

ACCEPTANCE OF EARLY CLINICAL EXPOSURE (ECE) SESSIONS BY THE FIRST PROFESSIONAL M.B.B.S STUDENTS: STUDENTS' PERSPECTIVE

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Abstract

Background: Early clinical exposure (ECE) is a critical component of modern medical education, providing students the opportunity to participate in patient care from the earliest stages of their training. It is one of the endeavours of the Indian Medical Education regulatory body, the National Medical Commission (NMC) to produce Indian Medical Graduates who may be locally efficient and globally relevant. **Materials and Methods:** This observational, cross-sectional study was conducted in the Department of Physiology, SHKM GMC, Mewat, Haryana using a questionnaire comprised of ten questions including both open and closed-ended questions. The content validity index method was used to assess the validity of the questionnaire. After briefing students about the ECE, a session was conducted in both classroom and hospital settings. After attending the ECE session, students were given the questionnaire through Google Forms. Data was analyzed using SPSS version 22.0 and tests were done at a significance level of 5%. **Result:** In the model fitting method all the questions were found appropriate significantly with significance < .001. Though the overall concept of ECE is appreciated by 58.1%, only 28.6% strongly appreciated. However, exposure to hospital settings in the first professional year was appreciated by 98%. 40% disagreed with duration of the class. **Conclusion:** A larger chunk of students perceive that the ECE will increase their understanding of clinical concepts to acquire better clinical acumen in the future. Though ECE is an appreciable step by NMC it needs more elaborative guidelines for faculties regarding its implementation to provide the desired result for which it is designed.

INTRODUCTION

Early clinical exposure (ECE) is an old concept in developed countries but very lately introduced in the Indian subcontinent. Revisiting the history it was eminent that, in 1910 the USA based educationist Abraham Flexner, in his famous Flexner's report, laid the recommendation of pedagogic model as the basis of medical education i.e. two years of preclinical studies followed by two years of clinical training. However towards the end of twentieth century, expectations increased with patient-centric approach. The European Federation of Internal Medicine, the ACP-ASIM Foundation and the ABIM Foundation together launched the Medical

Professionalism Project in late 1999. Consequently in their report (2002), they highlighted three fundamental principles i.e. patient welfare, patient autonomy and social justice. In 1993, UK's General Medical Council introduced clinical teaching in early years for more contextual medical training.^[1]

In 1998, World Medical Federation advocated for vertical integration of clinical and preclinical subjects with early exposure of students to the patients.^[2] In 2010, Hughes Medical Institution and Lancet report advocated for Competency Based Medical Education (CBME) and ECE. The regulatory body for medical education in India i.e. National Medical Commission (NMC) in 2019

introduced CBME which included ECE within preclinical years of MBBS curriculum.^[3]

With increasing research, curriculum gradually transformed into more professional and active learning based and the same was adopted by India too.^[4,5] ECE is a critical component of modern medical education, providing students with the opportunity to observe and participate in patient care from the earliest stages of their training.^[6] ECE programs aim to bridge the gap between classroom learning and real-world clinical practice, enabling students to gain valuable hands-on experience of clinical skills from experienced healthcare professionals.^[7,8]

It is clear that the ECE is no doubt a better modality of medical teaching for understanding of clinical acumen. However, very limited literature is available regarding the students' acceptance the way the institutes are implementing the ECE. Hence the current study is designed to assess the acceptance level of the ECE by the 1st professional M.B.B.S students.

MATERIALS AND METHODS

Study design and settings: Observational, Cross-sectional study conducted in the Department of Physiology in 2024.

Study subjects: Subjects were selected by convenience sampling method i.e. all the 1st year M.B.B.S students admitted in the session 2023-24, who attended E.C.E sessions were recruited for the study. 105 out of 120 students participated in the study. The sample size corresponded to the confidence level of 95% with a 9% margin of error of the study, as calculated by the software, calculator.net, based on Lawshe (1975) formula. The age group varied from 17 to 20 years.

