International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Bijwe AD et al. Int J Reprod Contracept Obstet Gynecol. 2024 Jul;13(7):1683-1687
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20241606

Original Research Article

Qualitative study of attitude and efficacy of first year students to early clinical exposure in ultrasound and orthopedics

Anand D. Bijwe[1], Smita A. Bijwe[2]*, Sameeullah B. A. Hassan[1], Minoti S. Pokale[1], Deepali G. Vidhale[1]

[1]Department of Anatomy, Dr. Panjabrao Deshmukh Memorial Medical College, Amravati, Maharashtra, India
[2]Department of Obstetrics and Gynecology, Dr. Panjabrao Deshmukh Memorial Medical College, Amravati, Maharashtra, India

Received: 06 May 2024
Revised: 02 June 2024
Accepted: 03 June 2024

***Correspondence:**
Dr. Smita A. Bijwe,
E-mail: smitabijwe@gmail.com

ABSTRACT

Background: Traditional Indian medical education limits first-year MBBS students to classroom settings, delaying clinical exposure until the second year. Early clinical exposure (ECE) aims to integrate basic sciences with clinical practice, enhancing student understanding and interest through direct patient interaction. Aim was to assess first-year MBBS students' perceptions of ECE. Objectives were to introduce clinical settings to first-year students, and to explore students' experiences and attitudes towards ECE.
Methods: The study was conducted at Dr. Panjabrao Deshmukh Memorial Medical College, Amravati, involving 100 first-year MBBS students. Ethical clearance and permissions were obtained. Students participated in bedside teaching in small groups over four weeks, focusing on clinical conditions and diagnostics. Observations in the radiology department included first-trimester ultrasounds with patient interaction. A qualitative approach using focus group discussions and a post-test questionnaire was employed.
Results: Learning and knowledge: 81% found ECE helpful, interest in topic: 75% reported increased interest, motivation: 84% felt motivated to learn more, correlation with clinical features: 60% found it helpful, ward rounds: 89% valued participation, knowledge sharing: 87% appreciated discussion opportunities, and overall utility: 79% recognized ECE's utility. Feedback indicated significant enhancements in learning, interest, and motivation, despite some neutral or negative responses.
Conclusions: ECE is a vital teaching tool that improves first-year MBBS students' understanding, motivation, and professional skills. Despite logistical challenges, its overall positive impact on medical education justifies its implementation.

Keywords: Early clinical exposure, Knowledge, Medical education, Medical students

INTRODUCTION

In the traditional Indian medical education system, first-year MBBS students are confined to classroom and laboratory settings, without exposure to real patients. This often results in a lack of engagement and perceived relevance of the basic science subjects being taught. Typically, students only begin clinical subjects in their second year.[1] Early clinical exposure (ECE) aims to address this gap by integrating healthcare settings and patient interactions into the curriculum from the first year. This approach helps students recognize the importance and applicability of basic sciences in clinical practice. ECE ensures that students can effectively link basic sciences, clinical sciences, and social functions—particularly the crucial aspect of doctor-patient interaction.[2]

Lectures are commonly used to convey information to large audiences, offering minimal risk to students and allowing instructors maximum control over the learning experience. However, this method fails to provide feedback on student learning and often results in students being passive recipients of information. Consequently, student attention tends to wane quickly after 15–25 minutes.[3]

Aim

Aim of the study was to know perception of first MBBS students to early clinical exposure.

Objectives

Objectives of the study were to introduce students to clinical set up early in first MBBS, and also to explore the experiences of the first year medical students and try to gain understanding into student's attitudes, feelings, and views about early clinical exposure.

METHODS

Study type

This was a qualitative study conducted to evaluate the perceptions and attitudes of first-year MBBS students towards early clinical exposure.

Study place and period

The study was conducted in the departments of orthopaedics and radiology at PDM Medical College, Amravati, from October 2014 to January 2015.

Selection criteria

The study involved 100 first-year MBBS students who provided informed consent to participate.

Procedure

Bedside teaching

Students were divided into small groups of 10-12 and participated in bedside teaching sessions in the orthopaedic wards. These sessions, held once a week for one hour over four weeks, introduced students to common clinical conditions and diagnostic methods.

Radiology department observations

In the radiology department, students observed first-trimester ultrasounds and discussed the various structures visualized. They were also given opportunities to interact with patients to enhance their learning experience.

Data collection

A qualitative approach was used to understand students' experiences and attitudes. Fifteen students volunteered for focus group discussions, from which themes emerged and were categorized. Additionally, a post-test questionnaire was administered to gather further data on student perceptions.

Statistical analysis

The data collected from the focus group discussions and post-test questionnaires were analyzed to identify common themes and patterns in student feedback. Descriptive statistics were used to summarize the responses.

