



Original Research Article

Early clinical exposure as perceived by Ist year MBBS students during online sessions - A necessity in Covid era

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ABSTRACT

Background: New CBME curriculum has laid emphasis on early clinical exposure (ECE) in the current year. Thirty hours are dedicated in the curriculum in first year for ECE. Due to Covid-19 pandemic that started in march 2019 the students could not be taken to hospitals for their ECE sessions and all the teaching and practical sessions were shifted to online sessions. So it was decided to give the students ECE through online classes. As it was a totally new experience for both the students and the faculty to take all classes online. A feedback was taken from first year students regarding their first experience for taking the ECE sessions online.

Aim: Introduce the online session for ECE in First year MBBS during the Covid era.

Materials and Methods: A prospective study was done on 90 first year MBBS students who consented for this study in Department of Anatomy, HIMS, Delhi after getting approval from Institutional Ethical committee. The duration of study was of four months that is between September 2020 to December 2020. ECE sessions were taken for 2 topics i.e foot drop and varicose veins by online mode during the lockdown due to the pandemic. ECE modules for the topics were prepared and sessions were conducted as recommended by MCI. The learning objectives were set and total duration of each session was 3-4 hours. The Questionnaire was prepared and the feed back of these sessions was taken by google forms and statistical analysis was done.

Results: Majority of the students (97%) responded that ECE module was helpful. 66% responded that videos shown in the session has helped them to learn more. 29% students were of opinion that the discussion part of the session has helped them to learn the topic better. 89.2% found the ECE module in making the topic interesting and 49.2% students were of opinion that online sessions should be conducted along with classroom settings.

Conclusion: The students recognized the importance of online ECE sessions during pandemic. They found these sessions helpful. They found the videos related to clinical cases more useful and helped them in making the topics interesting and motivated them further to read the topic.

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1. Introduction

Early clinical exposure is a teaching learning methodology where the medical students are exposed to the real patients or clinical cases as early as in the beginning of their first professional year.¹ The main aim of ECE is that the student can understand the relevance of the topics taught in the basic sciences. Didactic lectures if supplemented by clinical

material can help in better retention of the topics by the students.² If the students are taken to the hospital settings then students can develop fundamental clinical skills and moral attitude too. This will further help in motivating the students for medical profession.³ National medical council in its new regulation has put forth Graduate Medical Education regulation where its sole aim is to provide training to medical graduate so that they can recognize the health needs of the society along with helping the student to become a leader, good communicator, life long learner

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and become a good clinician.¹ The new curriculum is competency based and ECE forms an important component of this curriculum. As all the universities including medical colleges were closed during the pandemic, the 1st year students could not be taken to hospitals for ECE sessions. ECE sessions were then taken by using online platform i.e. Zoom and relevant you tube videos for clinical cases were shown for these sessions. Online teaching and learning is also known as e learning or internet based learning where the internet is used for the purpose of imparting education. The effectiveness of online platform has been demonstrated as compared to traditional didactic lectures.⁴ E learning resources are also easily accessible and can facilitate on demand learning too.⁵ Even the teachers have had the experience of online teaching and learning during various faculty development programmes.^{6,7} It has been well documented that interactive web based tutorials are very effective for cognitive learning of students as compared to traditional didactic lectures.⁸ Evaluation of competencies through online assessments is also possible through online mode which can help in giving feedback to the students so that they can show improvement.²

Not only this interaction is also possible by using online platform which can be between the learner to content, learner to instructor and learner to learner which also ensures the self directed learning among the students.³

2. Materials and Methods

A prospective study was done on 90 first year MBBS students who consented for this study in Department of Anatomy, HIMSR, Delhi after getting approval from Institutional Ethical committee. The duration of study was of four months that is between September 2020 to December 2020 ECE sessions were taken for 2 topics i.e foot drop and varicose veins by online mode during the lockdown due to the pandemic. Only 90 students could participate in these sessions. ECE modules for the topics were prepared and sessions were conducted as recommended by MCI. The learning objectives were set and total duration of each session was 3-4 hours which was distributed as follows:

3. Introduction and instruction to students -20 mins.

Exposure to clinical context and discussion -90 minutes.

Summary and conclusion-10 minutes.

Reflection- 30 minutes.

