

## THE INFLUENCE OF EARLY CLINICAL EXPOSURE MODULE IN UNDERGRADUATE MEDICAL EDUCATION

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**Article Info:** Received 02 February 2021; Accepted 05 April 2021

**DOI:** <https://doi.org/10.32553/ijmbs.v5i4.1858>

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**Conflict of interest:** No conflict of interest.

### Abstract

**Introduction:** In traditional medical curriculum basic science subjects were taught in isolation from clinical subjects. Students would thereby find it difficult to retain concepts in basic sciences, recall and co-relate it when clinical setting was encountered. Early clinical exposure is early authentic patient contact in clinical or social setting which helps to enhance the understanding of health or illness/disease and the role of medical professional. The objective of this study was to study the influence of early clinical exposure for a module on jaundice on undergraduate students and faculty perception.

**Materials and Methods:** ECE module on jaundice was introduced for study in first MBBS students. Pre-validated questionnaire was used for data collection and student and faculty perception about the module was evaluated.

**Results:** Participating students got better score in post-test ( $6.03 \pm 1.701$ ) as compared with pre-test ( $5.82 \pm 1.701$ ) although the results were not statistically significant. 92% students and faculty positively rated and appraised ECE as a teaching learning tool.

**Conclusion:** ECE module on jaundice generated interest in students and could help students co-relate basic science concepts with cases. This could lead to improvement in academic performance and better patient care.

**Keywords:** Early clinical exposure; student, faculty perception

### Introduction:

Imparting adequate clinical skills is an important aspect of medical education and training. Traditional medical education in India consisted of one and half years of preclinical science (basic sciences) studies followed by three years of clinical training and patient exposure. Pre-clinical subjects were thus taught in silo from clinical subjects. Students need a good understanding of fundamentals of basic science subjects like physiology, anatomy and biochemistry. They also need to understand the variation from normal and learn to apply it in clinical scenarios.

Over the years there has been a paradigm shift in knowledge, technology, and practice of medicine.<sup>1</sup> Responding to these changes requires introspection in terms of lacunae in our medical education and effective approaches on basis of new curricula. Early clinical exposure (ECE) is a teaching and learning methodology which enhances exposure of medical students to patients (actual human contact) as early as first year of medical college. It is an effective approach to learning and acquiring clinical skills from first year of medical curriculum.<sup>2-4</sup> Knowledge of Physiology is important to understand etiopathogenesis of disease and helps in clinical diagnosis.

The Medical Council of India has recommended ECE in new proposed syllabus in 2015 and again as part of competency based medical education in 2019. Earlier studies have implied that early clinical exposure has strengthened learning and made it more relevant to clinical practice. Early experience also makes the students more motivated so that they interact with patients more confidently. It helps them to develop self-appraisal and develop a professional identity. The present study aims to evaluate the impact of early clinical exposure on different domains of student learning.

### Objectives:

The primary objective of study was to determine the student and faculty perception to ECE. The study also determined the effect of ECE on the academic performance of students.

### Methodology:

This was a prospective, observational educational study. ECE module on jaundice was finalized after discussion with 4 senior faculty members and 2 other faculty members involved in module were sensitized for implementing it. Institutional ethics committee approval was obtained. The study was conducted on 68 first MBBS students from September 2018 to February 2019. The MCQ based pre-test

and post-test was designed of 10 MCQs, single best response type. They consisted of 4 MCQs each for knowledge and comprehension and 2 case based MCQs were included. The pre and post-test questionnaire were validated by subject experts. The feedback questionnaire for student and faculty were validated by senior faculty members. The topic of jaundice was taught as a didactic lecture to the participants. This was followed by pre-test evaluation of students. The cases to be shown to the students were discussed with clinical departments. Two cases i.e alcoholic liver disease with jaundice and hepatitis with jaundice were finalized for the ECE module. Students were divided in 3 batches of 20/22 each and taken to medicine wards. They were explained symptoms, signs, and laboratory findings for the two patients with jaundice. Post-test evaluation and feedback about student perception for ECE was collected. Faculty perception about ECE module was recorded from 5 faculty members included in the module. The data was analysed using SPSS.

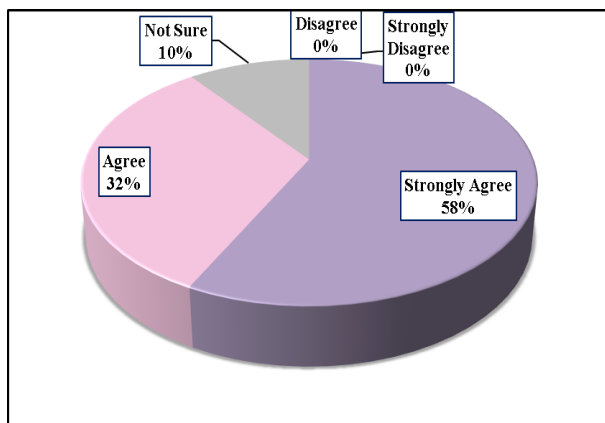
**Results:**

Participating students got better score in post-test ( $6.03 \pm 1.701$ ) as compared with pre-test ( $5.82 \pm 1.701$ ) although the results were not statistically significant as analyzed by 'paired t test'.

