

## Perception of Phase I MBBS students on newly implemented Early Clinical Exposure (ECE)

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### Abstract

**Background:** Early Clinical Exposure (ECE) fosters exposure of the medical students to the patients as early as the first year of medical college and provides a clinical context and relevance to basic sciences learning. **Objectives:** To assess perception of phase I MBBS students on newly implemented ECE of Curriculum Based Medical Education (CBME) program by National Medical Commission. **Material & Methods:** A longitudinal educational interventional study was conducted on 150 phase I medical students in the Department of Anatomy. Six ECE sessions of three hours each containing case scenario, videos and simulated patient were conducted according to GMER-2019. Six didactic lectures were taken by the same faculty. MCQ based post-test was taken after each session. Feedback of students to know their perception regarding the ECE sessions was collected. **Results:** Phase I MBBS students perceived the ECE sessions of Human Anatomy very well. Students agreed that the ECE sessions of Human Anatomy helped them in understanding the correlations of applied anatomy of these topics and found it to be interesting. Students had better retention of the topics covered by ECE. The mean post test score of the students after the ECE sessions was 8.14/10, where as mean post test score after didactic lecture was 7.31 /10. The difference was statistically significant. **Conclusion:** Newly implemented ECE provide better retention of the topics and is a good tool for understanding the correlation of applied human anatomy for Phase I MBBS students.

**Key words:** Early Clinical Exposure, Competency Based Medical Education, Perception, Human Anatomy.

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### Introduction

Early Clinical Exposure (ECE) can be defined as a teaching-learning methodology, which fosters exposure of the medical students to the patients as early as the first year of the medical college[1]. NMC in the GMER-2019 has allotted ninety hours for ECE which has to be equally divided among the three preclinical subjects i.e. Human Anatomy, Physiology and Biochemistry. These 30 hours are further divided as 18 hours for basic sciences correlations using actual patient contact or by use of paper based cases, charts, graphics, videos, reports field visits etc. in community/ hospital, laboratories for Phase I MBBS students. Remaining 12 hours are for Clinical skills with experience and human context in which every three hour session includes cases for demonstration by preclinical faculty or clinicians, in out-patient departments/ wards/ demonstration rooms in small groups[2].

Teaching medicine especially basic science subjects in ways to make it interesting, enhance learning, conceptualize the knowledge and enable them to apply it in the medical field has always been a challenge. In order to meet the above challenges, National Medical Commission (NMC) has introduced Competency Based Medical Education (CBME) which involves several teaching learning methods like early clinical exposure, Self-directed learning etc.

Through newly implemented ECE program in the MBBS curriculum NMC has tried to create an opportunity for students to correlate learning in Phase I subjects like human anatomy with their clinical application. Learning of basic sciences with respect to a clinical context can improve student's motivation to learn and also improve retention[3].

It also provides authentic human context and early introduction to immersion into the clinical environment. As these changes in curriculum are recently implemented, this study was planned to assess the perception of phase I MBBS students on newly implemented Early Clinical Exposure module of CBME program by NMC. Performance of students on the topics covered by ECE and didactic lecture was also compared.

### Material & Methods

This longitudinal Educational interventional study was carried out at the Department of Anatomy of a Government Medical College, Pali, Rajasthan from January 2021 to October 2021. Ethical approval was obtained from the Institutional Ethics Committee. Whole batch of 150 Phase I MBBS students admitted in year 2020 was included and informed consent was obtained. Faculty and Students were sensitized for ECE session, perception and the feedback.

As per guidelines of GMER-19 basic sciences correlations for applied human anatomy six ECE modules of three hours each containing case scenario, videos and simulated patient prepared by subject experts were conducted. In initial 30 minutes of each ECE session introduction and instructions by the faculty of Department of Anatomy was given. Next 90 minutes students experience videos, case scenario, and simulated patients of the topic by the faculty of Department of Anatomy. Summary and conclusion for learning points was delivered by the faculty in 30 minutes. In the last 30 minutes of every ECE session students were asked to write down the reflection. Multiple choice question based post test was conducted after every ECE sessions. Six traditional didactic lectures were taken by the same faculty during the routine CBME time table of the department followed by multiple choice question based post test. Mean post-test marks obtained after ECE and Didactic lectures were compared.

A feedback questionnaire was designed and validated by experts for the Phase I MBBS students. Perception on ECE of the students was taken as a questionnaire on 5 point Likert scale after completion of

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hospital visits on Google form. These 5 points were: 1= Strongly Disagree; 2= Disagree; 3= Neutral; 4= Agree; 5= strongly agree. Three open ended questions were also included.

**Statistical Analysis**

Data was maintained on excel spreadsheet. Descriptive data were expressed as mean and standard deviation. Quantitative data was assessed using independent sample student’s t-test.