Assignment- 30 minutes.

The topics for ECE were Foot drop and varicose veins. The relevant you tube videos of clinical cases were shown to the students. The patients showing the signs and symptoms of Foot drop were shown in the videos. The clinical condition was discussed giving emphasis on the anatomical basis of this condition including a brief discussion on treatment part too.

For the second case an animated video of varicose veins along with the actual patient showing signs and symptoms was shown to the students. The anatomical basis of this condition along with the examination steps for diagnosing varicose veins e.g. Tredelenberg's sign was discussed with the students. The sessions were made as interactive as possible and students were asked to reflect on what was learnt in the session. At the end students were given assignments on the topics. Formative assessment was done with the help of google forms where case scenarios were included along with MCQs on these topics. Prevalidated questionnaire was prepared and the feedback of these sessions was taken by google forms and statistical analysis was done. The Questionnaire included both open and closed ended questions. The closed ended questions were to assess the perception of students about ECE session and open ended questions were for their suggestions to improve the session as well as for the facilitating factors and barriers in attending online ECE sessions.

The questions included in the feedback were:

1. How helpful has the ECE module been in improving your knowledge?
2. Which components of the program helped you to learn?
3. Did ECE module make learning basic science subjects more interesting?
4. Are you motivated to read further on this topic as a result of participating in ECE?
5. Do you think online sessions can be adopted for ECE?
6. Do you think online sessions should be conducted along with classroom teaching?
7. What are your suggestions for improving online sessions?
8. What are the barriers which hinders you in attending online sessions?
9. What are the facilitating factors for attending online sessions?

Formative assessment was taken at the end of the ECE sessions by giving a case scenario on these clinical conditions

4. Results

4.1. Total of 90 students participated

1. ECE was helpful in improving knowledge about the topic. As shown in Figure 1 Majority of the students (97%) responded that ECE module was helpful and 3% were of opinion that ECE was not helpful.
2. When asked about which component of the session has helped them to learn more about the topic. As shown in Figure 2 majority (66%) responded that videos shown in the session has helped them to learn more. 29% students were of opinion that the discussion part of the

session has helped them to learn the topic better. Only 4% students found assignments to be helpful in their learning.

3. Figure 3 shows that 89.2% found the ECE module in making the topic interesting whereas 9.2% were not sure about this. Only 1% of the students did not find ECE helpful in making the subject interesting.
4. Figure 4 shows that 72.3% students were motivated to read further by the session whereas 26% could not decide whether it has motivated them or not for further reading. Only 1% students were not motivated at all for further reading after the session.
5. When asked whether online sessions can be adopted for ECE. As shown in Figure 5, 4% students were of opinion that online sessions can be adopted in future for ECE whereas 43% were not sure about adopting online mode for ECE. 7% students said no for adopting online mode for ECE.
6. When asked whether they think online sessions should be conducted along with classroom settings? As shown in Figure 6, 15% students were of opinion that online sessions should be conducted along with classroom settings & 46.2% students were not sure about this. 38.5% students did not want online sessions to be conducted along with classroom settings.
7. Suggestions given by students for the ECE sessions were:
 - a. More videos to be shown related to the topic
 - b. Demonstration on affected patient
 - c. More animated videos
 - d. Real case studies
 - e. Time limit to be restricted to 45 minutes as that is the attention span:
8. The various barriers to the online ECE sessions as mentioned by the students from feedback questionnaire were:
 - a. Connectivity issues
 - b. Family disturbances in the surrounding
 - c. Poor internet connection in remote areas
 - d. Unavailability of stable wifi/data connection
 - e. Eye strain:
9. Positive comments of the students towards attending online ECE sessions from feedback questionnaire are as follows:
 - a. Easily attend the classes at comfort of home in crisis time eg: in lockdown period
 - b. Easy to access
 - c. Videos shown are quite helpful, informative, engaging and help to learn better
 - d. Presentations are clearly visible as compared to offline didactic lectures in college
 - e. 3D animations help us visualize and hence better correlation of the topics
 - f. Better understanding

- g. Interest in subject
- h. Time in commuting is saved as compared to offline classes
- i. Feels productive having one to one interaction
- j. Promoting social distancing and hence reducing the risk in pandemic situation
- k. Helping in orientation and keeping one more motivated e.g. more psychological support during lockdown.
- l. Lectures can be recorded on phones.
- m. Syllabus is getting covered even in this lockdown situation
- n. Teachers are clearly audible
- o. Flexibility of lesson

At the end of the ECE module formative assessment which was having problem based question was given to the students of 25 marks was given to the students. 90% of students scored marks between 20 to 25 marks with an average of 22.5 marks and median of 23 marks as shown in Figure 7.