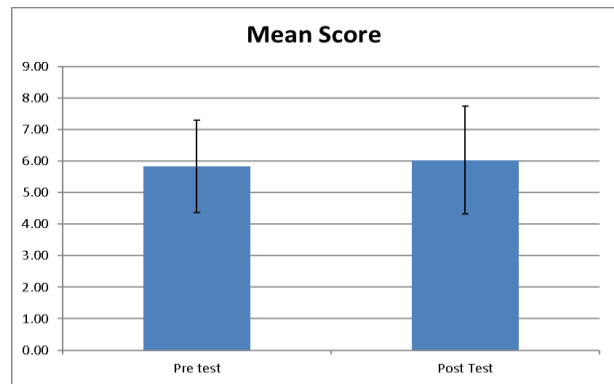
Student responses on perception about ECE module on 5-point Likert scales were analyzed using percentages. 58% students strongly agreed that they were satisfied with ECE module on jaundice. 92% students and faculty positively rated and appraised ECE as a teaching learning tool. 73% students felt that ECE created interest and strengthened the link between theory and practice. 63% students felt that ECE gave them better understanding of the topic and motivated them to study more. 58% students believed that ECE module will improve their communication skills and help to perform better in examinations.

**Specific Learning Objectives and Graphs (Web Charts)**

1) Do students feel satisfied with Early Clinical Exposure (ECE)? (Reaction) (Kirkpatrick's level 1)



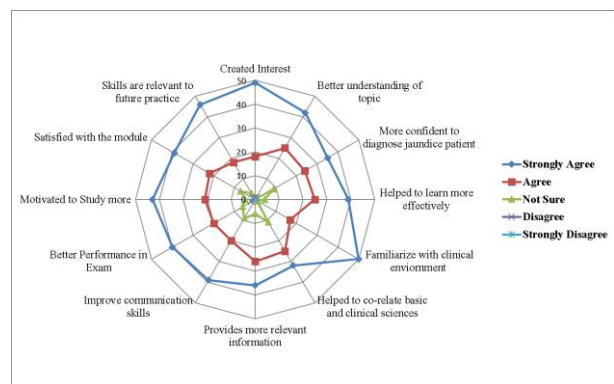
2) Does ECE lead to better performance in exams? (Knowledge) (Kirkpatrick's level 2)



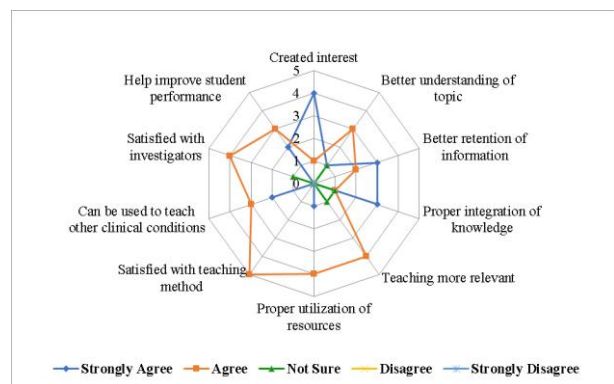
Pre-test:  $5.82 \pm 1.465$  Post-test:  $6.03 \pm 1.701$

(Statistically: not significant)

3) Student perception on Early Clinical Exposure as effective teaching-learning tool.



4) Faculty perception on Early Clinical Exposure as effective teaching-learning tool.



**Discussion:**

Early clinical exposure (ECE) has been implemented as an effective teaching-learning method across European Medical schools.<sup>5-7</sup> A doctor is now recognized to have certain core competencies in the new competency based medical education introduced in India and the early years of medical education can have an important impact in this process.<sup>8,9</sup> Flexner described the importance of a scientific approach and CanMEDS enlisted the different professional

attributes of a doctor.<sup>10-12</sup> Several institutes and faculty are now including programs using early clinical exposure (ECE) to introduce medical students to important concepts in medicine.

Patil PG et al. (2016) conducted a study to understand the influence of early clinical exposure for undergraduate medical students. Early clinical exposure students had better self-perception including subject knowledge, communication, diagnosis and treatment planning than students with late clinical exposure.<sup>13</sup> Rawekar A. et al. (2016) reported that ECE had an effective influence on learning as manifested in skills gained by the students and their perceptions that ECE would be helpful prospectively in their routine clinical posting.<sup>4</sup> In our study ECE module on jaundice generated interest in students and they reported that it would help them to co-relate basic science concepts with cases. This could lead to improvement in academic performance and better patient care. The findings of our study were in accordance with Sathish kumar S et al., and Vyas R et al., where 96.4% students gave an overall positive rating for the ECE in their feedback on a 5 point Likert scale. They also mentioned that after ECE sessions, the interest for their subjects increased. The students felt motivated and it enhanced the understanding of endocrine physiology as there was integration of knowledge.<sup>14,15</sup>

Our results indicate that students and faculty were satisfied with the ECE module. It may also help students to contextualize the knowledge of physiology in clinical scenarios. Study on a larger sample size and follow up on performance of students in second and third MBBS on the topic of jaundice would be required to further validate the findings.

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