Data collection tool and technique: A Questionnaire was developed comprising of some open and close-ended questions regarding the ECE class on the topic of blood banking. The questionnaire was given to the five faculties of the Department of Physiology for validation. The questionnaire was refined to enhance comprehension by summing up and incorporating the opinions submitted by the faculties. The content validity index was calculated and only the questions scoring content validity index ≥ 0.8 were selected for the questionnaire.

Finally a questionnaire comprising of seven close-ended questions (yes and no based), one-closed ended question based on five point Likert scale and two open-ended questions, was formatted in Google Docs.

The questionnaire tool was as below:

1. Do you think Early Clinical Exposure will be a better mode of learning than only the theory and practical classes?
2. Do you think Early Clinical Exposure is appropriate to be included in the 1st year of the M.B.B.S curriculum?

3. Do you think the class duration of Early Clinical Exposure (3 hr) is appropriate?
4. Do you think hospital visit component will help in better understanding?
5. Do you think Early Clinical Exposure will better correlate the clinical skills with basic concepts?
6. Do you think Early Clinical Exposure will help in better development of clinical skills?
7. Do you think Early Clinical Exposure will help in development of other skills like communication, collaboration etc.?
8. Do you agree with the Early Clinical Exposure concept of NMC, rating it on the scale of 1-5?
9. Point out the lacunae if any in the ECE structure.
10. Share any suggestion to improve the ECE structure.

ECE Class was conducted as prescribed by NMC in the Department of Physiology in Collaboration with blood bank. Before starting the class, a brief overview and insights about the ECE were given to the students by the Principal investigator through a Power Point presentation. Then the students were given a brief presentation in the lecture theatre about the functioning of blood bank. Afterwards, participants visited to the blood bank of the institute in small groups, where they were exposed to the various methods and procedures performed in real life scenarios which were explained by the concerned technicians. After the ECE class, the students were asked to fill the questionnaire through Google Docs.

Data analysis

All the data were checked, edited and coded for computer entries. After compilation of collected data, data was entered in Excel. Analysis was done by using the Statistical Program for Social Sciences (SPSS) Version 20. Appropriate statistical tests were used during analysis of the data. Two open-ended questions (S. No. 9 and 10) were assessed by the authors to extract the main idea of each statement provided by the students.

Ethical considerations

Present study was carried out after getting approval from the Institutional Ethics Committee (SHKM/IEC/2023/28).

RESULTS

Out of 120 students of M.B.B.S batch 23-24, 112 were present in the ECE class. Out of 112, only 105 students participated in the study and submitted the Google document of questionnaire.

[Table 1] summarizes the responses to first seven close-ended questions depicting that 97.14% (102/105) were of the view that ECE is more effective for learning than only theory and practical classes. 96.19% believed that it is appropriate to include ECE in the 1st year of the MBBS curriculum. Although 60% (63/105) felt that the

class length is appropriate for proper synthesis and absorption of the concepts, yet a significant portion of students, 40% (42/105) perceived that the time period is too long. Additionally, 96.19% (101/105) agreed that ECE would lead to better correlation of preclinical science with clinical practice. Moreover, 98.09% (103/105) emphasized that implementing ECE in a hospital setting is a more effective method than classroom discussions. 97.14% (102/105) agreed that it will help develop better clinical skills in the future. 93.33% (98/105) also opined that it will enhance not only clinical skills but other soft skills too, such as communication and collaboration. Except the duration of class, all the other aspects of ECE were positively appreciated by more than 90% of the students [Figure 1].

[Table 2] summarizes the responses to question no. 8 about the overall acceptance of the ECE concept on a five-point Likert scale. Only negligible percentage of students 1.9% (2/105) strongly disagreed to the concept. Though 58.1 % (61/105) agreed and 28.6 % (30/105) strongly agreed (in total 86.7 %) that ECE is overall a better concept to be included in the curriculum.