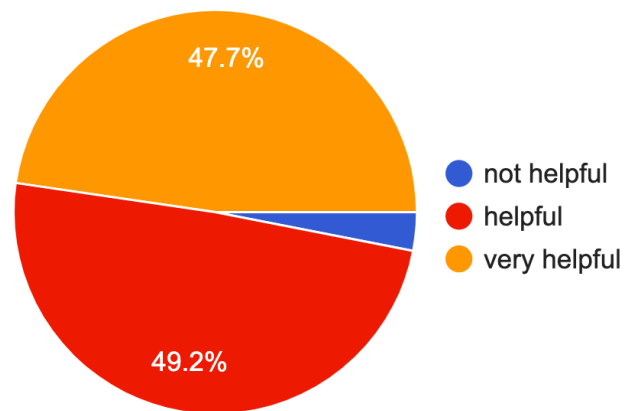


Fig. 1: showing in blue colour as not helpful(3%), red colour as helpful (49.2%) and orange colour as very helpful(47.7%)

5. Discussion

The key principle behind ECE is to provide a clinical context and ensure patient centricity. This does not mean that conventional clinical teaching should be preponed but the main purpose is to provide better understanding of basic sciences through clinical context.¹ ECE sessions can be taken in classroom settings, hospital settings and community settings. The initial ECE sessions were taken in class room settings and community settings but few hospital based ECE sessions were left to be covered when the pandemic struck in the second half of the first year MBBS. Due to the pandemic all the classes were shifted to online mode. As the students could not be exposed to the real patients the ECE sessions were also taken online.

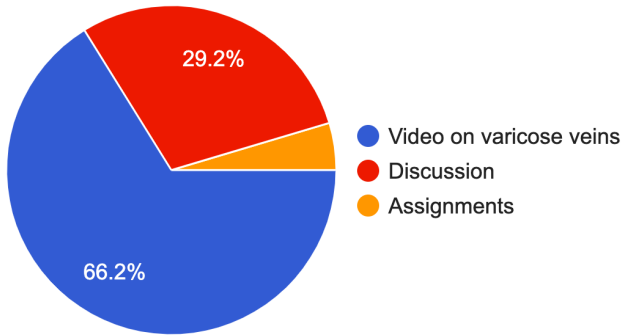


Fig. 2: showing the response of students where blue color depicts video on varicose veins(66.2%), red color shows discussion on the topic (29.2%) and orange color as assignments(4%)

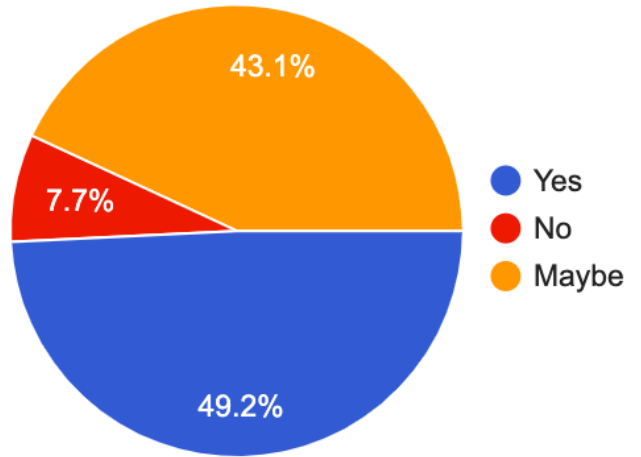


Fig. 5: showing blue color as response yes (49.2%), red color as response no(7.7%) and orange color as response may be (43.1%)

