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Research Article

FACULTY PERSPECTIVES ON THE IMPLEMENTATION OF COMPETENCY-BASED MEDICAL EDUCATION AT A TERTIARY CARE HOSPITAL IN INDIA

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ABSTRACT

Objective: The objective of this study was to assess the perspectives of faculty members at Andaman and Nicobar Islands Institute of Medical Sciences (ANIIMS), Port Blair, on the implementation of CBME.

Methods: Forty-three faculty members had participated in a cross-sectional study at ANIIMS, Port Blair. A structured and validated questionnaire from previous CBME studies in India was utilized, featuring both closed-ended (five-point Likert scale) and open-ended questions. The questionnaire assessed faculty preparedness, perspectives, and challenges in implementing CBME, covering domains such as familiarity with CBME, training levels, resource constraints, and perceived bottlenecks. It was administered through Google forms, shared in person and through electronic media. Data were analyzed using SPSS version 27, with descriptive statistics for categorical variables and subgroup comparisons performed using the Chi-square test at a significance level of $p<0.05$.

Results: Most respondents were aware of the components of CBME (76.74%) and have participated in CBME-related training (69.77%). However, only 60.47% of respondents said that they were confident in their ability to teach in small groups, and only 51.16% said that they were familiar with assessment tools. Lack of administrative support (76.74%), time limits for defining specific learning objectives (76.74%), and a lack of faculty strength (88.37%) were the biggest obstacles. There were also logistical issues with interdepartmental cooperation (74.42%) and assessment (67.44%). Feedback systems were found to be in need of improvement, with 81.40% of respondents saying they needed more instruction on how to give constructive criticism.

Conclusion: Although ANIIMS faculty acknowledges CBME as a beneficial reform, they have major obstacles in the areas of personnel, training, and logistical assistance. To maximize CBME implementation and delivery, these weaknesses must be filled through focused faculty development initiatives, administrative actions, and resource distribution.

Keywords: Competency-based medical education, Faculty perspectives, Challenges, Medical curriculum, Feedback mechanisms.

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INTRODUCTION

There is a paradigm shift toward Competency-Based Medical Education (CBME) which denotes a major transformation in medical education system of India. In 2019, the National Medical Commission (NMC) introduced CBME and its goal is to produce proficient Indian Medical Graduates (IMGs). The IMGs should be excellent in knowledge, attitude, behavior, and must be a skilled personnel in communication, ethics, and professionalism [1]. This students' cantered curriculum necessitates the need of various competencies acquired through small group teaching, integrated teaching, early clinical exposure, self-directed learning, and continuous formative assessments [2].

Substantial innovation in curricular designs, teaching learning techniques, and assessment methods, are essential for the successful implementation of CBME. The teaching faculty is required to play a significant role as a planner, mentor, facilitator, and assessor. However, the implementation of the new CBME curriculum has foreseen a tremendous spotted challenges such as inadequate planning, limitations in resource faculty and their training for new curricular trends, and time constraints [3,4]. Studies have also highlighted the requirement of faculty preparedness and planned implementation of several components of CBME curriculum and their perceptions of the new curriculum [5].

The Andaman and Nicobar Islands Institute of Medical Sciences (ANIIMS) at Port Blair is a medical institution which serves a geographically isolated population. This premier institution which is the only tertiary care center has the unique responsibility of implementing CBME in a resource-constrained setting with limited faculty and infrastructure [6]. This particular institution offers optimized curriculum delivery to undergraduate medical students and is responsible for specific regional healthcare demands in the islands.

Globally, CBME has been implemented in various countries, including Canada, the United States, and the Netherlands, with notable success in improving the medical training outcomes. For instance, Canada pioneered CBME through the Royal College of Physicians and Surgeons' initiative, Competence by Design, which focuses on progression milestones and entrustable professional activities to ensure proficiency in clinical skills [7]. Similarly, the Accreditation Council for Graduate Medical Education in the United States adopted CBME principles to emphasize competency domains such as patient care, medical knowledge, and professionalism

[8]. In the Netherlands, CBME has been integrated with workplace-based assessments and longitudinal feedback, fostering reflective practice and continuous improvement [9]. These international experiences underscore the importance of structured implementation, faculty training, and resource optimization, which provide valuable lessons for contextualizing CBME in India.

To implement the transformative educational framework, the perspective of facilitators at ANIIMS is essential for identifying the specific challenges they meet. This present study aims to assess preparedness of faculty, explore the barriers to effective implementation, and suggest targeted strategies to improvise the curricular implementation at ANIIMS.

