

To Assess the Attitude of MBBS Students towards Implementation of Early Clinical Exposure Module in First Professional Year Subjects

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ABSTRACT

Background: Early clinical exposure (ECE) is an educational approach that introduces medical students to clinical settings and patient interactions during the early stages of their training. This initiative aims to bridge the gap between theoretical knowledge acquired in the classroom and practical skills required in clinical practice. This study aims to assess the attitude of MBBS students towards implementing ECE modules in their 1st professional year subjects.

Methods: This study was conducted amongst MBBS students of 2nd (Batch 2020-2021) and 3rd (Batch 2019-2020) professional years, who have undergone full 90 hours of ECE module of all three preclinical subjects in their 1st year. The perception of students toward ECE was assessed using 5-point Likert scale responses through a validated feedback questionnaire.

Results: 43% of students strongly agreed that the implementation of the ECE module changed their perspective on learning pre-clinical subjects. 44.7% strongly agreed that the hours allotted to each subject were satisfying. 48.5% strongly agreed that ECE teaching method helped them sensitize to the clinical setting. 46.6% strongly agreed that ECE helped them better assimilate knowledge on the topic. 44% strongly agreed that the technique will better equip them to apply the knowledge when the opportunity arises. 43.4% strongly agreed that the training method in ECE has enhanced their knowledge than before the module's implementation.

Conclusion: This study's findings suggest that MBBS students have been positively received by implementing Early Clinical Exposure (ECE) modules in the first professional year subjects. The ECE technique will better equip medical students to apply their knowledge in clinical scenarios, indicating the potential effectiveness of ECE in bridging the gap between theoretical learning and practical application in clinical practice. These results underscore the importance of incorporating ECE modules into medical education curricula to enhance student learning experiences and prepare future healthcare professionals for clinical practice.

KEYWORDS: Early Clinical Exposure, Modules, Students' Attitude, Competency-Based Undergraduate Curriculum, Professional Years, Medical Education, Implications.

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INTRODUCTION

The National Medical Commission introduced the Competency-Based Undergraduate Curriculum that was implemented in the August 2019 batch of 1st Professional year of MBBS. This curriculum includes Early Clinical Exposure (ECE) as one of the modules. The essential component of this is active learning by focusing on patients.

The ECE module emphasises the beginners' correlating learning in first professional-year subjects with their clinical application. Learning basic sciences with respect to a clinical context can improve students' motivation to learn and retention. It also provides an early introduction to immersion into the clinical environment. The clinical context includes case scenarios, videos, actual patients, simulated patients, etc. [1].

The time allotted for ECE in the first year of MBBS is 90 hours, equally divided among the three preclinical subjects (Anatomy, Physiology, and Biochemistry), so the time available for each subject is 30 hours. This includes 18 basic sciences correlation and 12 hours of clinical skills. The record of students' activities during ECE sessions is maintained in the logbook and assessed periodically. Further, internal/formative and university examinations also include questions based on critical thinking that test clinical correlation in basic sciences.

Thus, ECE acts as a bridge between preclinical and clinical disciplines. This would help future doctors rationalize the diagnosis and management of diseases. It is mainly achieved by horizontal and vertical integration among different MBBS subjects [2,3].

This study evaluates the attitude of MBBS students of Parul Institute of Medical Sciences and Research, Parul University, Vadodara, Gujarat, towards the concept, implementation and conducting of ECE sessions by taking their valuable feedback. The students who were assessed had already undergone the ECE module in their first year and have progressed to further professional years. Feedback from these students helps identify the strengths

and weaknesses, thus improving the teaching-learning methodology in ECE. These students were in their 2nd and 3rd professional years and had undergone the full 90-hour module of ECE in their 1st year and had also been assessed accordingly.

OBJECTIVES

Primary objectives:

- To analyse the perceptions of 2nd—and 3rd-year students of the ECE module and their attitudes towards its usefulness as a teaching-learning methodology.
- To assess whether ECE improved the interest and motivation among these students and enhanced their ability to integrate and correlate the preclinical subjects with their clinical applications.

Secondary objective:

- To suggest reforms and modify the ECE curriculum based on the students' feedback and experience.

METHODS

Study Design: This study was a Questionnaire-based conducted at the Anatomy Department of Parul Institute of Medical Sciences and Research, Parul University, Vadodara, Gujarat.

Inclusion criteria: This study included MBBS students of 2nd (Batch 2020-2021) and 3rd (Batch 2019-2020) professional years who had undergone the full 90 hours of ECE module teaching of all three preclinical subjects in their first year and volunteered to participate after sensitization.

Exclusion criteria: Students who did not volunteer to participate in the study and those who had not been exposed to the full 90 hours of ECE module were excluded.

Study Population: All the MBBS students fulfilling the inclusion criteria, 298 (from the 2nd and 3rd professional years combined).