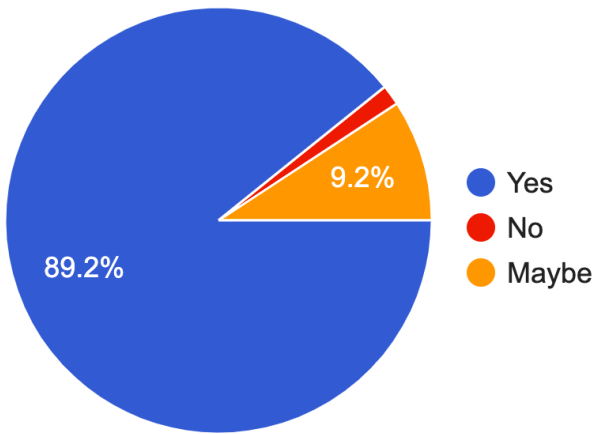


Fig. 3: showing blue color as response yes (89.2%), Orange color as response may be(9.2%) and Red as the response no(1%)

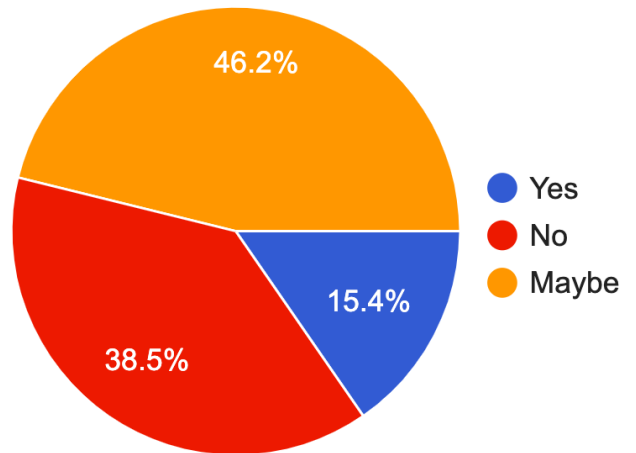


Fig. 6: showing blue color as response yes(15.4%), red color as response no (38.5%) and orange color as response may be (46.2%)

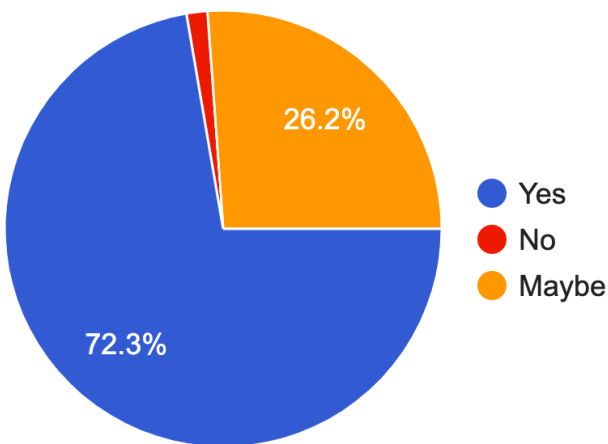


Fig. 4: showing blue color as students response Yes (72.3%), red color as response no(1%) and orange color as response may be (26.2%)

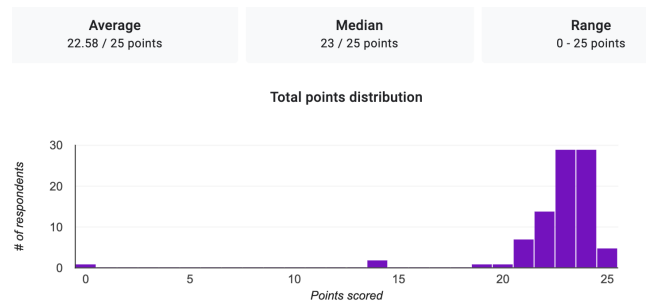


Fig. 7: showing 90% of students scoring in the range 20 to 25 marks and an average showing 22.5 marks

The feedback towards ECE by online mode is in accordance with the other studies where the attitude of medical students towards ECE in learning endocrine physiology was studied. The students reported that ECE has increased their interest for the subject and also enhanced their understanding for the subject. ECE has also enabled them to remember the subject in a better way.^{9,10}

In our study majority of the students i.e. 97% responded that ECE sessions has helped in improving their knowledge about the topic. 66% of students liked the videos shown on the particular clinical condition i.e foot drop whereas 29% of students liked the discussion part of the ECE session. 72% students were motivated to read further on the topic whereas 26% students were not motivated enough to read further on the topic. The reason for this could be that the students want to study on the real patient in a hospital setting. The students also suggested that simulated patients could be shown in the session. The simulated and standardized patients could not be shown in our study due to the lockdown.