**Results**

Phase I MBBS students perceived the early clinical exposure module very well. 68% of the Phase I MBBS students strongly agreed that the ECE is an interesting method of teaching learning, 60% strongly

agree that the ECE created interest in the subject/topics, 52% strongly agree that the ECE has increased my attention in the class, 56% strongly agree that the ECE helped me to understand the topic better, 52% students strongly agree that the ECE motivated me to read more about the topic,48% students agree that the ECE helped me in better retention of the topic,53% students strongly agree that the ECE will help me in better recalling of the topics,53% students strongly agree that the ECE helped me in correlating basic with clinical sciences,53% students strongly agree that they were satisfied with the involvement and guidance of teacher in ECE,55% students strongly agree that they will also like to learn other topics with this intervention i.e. ECE and 49% students feel encouraged to participate more in such type of teaching methods (Figure No. 1).

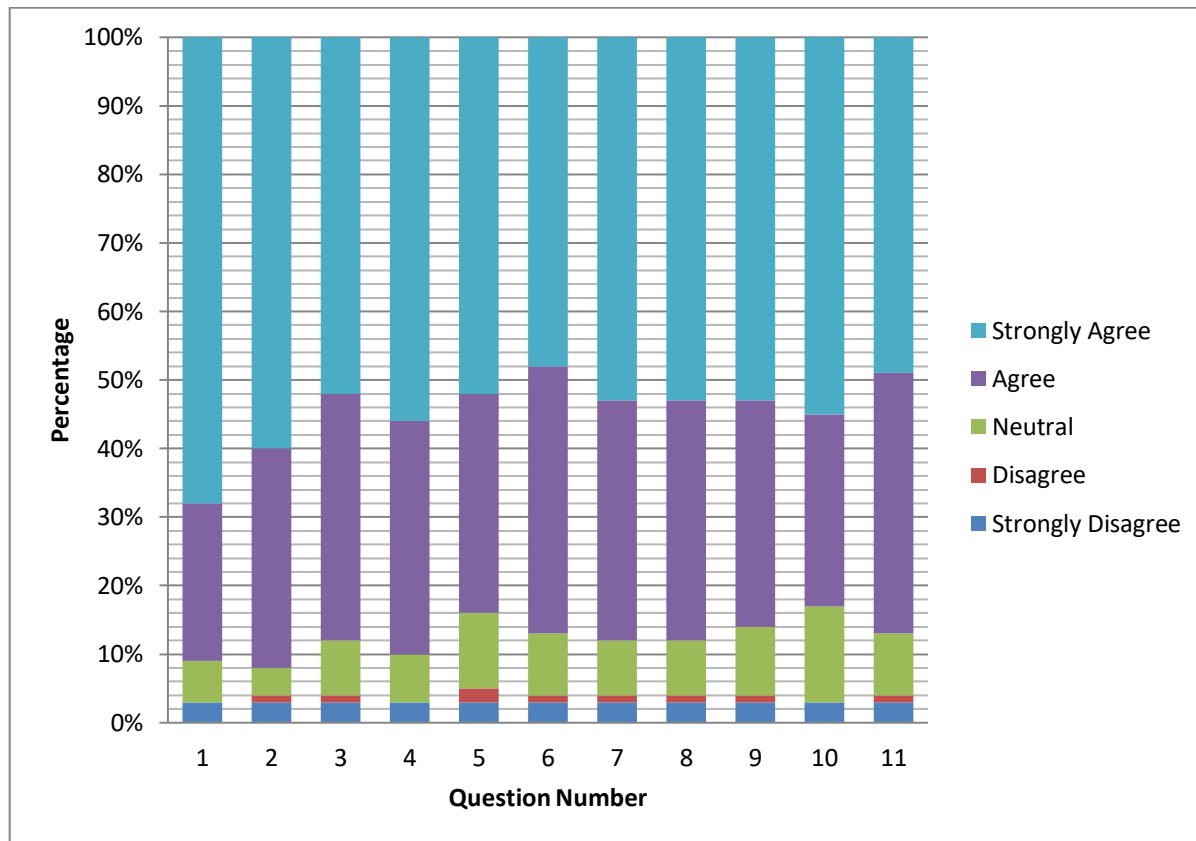


Figure: 1 Students feedback on Early Clinical Exposure

Open ended questions showed that ECE was better for understanding the subject, easy to recall the topic, relating topic with clinical science becomes a little bit easy and requirement of frequency of early clinical exposure should be increased (Table No. 2).

Table 1: Feedback Questionnaires for Students

S. No.	Questionnaire Content
1.	Early Clinical Exposure is an interesting method of teaching learning.
2.	Early Clinical Exposure created interest in the subject/topics.
3.	Early Clinical Exposure has increased my attention in the class.
4.	Early Clinical Exposure helped me to understand the topic better.
5	Early Clinical Exposure motivated me to read more about the topic.
6	Early Clinical Exposure helped me in better retention of the topic.
7	Early Clinical Exposure will help me in better recalling of the topics.
8	Early Clinical Exposure helped me in correlating basic with clinical sciences.
9	I am satisfied with the involvement and guidance of teacher in Early Clinical Exposure.
10	I would like to learn other topics with this intervention i.e. Early Clinical Exposure.
11	It encouraged me to participate more in such type of teaching methods.