Specific opinions derived from the open-ended questions were summarized as below:

1. The topic of ECE must be informed to the students well in advance so that they could better understand the concept.
2. ECE classes should be held in the hospital settings more preferably.
3. The duration of teaching in hospital settings may be increased, curtailing the lecture theatre time.
4. A single patient must not be allotted to more than 15 students. This hampers the student-patient interaction.
5. Two short breaks must be included in the whole period of time as a three hour time duration is too lengthy.

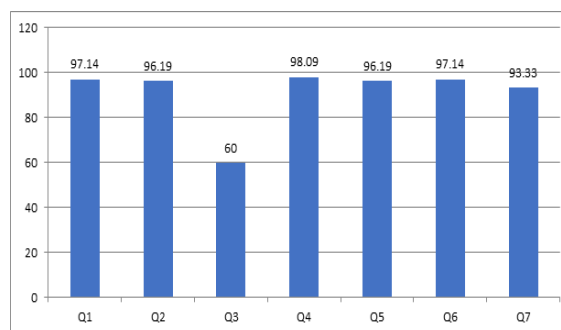


Figure 1: Percentage of responses of students (105) for the first seven close-ended questions

Table 1: Responses to the different aspects of ECE by the students (105).

Sr. No.	Close-ended Questions	Yes		No	
		Number	%	Number	%
1.	Do you think Early Clinical Exposure will be a better mode of learning than only the theory and practical classes?	102	97.14	3	2.86
2.	Do you think Early Clinical Exposure is appropriate to be included in the 1st year of the M.B.B.S curriculum?	101	96.19	4	3.81
3.	Do you think the class duration of Early Clinical Exposure (3 hr) is appropriate?	63	60.00	42	40.00
4.	Do you think hospital visit component will help in better understanding?	103	98.09	2	1.91
5.	Do you think Early Clinical Exposure will better correlate the clinical skills with basic concepts?	101	96.19	4	3.81
6.	Do you think Early Clinical Exposure will help in better development of clinical skill?	102	97.14	3	2.86
7.	Do you think Early Clinical Exposure will help in development of other skills like communication, collaboration etc.?	98	93.33	7	6.67

Table 2: Perception Percentage of Overall Acceptance for the ECE Concept By 105 students

Likert scale	Frequency in number	%
1 (strongly disagree)	2	1.9
2 (disagree)	3	2.8
3 (not disagree not agree)	9	8.6
4 (agree)	61	58.1
5 (strongly agree)	30	28.6
Total	105	100.0

DISCUSSION

By exposing students to clinical environments early on, ECE programs can help to shape their attitudes towards patient care, instil a sense of professionalism, and foster empathy and compassion. Specifically, in the context of first-year MBBS students, ECE involves exposing students to clinical settings and interactions with patients during the first few months of their medical education so

that basic subjects must be learnt in the prospect of the clinical practice, not just to pass the first professional examination only.

Early clinical exposure can take many forms, such as shadowing experienced clinicians, observing patient consultations, and conducting basic clinical assessments under supervision. The goal of ECE is not to turn first-year students into medical professionals overnight, but rather to provide a foundation for future learning and instil a patient-

centric approach to medicine early on in their education.

It has been realised that making a well-qualified doctor is the most complex process and organizing the curriculum is even more complex than that.^[9] Tayade et al., in their comparative study on 820 students, observed that this method motivated students to learn preclinical concepts in addition to developing their skills. The students were enthusiastic about learning, as the practical application was demonstrated alongside the theoretical knowledge.^[10]

Similar results were observed by Sawant et al,^[11] Vyas et al.^[12] The ECE module no doubt inflames greater motivation in the medical students. The present paper evaluated the acceptance of the students towards the new method of study i.e. introduction of clinical training in early years of the MBBS curriculum.