METHODS

This cross-sectional study was conducted at the ANIIMS, Port Blair, to assess the perspectives of faculty members on the implementation of the CBME curriculum. After obtaining the Institutional Human Ethics Committee (Approval Number: IHEC/04/2020), the present study was spanned from April to June 2023.

ANIIMS, a government medical institution, caters to the unique healthcare and educational needs of the Andaman and Nicobar Islands. The participants of the study were the teaching fraternities from all the departments of undergraduate medical education. Those who are willing to participate in the study and also those who showed involvement in implementing the newer innovations of CBME curriculum were chosen as the study participants. The undergraduate teachers with less than a year of teaching experience and or those not who are not directly involved in the curricular works were excluded from the study. All participants provided written informed consent before participating in the study.

A structured and validated questionnaire used in the previous studies on CBME implementation in India were utilized. The questionnaire was validated by one external and two internal experts in medical education. The questionnaire was given to five medical faculties for pilot testing and face validation. A five-point Likert-scale (closed-ended questions) and open-ended questions were created during data collection to evaluate the teacher's preparedness, faculty perspectives, and practical challenges in the curricular follow-up. The structured questionnaire domains covered were familiarity with CBME components, faculty training levels, constraints in the resources, and the perceived bottlenecks in CBME implementation. The questionnaire was uploaded as Google forms and circulated in person and through electronic social media such as Telegram, WhatsApp, and Mail ensuring the anonymity of participant's responses.

The data were analyzed and reviewed for completeness and entered Microsoft Excel for data processing. SPSS version 27 was used for statistical analysis. Descriptive statistics such as percentages were used to summarize categorical variables. Chi-square test was used for Subgroup comparisons keeping with significance level at $p<0.05$. The questions primarily ensured a clear evaluation of faculty perspectives, forming a background for targeted recommendations in enhancing the curricular implementation at ANIIMS.

RESULTS

The total respondents were 43 teaching faculty from ANIIMS working in clinical, preclinical, and paraclinical departments who are actively engaged in teaching undergraduate students of medical education. The current research aimed to assess the faculty perspectives on CBME implementation, throwing lights on their training, challenges faced, and resource and time constraints. The results of the current research revealed both the weakness and strengths in CBME adoption. It also offers some of the actionable solutions for improvising the implementation of the curriculum.

Training and awareness about CBME implementation

A majority of the participants (69.77%) confirmed that they have been a part of CBME-related faculty training programs and were aware about its fundamentals. The familiarity on newer curricular components was notably high, with 76.74% of the subjects expressing their awareness on its key domains. However, only 60.47% of the faculty expressed their confidence in conducting small group teaching and group discussions. Familiarity with assessment tools was relatively limited, with just over half (51.16%) of respondents expressing comfort with these tools, highlighting a gap in training.

Awareness on framing specific learning objectives (SLOs) and the knowledge on early clinical exposure were moderately high, with 65.12% and 60.47%, respectively. Nevertheless, the remaining proportions clearly denoted a need for adequate training support and faculty development programs (FDP) for a successful implementation of CBME (Table 1 and Fig. 1).

Challenges in CBME implementation

CBME delivery in medical education warrants several systemic and organizational frameworks. The most significant challenge was insufficient faculty strength, reported by 88.37% of respondents, emphasizing the pressing need for staffing augmentation. Time constraints for preparing SLOs were highlighted by 76.74% of the teaching fraternity, depicting the clerical works posed with the curriculum. Constraints in time and resources can stab the original goal of curriculum implementation.

Less understanding and meager support from the administrative side of the medical institution were considered as serious concern, with 76.74% of subjects idealizing it as a implementation barrier. Few other challenges are logistical issues in assessment techniques (67.44%) and inter-department collaboration (74.42%). Both of them are crucial for effective roll out of CBME. These are the practical challenges foreseen by institutions and the teaching fraternities (Table 2 and Fig. 2).

Assessment and feedback challenges in new curriculum

Assessment and feedback mechanisms are integral to CBME; yet, the study highlights significant gaps in these areas. A substantial proportion of faculty (81.40%) acknowledged the need for further training in providing constructive feedback to students. Constraints in recording the assessment and feedback log books were reported by 74.42%, denoting the practical burden of continuous assessment.

