

RESEARCH ARTICLE

Impact of early clinical exposure to boost applicative aspects of learning in first MBBS physiology students

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ABSTRACT

Background: The primary objective of medical education is to prepare students for a lifetime of patient care. One of the key requisites of a curriculum is providing relevance to learning. Early clinical exposure (ECE) introduces some aspects of clinical and social contexts of patient care into the 1st year of undergraduate teaching program so as to provide a reference to basic science learning to understand applicative aspects of learning. **Aims and Objectives:** The aims of the study were (i) to compare conventional lecture methods with ECE as a relevance to diagnosis, patient care, and treatment. (ii) To assess the development of attitude, ethics, and professionalism as integral to doctor-patient relationship. **Materials and Methods:** The study group consisted of 150 voluntary participants of 1st year MBBS 2019 batch. These students were arranged into two groups, Group A (ECE group) and Group B (non-ECE group). Group A was exposed to ECE method of teaching of 1 h session in the medicine outpatient department by faculty from the medicine department. Group B was exposed to same topic by traditional teaching method (didactic lecture) for 1 h session in the department of physiology. Both groups were assessed. Knowledge was tested by multiple-choice questions, skills were tested by objective structured practical examination, and attitudinal domain was tested by perception-based questionnaire using Likert scale. **Results:** Performance of Group A (ECE group) students in terms of knowledge, skills, and attitude has been found to be statistically significant compared to Group B (non-ECE group). **Conclusions:** From the present study, we found that ECE was a better T-L methodology than traditional teaching in medical students and will prepare students for a lifetime of patient care.

KEY WORDS: Early Clinical Exposure; Traditional Teaching; Medical Education


INTRODUCTION

Conventionally, medical education system in India involves teaching that engages medical students in classrooms and laboratory settings for the 1st year of their course with introduction of clinical subjects in their 2nd year onward.^[1]

In Phase I of MBBS course, apart from understanding the context of basic sciences, students require grounding in human and social aspects of the practice of medicine. Early clinical correlation and exposure to clinical environment will provide a point of reference and relevance to novice learner. Student's motivation and performance improve when the instruction is adapted to student learning preferences and styles.^[2]

Context of the Study

Teaching learning process involves improvement in knowledge, skill, and attitude consisting of, respectively, cognitive domain, psychomotor domain, and affective domain of students. Early clinical exposure (ECE)

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ensures well-integrated knowledge of basic sciences, clinical sciences, and social functions especially doctor-patient interaction.^[3] Keeping in mind the implications of ECE, Medical Council of India, New Delhi, have recommended ECE in CBME curriculum to be implemented from 2019 batch.

With this view, the present study was planned to assess the impact of ECE to boost applicative aspects of learning in first MBBS physiology students.

Overall Goal

- To provide clinical correlation to basic sciences learning
- To introduce element of humanity in medicine.

Specific Objectives

- To compare conventional lecture methods with ECE as a relevance to diagnosis, patient care, and treatment
- To assess the impact of the patient as a motivation to learn
- To assess the development of attitude, ethics, and professionalism as integral to doctor-patient relationship.

MATERIALS AND METHODS

Permission from the head of the institute and from the head of the department was obtained. Institutional Ethics Committee clearance certificate was obtained. The study was carried out in the Department of Physiology, MIMSR Medical College, Latur. The study group consisted of 150, 1st year MBBS students of 2019–2020 batch. Orientation program on ECE was conducted for students and faculty. All the voluntary participants were arranged randomly into two groups of 75 each as Group A (ECE group) and Group B (non-ECE group). Appropriate instructions were given to students before beginning of session. The written consent was obtained. The topic selected for ECE was chronic obstructive pulmonary disease (COPD) from respiratory physiology. Group A was trained using ECE method with COPD patient from medicine ward. Group A students undergone through discussion of differences between obstructive and restrictive lung diseases with their clinical correlation. Group B (non-ECE group) was subjected to same topic using a conventional didactic lecture. They had theoretical discussion about obstructive and restrictive lung diseases with spirometric findings. Both

groups were tested. Knowledge was tested by multiple-choice questions, skills were tested by objective structured practical examination, and attitude was tested by questionnaire using Likert scale. Statistical analysis was done by unpaired *t*-test with the help of SPSS software.

RESULTS

Table 1 shows that performance of Group A (ECE students) has been statistically significant as compared to Group B (non-ECE students) in terms of knowledge, skill, and attitude of students.

DISCUSSION

The present study shows significant differences in terms of cognitive, psychomotor, and affective domain of students exposed to early clinical and patient environment as compared to the students exposed to the traditional teaching methods. This means if students are given ECE, they get benefitted in terms of all the domains of learning. Early experience helps medical students socialize to their chosen profession. It helps them acquire a range of subject matter and makes their learning more real and relevant. It has potential benefits for other stakeholders, notably teachers and patients. It can influence career choices.^[4] Similar types of results were observed by Dr. Tayde *et al.* and found that all three domains of learning were better developed in students population exposed to ECE.^[5] Palappallil *et al.* concluded that innovative teaching methodology like case-based learning was well accepted by students and minimizes misconception of learners.^[6]

However, Johnson *et al.* found that students' attitudes toward medical education were generally favorable regardless of their clinical exposures.^[7]

The changing trends in health care and medicine are giving birth to corresponding rapid changes in the content and process of medical education.^[8] Learning is an active process involving desirable changes in behavior of learner in which teacher mainly acts as a facilitator.^[9] Good learning is possible only if there is good communication.^[10] Bell *et al.* stated real patient learning led to a rich variety of learning outcomes and also observed that teaching from doctor teachers found more appreciable than other teachers.^[11] Spencer *et al.* observed that direct contact with patients can be seen to play crucial role in

Table 1: Performance of students

Score (in bracket total score)	Group A ECE group		Group B non-ECE group		“ <i>t</i> ” value	“ <i>P</i> ” value	Significance
	Mean	SD	Mean	SD			
MCQs (10)	8.5	0.75	6.7	0.45	4.88	0.001	Significant
OSPE (20)	17.7	2.85	15.5	0.25	5.24	0.001	Significant
Questionnaire (20)	18.45	1.85	14.63	0.76	6.45	0.01	Significant

ECE: Early clinical exposure, MCQs: Multiple-choice questions, OSPE: Objective structured practical examination, SD: Standard deviation

the development of clinical reasoning, communication skills, professional attitudes, and empathy.^[12] Trotter and Roberts found that teaching and learning strategies that involve students actively in class are likely to be more successful in enhancing early student experience.^[13]

Strength and Limitations of this Study

The study population was exposed to one of the innovative teaching-learning methodology, i.e., ECE which can test all the three domains of learning – cognitive, psychomotor, and affective. It can encourage students to develop critical thinking and clinical reasoning skills. This study was conducted with involvement of single batch of students taking into consideration only one topic from physiology.

CONCLUSIONS

ECE provides a clinical context and relevance to basic sciences learning. It helps to reinforce comprehension of normal and its altered expression and disease states. It also facilitates early involvement in the healthcare environment that serves as motivation and reference point for students, leading to their professional growth and development. Overall, it will enrich the learning experience of the student.

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