A study which was conducted by Chouda Purkar et al where videos of clinical cases were shown to the students and they also found that video demonstrations of common clinical cases as an adjuvant to didactic lectures has helped the students in better correlation of basic sciences with clinical sciences.¹¹ The barriers to online ECE sessions were mainly connectivity issues and disturbances in the surroundings. Some students also complained of eye strain. The facilitating factors for online ECE sessions as mentioned by the students were that the students could easily attend the classes from their homes even in lockdown period. The students also perceived that the videos shown in the session were informative and engaging helping them to learn better. Students were also of opinion that presentations were clearly visible as compared to offline didactic lectures. Time in commuting is saved and more interactive sessions were also the facilitating factors.

6. Conclusion

Online learning has an advantage that the students can learn according to their own pace and provides a good opportunity for self directed learning too. In such a situation where students cannot reach the institute to study due to geographical and time barriers online teaching methods can be adopted for continuation of learning and new innovative methods of online teaching should be adopted for better learning of the students. In India, we have limited resources and infrastructure as far as didactic teaching practical classes are concerned so online teaching method can help in overcoming these shortcomings and can prove to be effective method for teaching students. But we should not completely depend on technology and it should act only as a supplement to didactic lectures and face to face practical sessions as these have their own advantages. The students

recognized the importance of online ECE sessions during pandemic. They found these sessions helpful and videos related to clinical cases more useful which helped them in making the topics interesting and motivated them further to read the topic. The students also were of opinion that online ECE sessions should be adopted in future too along with traditional offline lectures.

7. Source of Funding

None.

8. Conflict of Interest

The authors declare no conflict of interest.

References

1. Competency based undergraduate curriculum; 2020. Available from: <https://www.nmc.org.in/information-desk/for-colleges/ug-curriculum>.
2. Ellaway R, Masters K. AMEE Guide 32: e-Learning in medical education Part 1: Learning, teaching and assessment. *Med Teacher*. 2008;30(5):455–73. doi:10.1080/01421590802108331.
3. Saiyad S, Virk A, Mahajan R, Singh T. Online Teaching in Medical Training: Establishing Good Online Teaching Practices from Cumulative Experience. *Int J Appl Basic Med Res*. 2020;10(3):149–55.
4. Ruiz JG, Mintzer MJ, Leipzig RM. The Impact of E-Learning in Medical Education. *Acad Med*. 2006;81(3):207–12. doi:10.1097/00001888-200603000-00002.
5. Chin RYK, Tjahjono R, Rutledge MJR, Lambert T, Deboever N. The evaluation of e-learning resources as an adjunct to otolaryngology teaching: a pilot study. *BMC Med Educ*. 2019;19(1):181. doi:10.1186/s12909-019-1618-7.
6. Anshu, Bansal P, Mennin S, Burdick W, Singh T. Online faculty development for medical educators: Experiences from a south-Asian program. *Educ Health*. 2008;20:1–8.
7. Mahajan R, Badyal DK, Singh T. Online Faculty-Development Programme for Medical Teachers in Resource Poor Settings: Behind the Scene. *J Res Med Educ Ethics*. 2017;7(3):163. doi:10.5958/2231-6728.2017.00028.2.
8. Kumta SM, Tsang PL, Hung LK, Cheng JC. Fostering critical thinking skills through a web-based tutorial programme for final year medical students-A randomized controlled study. *J Educ Multimed Hypermedia*. 2003;12:267–73.
9. Sathishkumar S, Thomas N, Tharion E, Neelakantan N, Vyas R. Attitude of medical students towards Early Clinical Exposure in learning endocrine physiology. *BMC Med Educ*. 2007;7(1):1–7. doi:10.1186/1472-6920-7-30.
10. Walters MR. problem based learning in Endocrinology lectures. *Adv Phy Edu*. 2001;25(1-4):225–252.
11. Sheshgiri C, Komala N, Ashwini C. Early Clinical Exposure In Anatomy. *Natl J Integr Res Med*. 2017;8(5):53–56.

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