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Perception of Stakeholders on the Implementation of Integrated Teaching Module in a Medical College at Puducherry – Cross-sectional study

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ABSTRACT

(i) **Background & Objectives:** Integrated teaching is an educational approach that combines various disciplines of medicine, into a cohesive curriculum which fosters critical thinking, problem-solving skills, and prepares students for the complexities of healthcare practice. This study was conducted to assess the perception of Faculty and Final MBBS Part – I students on the implementation of Integrated Teaching Module as a part of their teaching curriculum.

(ii) **Methods**: A Cross-sectional study was conducted among 47 Faculty and 127 Final MBBS Part – I students via separate Google forms after approval from Scientific Research Committee and Institutional Ethical Committee.

(iii) **Results**: Total of 47 Faculty responses in which 76.6% comfortable and satisfactory lectures; 89.4% - relevant topics chosen; 70.2% time-saving;66% - was useful for both theory and practical; 87.2% creates interest into contents and 85.1% - important topics are covered, while 23.4% - faculty transitions were time-consuming. Total of 127 Student responses - 56.7% - engaging and interactive lectures; 66.1% improved their understanding of the subject; 57.5% stimulated analytical thinking; 70.9% - alignment of the content with the students' academic and professional needs; 74% need to incorporate lab and clinical exercises; 66.9% agreed for its inclusion in the routine curriculum.

(iv) **Interpretation and Conclusions:** Integrated teaching method allows the student to develop the skills in investigation, analysis and also to perceive the patient as a whole and acts as a bridge for connecting knowledge and practices.

INTRODUCTION

The landscape of medical education has undergone a paradigm shift in the past decade, particularly with the introduction and adoption of Competency-Based Medical Education (CBME) in India. The National Medical Commission (NMC) introduced the CBME curriculum in 2019, aiming to transform medical graduates into competent, ethical, and empathetic physicians equipped to meet the contemporary healthcare needs of the population [1]. One of the cornerstones of this transformation is the concept of integrated teaching, which replaces traditional compartmentalized learning with a more holistic, patient-centered and system-based approach.

Integrated teaching involves the organization of learning content around themes or clinical cases, encouraging interdisciplinary collaboration across basic and clinical sciences [2]. This method fosters a deeper understanding of the subject matter, encourages active learning, and aids in developing clinical reasoning skills [3]. It aligns well with Miller's Pyramid of Clinical Competence, promoting

knowledge application, skill performance, and professionalism in real-world contexts [4].

Globally, integrated teaching has been shown to enhance learner engagement, academic performance, and long-term retention of knowledge [5]. For instance, Harden's Integration Ladder provides a theoretical framework that emphasizes progressive levels of integration—from isolated to transdisciplinary models [6]. In the Indian context, the NMC has strongly advocated for early clinical exposure, horizontal and vertical integration, and self-directed learning as essential components of CBME [7].

Despite these regulatory advancements, the implementation of integrated teaching in Indian medical colleges remains inconsistent and under-evaluated. There is a dearth of empirical evidence regarding the perceptions and acceptability of integrated teaching models among key stakeholders such as faculty and students. Preliminary research suggests that while students value the relevance and practicality of integrated modules, faculty often report logistical and coordination challenges [8].

In a study by Shankar et al., 78% of students preferred integrated modules over conventional lectures, citing better clinical correlation and examination preparedness [9]. Similarly, Prasad et al. reported that 84% of faculty acknowledged the potential of integrated teaching in promoting interdisciplinary learning but emphasized the need for proper faculty development [10]. However, barriers such as time constraints, curriculum overload, and resistance to change continue to hinder widespread implementation [11].

Furthermore, Puducherry, a Union Territory with a growing number of private and government medical institutions, serves as a representative setting to study these dynamics. Understanding the perception of stakeholders in this context can provide critical insights for scaling and sustaining integrated teaching practices in India.

This study was thus designed to assess the perception of final MBBS Part-I students and faculty members on the implementation of an integrated teaching module in a medical college in Puducherry. By evaluating parameters such as engagement, relevance, knowledge integration, time management and practical utility, this research aims to provide evidence for future curricular refinement and policymaking in medical education.

Materials and Methods

A descriptive study was done between November 2024 and January 2025 at a private tertiary care teaching hospital located in Puducherry, India. The study was conducted over two months following approval from the Institutional Scientific Research Committee and Institutional Ethics Committee (Approval No: 188/SVMCH/IEC-Cert/Dec./24). The study was designed to capture and compare the perceptions of two key stakeholder groups—teaching faculty and Final MBBS Part I students—on the implementation of an integrated aching module introduced as part of the competency-based undergraduate curriculum. Study Population were two target groups: 1) All faculty members who were directly or indirectly involved in the planning, development, or delivery of the integrated teaching sessions across both preclinical, paraclinical, and clinical departments 2) Final MBBS Part I students who had attended at least 75% of the integrated module sessions conducted in the current academic year. A total enumeration sampling method was used, wherein all eligible and available faculty members were invited to participate. Inclusion Criteria: Faculty members (Assistant Professor and above) from preclinical, paraclinical, and clinical departments willing to participate and provide informed consent. Those who are actively involved in the planning, coordination, or delivery of integrated teaching sessions during the current academic year. Regarding students, All Final MBBS Part I students enrolled in the current academic year who have attended at least 75% of the integrated teaching sessions and are willing to participate and provide informed consent.