Table 1: Training and awareness about CBME implementation

Parameter	Agree		Neutral		Disagree	
	F	%	F	%	F	%
Attended CBME-related training	30	69.77	9	20.93	4	9.30
Awareness of CBME components	33	76.74	7	16.28	3	6.98
Confidence in small group teaching	26	60.47	13	30.23	4	9.30
Knowledge of framing specific objectives	28	65.12	9	20.93	6	13.95
Familiarity with assessment tools	22	51.16	13	30.23	8	18.60
Understanding of early clinical exposure	26	60.47	11	25.58	6	13.95

CBME: Competency-based medical education

About 65.12% of the participants highlighted the inadequate experience with Objective Structured Clinical Examinations (OSCEs), a cornerstone of CBME curriculum. Challenges in conducing and valuing the formative assessments were accepted by 76.74% of participants. About 83.72% of the faculty members realized the advantages of feedback processes, depicting a perfect discussion mechanism in an ideal manner for the best learning outcomes (Table 3 and Fig. 3).

The study emphasizes that the teaching fraternities at ANIIMS have a strong collective awareness of CBME, the practical barriers and lacunae in faculty training program hinder its expected implementation. These outcomes offer a background for targeted interventions to offer better CBME implementation and delivery.

DISCUSSION

The present study offers a strong insight into the teacher's perspectives on the adoption of the CBME curriculum at ANIIMS, Port Blair. The findings stay positive with the national studies that spots light on the resource constraints and the local barriers faced by medical institutions in implementing the CBME [1,2].

Most of the teaching faculties at ANIIMS had accepted that they have attended one of more faculty training programs and are conscious of newer CBME components. Of them, only 60.47% have expressed their confidence in conducting a session of small group teaching and faculty with awareness on assessment techniques was limited to 51.16%. The

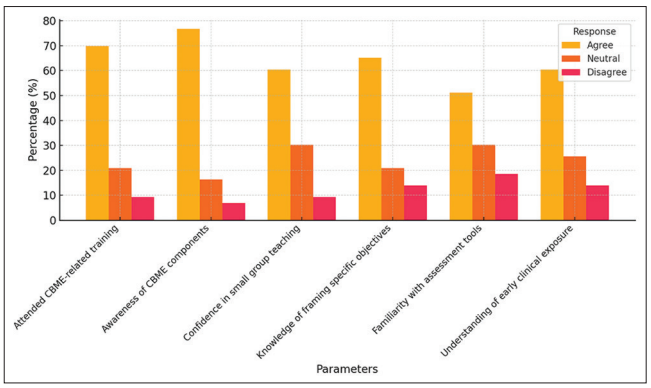

Fig. 1: Training and awareness about competency-based medical education implementation

above results denote the timely need for an effective and functional FDP frequently. The previous researches have highlighted the role of well planned, frequent and prompt workshops emphasizing on skill-based approaches, such as OSCE, early clinical exposure, formative assessments in improving the competency of faculty in teaching and learning techniques [3,4]. FDPs that align the skill-based training and practical reflection are essential in filling these lacunae [5,6].

Resource constraints have grown as the most foreseen challenge, with 88.37% of the faculty members emphasizing it as a main barrier. This view is similar with the previous studies indicating that many medica colleges are operating with minimal faculty strength required for CBME adoption [10]. The intensive workload associated with CBME, particularly the framing of SLOs and conducting formative assessments, adds to this burden. Salvation of the above said bottle necks necessitate not only recruiting new faculty but also reallocating the workload efficiently [11].

Institutional barriers, including the lack of organizational support and inter-departmental collaboration, were also essential, with 76.74% and 74.42% of the participants feeling these challenges, respectively. The perfect implementation of CBME depends on the efficient teamwork and organizational policies that promote collaboration and provide logistical support. The study fosters a supportive environment and provides sufficient resources effectively to improve CBME implementation [12,13].

One of the significant components of the new curriculum is giving feedback after the formative assessments which are conducted periodically. About 83.72% of the acknowledged the relevance of feedback processes, while 81.40% of them had highlighted the necessity for the faculty development and training program in giving constructive feedback. Challenges in conducting formative assessments, skill training sessions with certification of skills, and maintaining feedback logs emphasize the corrective approaches to the attainment of goal of Indian medical graduate. Prior researches have shown that structured training on feedback methods, along with tools like OSCEs, can improve teacher's confidence and efficiency [14]. Similar findings were observed in other studies done in India [2,15,16].