Data collection procedure and analysis: A feedback questionnaire on the ECE module, mainly designed and validated after consulting experts in the related field, was given to the volunteering students at a pre-specified day, date, and time in the

Table 1: Feedback Questionnaire: This questionnaire uses a 5-point Likert scale to assess the attitude of MBBS students towards implementing the Early Clinical Exposure (ECE) module in first professional-year subjects.

| Items | Strongly disagree = 1 | Disagree = 2 | Neutral = 3 | Agree = 4 | Strongly agree = 5 |
|--|-----------------------|--------------|-------------|-----------|--------------------|
| ECE has changed my perspective of learning subjects | 6.50% | 11.30% | 17.50% | 21.70% | 43% |
| ECE has helped me in understanding of applied aspects of the topic | 4.60% | 12% | 19.40% | 23.90% | 40.10% |
| ECE is an enjoyable method for learning compared to traditional lecture as it breaks the monotony of didactic lectures | 5.20% | 15.20% | 18.80% | 19.10% | 41.70% |
| The number of hours of ECE allotted to each subject were satisfying | 3.50% | 11.70% | 24.60% | 15.50% | 44.70% |
| ECE helped me to be sensitized to the clinical setting | 2.90% | 9.40% | 17.50% | 21.70% | 48.50% |
| ECE helped me in better assimilation of knowledge on the topic | 2.30% | 10.70% | 21% | 19.40% | 46.60% |
| The technique will better equip me to apply the knowledge when the opportunity arises | 6.20% | 13.30% | 18.10% | 18.40% | 44% |
| Learning of 1 st professional year subjects has been satisfying with the use of ECE | 6.40% | 12% | 19.10% | 23% | 39.50% |
| I am confident about the knowledge and skills thus acquired | 6.50% | 12.30% | 19.40% | 19.40% | 42.40% |
| The method of teaching has enhanced my knowledge than what it was | 10.30% | 9.70% | 14.90% | 21.70% | 43.40% |

Anatomy department of Parul Institute of Medical Sciences & Research, Parul University.

All the protocols related to COVID-19 appropriate behaviour, such as maintaining social distance and wearing face masks, were taken care of.

The feedback of students from this questionnaire was obtained using a 5-point Likert scale (with items ranging from strongly disagree=1 to strongly agree=5). The results were then tabulated (Table 1).

RESULTS AND DISCUSSION

The study included 298 MBBS students in their second and third professional years. Their attitude towards implementing the Early Clinical Exposure (ECE) module in first professional year subjects was assessed using a feedback questionnaire using a 5-point Likert scale, and the results were tabulated (Table 1).

Many students strongly agreed that the ECE module changed their perspective on learning pre-clinical subjects, helped them better assimilate knowledge, and sensitized them to the clinical setting. Additionally, most students

expressed satisfaction with the number of hours allotted to each subject and believed that the ECE teaching method enhanced their understanding of the topics. Furthermore, many students strongly agreed that the ECE technique would better equip them to apply their knowledge in clinical scenarios, indicating the potential effectiveness of ECE in bridging the gap between theoretical learning and practical application in clinical practice.

Some authors analyze the students' perceptions towards ECE in individual subjects. The students are still in their first year, and the study is mainly cross-sectional, done by dividing them into groups and comparing their feedback.

The comparative cross-over study by Sheshgiri C et al. was done to provide evidence on the effect of video presentations of common clinical cases during the anatomy classes in terms of comprehension and correlation [2].

A cross-sectional study conducted by Gune AR et al. among 1st-year medical students also concluded that the ECE module significantly helped them to comprehend the topic better, made learning interesting, and helped them

correlate basic sciences with their clinical applications and relevance in practical medicine [3].

The prospective, cross-over intervention study by Aggarwal N et. al. emphasized integrating clinical cases in orthopaedics in the anatomy ECE module [4]. The cross-sectional study done by Tayade MC et al. was carried out amongst 820 students for three years, wherein the students were randomly divided into two groups viz. ECE exposed group (Group A) and traditional teaching exposed group (Group B). Periodical sessions were conducted (60 minutes each), and a validated 10 point questionnaire for feedback collection was used [5].

In the experimental study conducted by Chimmalgi M et al., the primary objective was to determine if ECE and E-learning can be effective alternative methods of teaching anatomy for first-year medical students. It was concluded that ECE can be an effective method to teach anatomy in the described format. E-learning did not improve the test scores in the self-study format used in this study, but 3D visualization can benefit the students when used as an adjunct to traditional methods [6]. In the study done by Meshram SW et al., 100 medical students in first-year MBBS courses were divided into two groups, group A and group B. Both groups were exposed to a pre-test. Then, a didactic lecture was given to group B, and group A was taught a topic similar to the patients', which means group A was exposed to early clinical settings. Again, the post-test was taken for both groups, and the results of the post-test for both groups were compared [7].

Similar studies were also done for biochemistry and physiology courses, implementing early clinical exposure modules in high-yield topics to enhance learning [8,9,10]. In all these studies, it was concluded that students not only enjoyed the experience of early clinical exposure but also motivated their learning process.

Our study also supported that this teaching-learning method helped improve knowledge, retention, attention, and motivation. The students' attitudes and perceptions towards

early clinical exposure were positive, and they considered it an effective and useful module in the medical education curriculum.

CONCLUSION

ECE allows students to contextualise their theoretical knowledge by exposing them to real-world clinical settings early in their training. This helps students understand the relevance of their studies to clinical practice from the outset. By observing and interacting with patients, medical students can develop essential clinical skills such as communication, history-taking, physical examination, and bedside manner. It provides opportunities for students to hone these skills under supervision. Exposure to clinical environments early in medical training instils professionalism, empathy, and ethical values in students. It helps them understand the responsibilities of healthcare providers and the importance of patient-centred care. This training method encourages a culture of lifelong learning by emphasizing the importance of staying curious, seeking out new knowledge, and continuously improving clinical skills throughout one's medical career. Overall, implementing ECE modules in medical education contributes to producing well-rounded, competent, and compassionate healthcare professionals who are better prepared to meet the challenges of clinical practice.

ABBREVIATIONS

ECE – Early Clinical Exposure

Author Contributions

RVC: Data collection and analysis, interpretation and writing of the manuscript.

MR: Conception and design, manuscript writing and final editing.

BR: literature review and Interpretation of the results.

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Conflicts of Interests: None

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