Study Tool: Two separate, semi-structured, self-administered questionnaires were developed — one for faculty and one for students. Faculty Questionnaire Consisted of 12 items under three factors like Perceived Effectiveness & Satisfaction on ITM, Curriculum Integration & Utility, Time Managements & Logistics focusing on comfort with delivery, relevance of selected topics, effectiveness in theory and practical domains, time utility, student engagement, and perceived challenges (e.g., transition delays). Student Questionnaire: Similarly, student's questionnaire comprised 15 items addressing lecture interactivity, understanding of subject matter, stimulation of analytical thinking, time management, exam preparation support, and suggestions for improvement (e.g., lab and clinical integration). Items were constructed using both Likert-scale (e.g., Agree/Neutral/Disagree) and multiple-choice formats, based on prior literature on educational perception studies and guidelines from the Medical Council of India. The questionnaires underwent face and content validation by a panel of five senior faculty members from Medical Education Unit (MEU) including experts in preclinical, paraclinical, and clinical subjects. Suggestions were incorporated to improve item clarity, language, and relevance. A pilot test was carried out with 5 faculty members and 10 students, whose responses were not included in the final analysis. The Cronbach's alpha for internal consistency was found to be 0.81 for the student tool and 0.78 for the faculty tool, indicating good reliability.
Data Collection Procedure: Participants were approached via institutional email groups and classroom announcements. Google Forms with consent statements were distributed electronically. Respondents provided informed consent before accessing the questionnaire. Anonymity and confidentiality were maintained throughout. Reminders were sent twice at one-week intervals to improve response rates. Statistical Analysis: Data from Google Forms were exported into Microsoft Excel and subsequently analyzed using IBM SPSS Version 23.0. Descriptive statistics were used to summarize responses. Frequencies and percentages were calculated for categorical variables.

Results: Totally 47 faculties and 127 students submitted complete responses. From the faculty's responses, about 77% felt ITM was both comfortable and satisfactory, suggesting they were generally at ease with the teaching format. Nearly 9 out of 10 (89.4%) felt the topics chosen were relevant, indicating that the content aligned well with what they needed to learn. Interestingly, 70% believed that integrated teaching helped them save time, possibly by combining related subjects or streamlining content. Two-thirds (66%) thought it was beneficial for both theoretical understanding and practical application, a balanced approach. About 87%

felt that ITM made the subject more interesting, which is important for engaging the students for the whole class hour. Also, 85% said key topics were covered well. However, around 23% mentioned that transitions between different faculty members took up too much time.

Overall, 127 students responded positively to integrated teaching. About two-thirds (66.1%) felt it helped them understand the subject better, which is a strong indicator that the method is effective in improving clarity and comprehension. Over half (57.5%) said it encouraged analytical thinking, suggesting the sessions went beyond rote learning and pushed students to think critically. Around 71% felt the content was relevant to their academic and career goals, showing that it resonated with their practical needs. Nearly three-fourths (74%) recommended adding lab and clinical components, indicating students want even more hands-on and real-world learning within these sessions. In line with this, about 67% supported integrating this teaching method into their regular curriculum, showing strong approval for its continued use. More than half (57.5%) felt it saved time and around 64% found it useful when preparing for exams, which shows that students saw both efficiency and exam readiness benefits from this approach. (Table 1 &2, fig. 1)

Discussion

The findings reflect a positive inclination among both faculty and students towards integrated teaching, consistent with literature supporting its pedagogical value. Faculty largely agreed on the relevance, interest generation, and dual utility in theory and practical's - mirroring findings from Rao et al. who emphasized enhanced engagement in integrated modules [12].

Students reported significant benefits such as improved comprehension and alignment with academic needs, resonating with Kulkarni et al.'s study, where 68% of students preferred integrated content over traditional lectures [13]. However, logistical concerns such as faculty transition time and need for clinical integration were flagged.

Faculty development workshops, curriculum mapping, and interdepartmental coordination can alleviate transition-related issues [14]. The call for incorporating clinical and lab elements further supports recommendations from Chavda et al., who advocated for immersive, case-based learning experiences [15].

Overall, the positive stakeholder perception indicates readiness for more robust integration strategies, in line with international best practices [16]. However, scalability and sustainability require institutional commitment and periodic evaluations [17,18].