Although the teaching fraternity at ANIIMS realize the new curriculum as a valuable reform, certain barriers such as insufficient staffing, less faculty training issues, and time constraints hinder inefficient adoption. Addressing the foresaid issues by the targeted faculty training and development programs with, enhanced organizational support, and fully planned processes can improvise the new CBME adoption. The

Table 2: Challenges in CBME implementation

Challenge	Agree		Neutral		Disagree	
	F	%	F	%	F	%
Insufficient faculty strength	38	88.37	2	4.65	4	9.30
Time constraints for SLOs	33	76.74	7	16.28	3	6.98
Logistical challenges in assessment	29	67.44	9	20.93	5	11.63
Difficulty in inter-department collaboration	32	74.42	9	20.93	2	4.65
Lack of administrative support	33	76.74	6	13.95	4	9.30

CBME: Competency-based medical education, SLO: Specific learning objectives

Table 3: Feedback and assessment challenges in CBME

Feedback and assessment challenges	Agree		Neutral		Disagree	
	F	%	F	%	F	%
Need for training in constructive feedback	35	81.40	3	6.98	5	11.63
Difficulty in maintaining feedback logs	32	74.42	9	20.93	2	4.65
Inadequate experience with OSCEs	28	65.12	9	20.93	6	13.95
Challenges in formative assessments	33	76.74	6	13.95	4	9.30
Perceived relevance of feedback processes	36	83.72	3	6.98	4	9.30

OSCE: Objective-structured clinical examinations

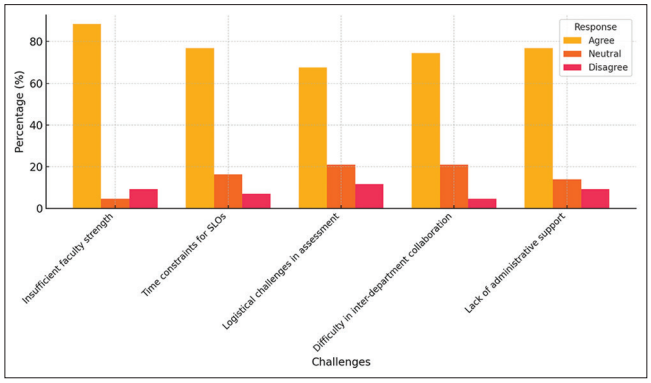

Fig. 2: Challenges in competency-based medical education implementation

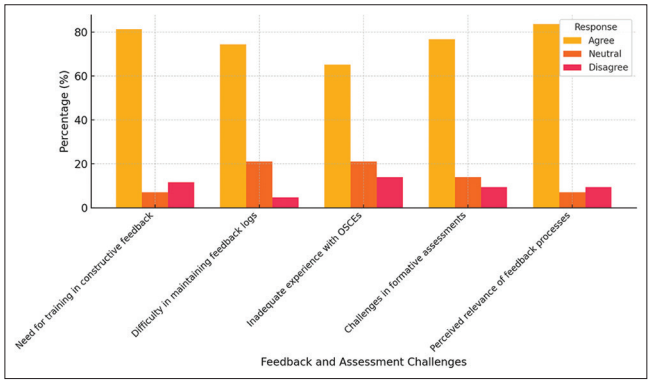

Fig. 3: Feedback and assessment challenges in competency-based medical education

present study contributes to the growing evidence and need for capacity building and institutional reforms to optimize the new curricular implementation in the medical colleges.

CONCLUSION

The current research spotlights both the positive components and the challenges faced while adopting the CBME at ANIIMS, Port Blair. Most of the teachers expressed their awareness on the significant components of CBME, lacunae in faculty training programs, insufficient staffing and confidence levels can hinder its efficient implementation. Insufficient faculty members, time-intensive demands, and logistical barriers such as administrative support and inter-departmental collaboration are the main challenging domains seen in this.

In spite of all the challenges, the study underscores a strong interest among faculty in improving feedback mechanisms and assessment strategies, reflecting their commitment to adapting to CBME's requirements. Addressing these issues through targeted interventions such as longitudinal training programs, enhanced administrative support, and strategic resource allocation is essential.

By fostering a supportive institutional environment and concentrating on skill training for faculty members, ANIIMS can facilitate the new curricular implementation and serve as a model for other institutions for facing similar challenges. These findings contribute to the greater discourse on strengthening the CBME in resource-constrained settings, paving the way for producing a skilled an Indian Medical Graduates equipped to fulfill the growing demands of the health care system.

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CONFLICTS OF INTEREST

Nil.

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