ECE is nothing but a method of vertical integration of the clinical department through a real life case with the pre clinical department through a theoretical disease concept. The students learn well as they are able to appreciate the practical application of the theoretical concept.^[13,14] The concept is well in accordance with Kolb's learning theory where it was stated that "Learning is the process whereby knowledge is created through the transformation of experience."^[15]

Students in the current study expressed explicitly that no doubt it will develop clinical acumen in a better way than only through didactic lectures. However the ECE must be conducted preferably in hospital settings. Başak et al. similarly predicted in their study that ECE training should occur more frequently in primary care settings, general practice clinics, department outpatient clinics, and hospital wards, with only a few programs taking place in the community.^[16]

Tayade et al. also defined four roles for students in hospital-based ECE: 1. Passive observer, where the student only observes doctor-patient interactions, OPD procedures, surgeries, etc.; 2. Active observer, where the student not only observes but also takes notes on the checklist and records instructions to be given to patients; 3. Actor in rehearsal, where the student practices procedures like IM injections or catheterization under supervision; and 4. Actor in performance, where the student actually performs or assists in a procedure.^[17]

The hospital setting execution solves or inspires many other aspects e.g. the students relate themselves with their future role of Physician. They also relate with their future responsibilities and are inclined towards the profession.^[18,19] Not only that, but many clinical problems also were learnt well in connection to the preclinical knowledge preparing the students for future up to date clinician.^[15,20]

The ECE method not only provides future intellectual soft skill development but also, the students find it one of the most enjoyable and interesting modes of teaching preclinical subjects.

Many researchers reported the fact.^[21,22] McLean in addition reported that the students found the ECE method more stimulating as a study method.^[23]

Many researchers also reported that the students develop an empathetic attitude towards the patient care as they were exposed to their role model physicians taking care of their patients in an ideal condition.^[24,25]

One view was accepted from various studies including the present one that the early year exposure influences the learning of the students positively. It was found that to make the MBBS curriculum more clinical oriented and contextual to the real world, the concept of ECE was introduced.

Overall, early clinical exposure is a valuable component of modern medical education, allowing students to gain valuable practical experience and develop key skills that will serve them throughout their careers as physicians. It involves giving students the opportunity to observe and participate in clinical settings from the very beginning of their medical training. This exposure is designed to help students better understand the practical aspects of preclinical concepts, while also allowing them to see first-hand how their theoretical knowledge is applied in real-world scenarios. Through early clinical exposure, students can develop important skills such as communication, professionalism, and clinical reasoning, all of which are critical for success in the medical profession. In this context, early clinical exposure can be seen as an essential tool for preparing first-year medical students for the challenges of their future clinical practice.

Limitations in implementing the ECE:

1. Lack of motivation of the faculties, as the process is quite complex and requires extra efforts.
2. Identification of the relevant preclinical concepts for ECE classes.
3. Support of the concerned clinical department, as most of the departments are understaffed, especially in a Government set up.
4. Managing a huge batch in the hospital wards at a time.

Limitation of the present study: The major limitation was same as observed by Mahboobeh Khabaz Mafinejad et al, that the reflections were recorded just after the class, when the students were totally occupied by the noble exposure of the class. It had given them hardly any time to assess the class at their own conscious level.^[26]

CONCLUSION

The benefits of early clinical exposure for medical students will be fruitful only if the institutes implement the same with the true spirit. The challenges and difficulties must be taken into account while designing and implementing the ECE program. The students no doubt have a great degree of acceptance towards this type of learning module,

however faculties they must be well trained and motivated enough to implement the module with its underlying spirit.

The authors with their experience want to extend the following recommendation for the regulatory bodies:

1. The regulatory bodies must identify and notify the topics suitable for the ECE for the institutions.
2. Elaborated guidelines should be developed for the implementation of ECE, preferably at the hospital settings.
3. The medical faculties must be trained in regional centres regarding the procedure of implementation of ECE.
4. The regulatory bodies also should develop a feedback system to collect the ground level views regarding implementation of the ECE module.
5. Annual review of the module must be done at the end of each academic session by the regulatory bodies.

The implementation of ECE shall not only develop the clinical skills in a better way but also other skills like communication, coordination, leadership etc. This type of teaching will transform a raw science student to contextual clinician with smoothness for a future professional life.

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