Conclusion and Recommendations

The integrated teaching module was well-received by both faculty and students, indicating its potential to enhance academic engagement, analytical thinking, and exam preparedness. Faculty highlighted content relevance and practical utility, while students called for clinical and lab incorporation, which would be an eye-opener for the incorporation of the ITM sessions with the contents focusing on the examination point of view from the students.

Table I. shows the responses made by the students (n = 127)

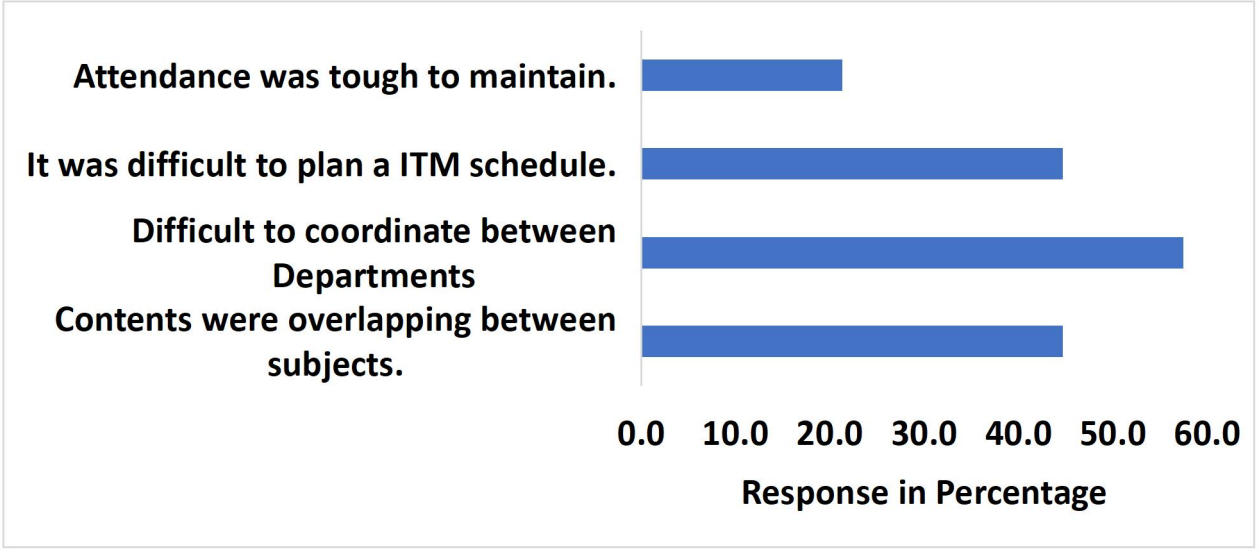
Response factors	Frequency (%)
Interactivity and Time Management	
The Integrated Teaching Lectures were Interesting and Interactive.	72 (56.7)
It created more interest into the contents.	75 (59.1)
Integrated teaching should include laboratory and clinical exercises.	94 (74)
It covered important topics.	88 (69.3)
It involved interaction from students.	85 (66.9)
Understanding and Learning Outcome	
Understanding the Subject.	84 (66.1)
Stimulation of ability to analyse.	73 (57.5)
It gives knowledge and skills that are helpful in clinical practice.	83 (65.4)
Instilled confidence in that topic	73 (57.5)
ITM reduces the amount of time needed for study when compared to lectures.	73 (57.5)
Integrated teaching is more useful for university exams.	81 (63.8)
Curriculum Relevance and Implementation	
Topics covered were relevant.	90 (70.9)
Integrated teaching can be regularly incorporated in the routine curriculum.	85 (66.9)

Integrated teaching is preferred over traditional teaching.	78 (61.4)
Integrated teaching should be in the form of case discussions with an emphasis on differential diagnosis, approach, and management.	91 (71.7)

Table II. Feedback responses given by the Faculty on ITM (n = 47)

Questions	Frequency (%)
Perceived Effectiveness & Satisfaction	
The Integrated Teaching Lectures were comfortable and satisfied	36 (76.6)
Topics covered were relevant	42 (89.4)
It created more interest into the contents	41 (87.2)
Conduct of Integrated Teaching regularly	36 (76.6)
It covered important topics	40 (85.1)
Curriculum Integration	
It can be included in Medical curriculum	42 (89.4)
It is useful for Theory classes alone	20 (42.6)
It is useful for Practical classes alone	18 (38.3)
It is useful for Theory and Practical classes also	31 (66)
Case Discussions can be dealt via ITM	31 (66)
Assessment of the students was able to be done	24 (51.1)
Time Management	
It is time saving	33 (70.2)
Switching over of faculty was time consuming	11 (23.4)

Figure I. shows the challenges faced by the faculty while implementing ITM



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