar GT, Arun GT. Redefining the role of a learner in the competency-based medical curriculum. *Korean J Med Edu* 2022;34(4):337-340.
30. Gade S & Mishra V. Impact Analysis of the National Faculty Development Program for Medical Teachers: A Way Forward. *J Krishna Inst Med Sci* 2020; 9(3):81-90.

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