**Table 2: Classification of responses of students to open ended questions**

S. No.	Category	Comments
1.	Enlist three good points about Early Clinical Exposure as method of teaching-learning.	<ul style="list-style-type: none"> <li>• Easy to recall the things. Makes topic easier. <ul style="list-style-type: none"> <li>• More Visualization.</li> <li>• Better understanding.</li> </ul> </li> <li>• It is very helpful to more clear a topic.</li> <li>• These ways of teaching make class more interesting.</li> </ul> <p>I am more attentive during the ECE classes because it is actually very interesting for me.</p> <ul style="list-style-type: none"> <li>• Application based learning by directly connecting with cases of patients.</li> <li>• Practical exposure helps us to retain information to longer duration.</li> </ul>
2.	Attributes of Early Clinical Exposure that you liked the most in development of interest in the subject.	<ul style="list-style-type: none"> <li>• Direct correlation with clinical aspects.</li> <li>• We can encounter with actual situation.</li> <li>• Because it shows actual clinical condition in audio visual way.</li> <li>• Interviewing patients, doctor patient relationship.</li> </ul>
3.	Attributes of Early Clinical Exposure that you liked the most regarding retention of knowledge.	<ul style="list-style-type: none"> <li>• By seeing live videos.</li> </ul> <p>By seeing that disease symptoms on patient we can imagine how fatal it is And also easy to understanding.</p> <p>Real time diseased condition visualization help us learn and retain more easily and quickly.</p>
4.	Attributes of Early Clinical Exposure that you liked the most regarding correlation of basic with clinical science.	<ul style="list-style-type: none"> <li>• Relating topic with clinical science becomes a little bit easy.</li> <li>• Teaching method like video, patient examination.</li> <li>• Actual interaction of bookish knowledge with actual clinical condition.</li> </ul> <p>In the very first year it is always a good learning experience to seeing and understanding the patients and understanding the applied part of different things.</p>
5.	Suggestions that could be added or deleted for Early Clinical Exposure to make learning more effective.	<ul style="list-style-type: none"> <li>• Frequency of early clinical exposure should be increased.</li> </ul> <p>Medical study is more about treating abnormalities. In our daily practicals (for example cadaveric dissection )we study about normal structures. If we could see the complications of each topic in ECEs it would sharpen our medical knowledge.</p>

**Table 3: Comparison of mean post-test scores of didactic lectures and ECE.**

S. No.	Teaching/ Learning Method	Post-Test Marks (10) Mean±SD	p-value
1.	Didactic Lecture	7.31±1.32	<0.0001 (Significant)
2.	Early Clinical Exposure	8.14±1.27	

The mean post test score of the Phase I MBBS students after the ECE sessions was higher as compared to the post test score of the students after traditional didactic lecture and the difference between the two values was statistically significant with  $p < 0.0001$ .

#### Discussion

NMC introduced Competency Based Medical Education (CBME) for undergraduate curriculum for the Indian Medical Graduate (IMG) in 2019. The CBME contain Early Clinical Exposure (ECE), SDL, AETCOM, Foundation Course, Electives for formation of good IMG. Through the CBME the IMG must be a good clinician, leader, communicator, lifelong learner and professional. Incorporation of ECE in the CBME plays a big role to fulfill these goals for IMG. Early Clinical Exposure (ECE) provides a clinical context and relevance to basic sciences learning[3]. The objectives of ECE is to recognize the relevance of basic sciences in diagnosis, patient care and treatment along with enhance basic science learning and recognize attitude, ethics and professionalism in the Phase I MBBS students. To achieve these objectives ECE has three elements basic sciences correlation, clinical skills and humanities. These three element can be achieved by the proper planning activities such as case scenario, videos, simulated patients, charts, experience with human context in OPD/Wards and AETCOM for the Phase I MBBS students[2]. Through this study it was observed that the modules of ECE sessions were very well acceptable to the Phase I MBBS students and had an impact to the extent that they strongly agreed that the ECE is an interesting method of teaching learning, created interest in the subject/topics, increased attention in the class, helped to understand the topic better and helped in correlating basic with clinical sciences. This is similar to the findings of Ramachandran K who concluded that students understood clinical anatomy better with ECE[4]. Aggarwal et al. reported that 71.5% of students were in favour of ECE being conducted for other topics which is similar to

our findings. ECE helped the students to be sensitized to the clinical setting[5].

#### Conclusion

Phase I MBBS students perceived the ECE sessions of Human Anatomy very well. It improved learning and performance of students by better retention of the topics and increased interest in Human Anatomy. Students agreed that the ECE sessions of Human Anatomy helped them in understanding the correlations of applied anatomy of these topics.

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