Some participants' reactions were as follows: today's topic sparked interest in the subject and clarified our concepts. We generally understand and learn more when we can see things. We were previously unaware of the patients' pains and complaints. Being able to analyze and think makes the subject easier for us. Seeing things rather than imagining them makes it easier to study and expand our knowledge. Seeing real patients brings confidence and interest to our studies. Throughout the year, we study using cadavers, so we were not aware of the patients' actual pains and complaints. However, one participant had a negative perception of ECE, stating they were unprepared for the pain and sorrow of patients, leading to feelings of distress and crying at home after classes.

RESULTS

Helpful in learning and gaining knowledge

The majority of participants found this aspect beneficial, with 37% strongly agreeing and 44% agreeing, while 14% remained neutral. A small percentage disagreed 4% or strongly disagreed 1%.

Table 1: Demographic data of participants.

Gender	Mean age
Male 54	18 years 8 months
Female 46	18 years 9 months
Total	100

Increase interest in topic

A significant portion of participants reported increased interest, with 34% strongly agreeing and 41% agreeing. However, 16% were neutral, 7% disagreed, and 3% strongly disagreed.

Motivation toward learning more

This item received the highest level of strong agreement at 52%, with 32% agreeing. Only 12% were neutral, while 3% disagreed and 1% strongly disagreed. Help in

correlating with clinical features: 40% of participants strongly agreed and 20% agreed that it helped in correlating with clinical features. However, 20% were neutral, 16% disagreed, and 4% strongly disagreed.

Table 2: Students' perceptions of early clinical exposure.

Items	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)
Helpful in learning and gaining knowledge	37	44	14	4	1
Increase interest in topic	34	41	16	7	3
Motivation toward learning more	52	32	12	3	1
Help in correlating with clinical features	40	20	20	16	4
Usefulness of participation in ward rounds	56	33	9	2	0
Providing opportunities to discuss and share knowledge	21	66	11	1	1
Utility of early clinical exposure and providing more experiences	49	30	8	2	1

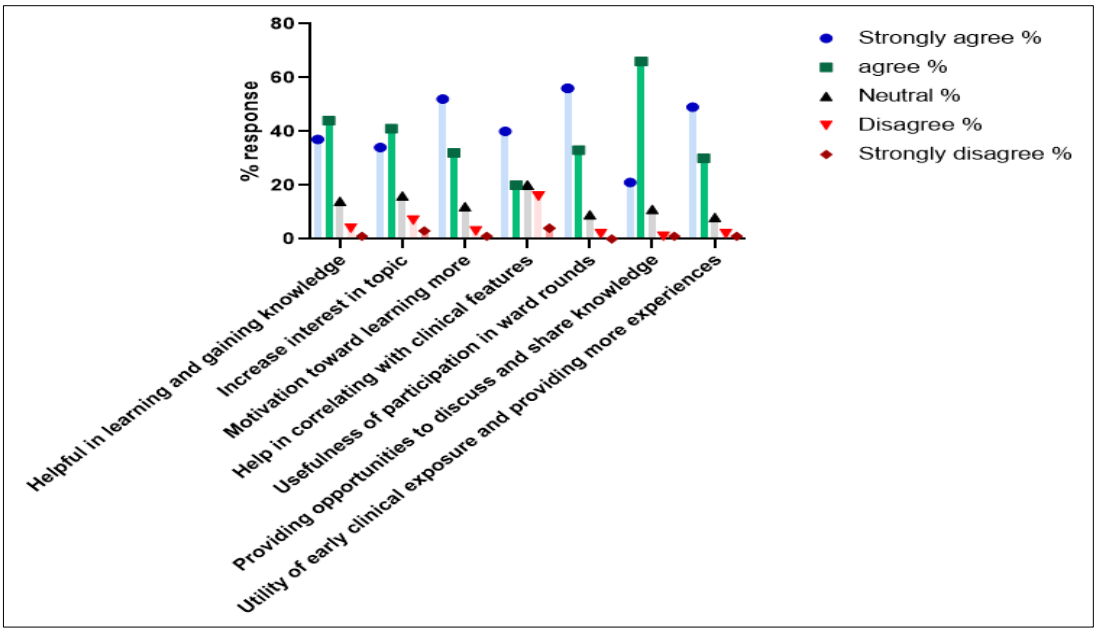

Figure 1: Distribution of students' responses to early clinical exposure.

Usefulness of participation in ward rounds

Participation in ward rounds was highly regarded, with 56% strongly agreeing and 33% agreeing. Only 9% were neutral and 2% disagreed, with no strong disagreements.

Providing opportunities to discuss and share knowledge

21% strongly agreed and 66% agreed that it provided useful opportunities for discussion and knowledge sharing. A smaller portion were neutral (11%), disagreed (1%), or strongly disagreed (1%).

Utility of early clinical exposure and providing more experiences

49% strongly agreed and 30% agreed on the utility of early clinical exposure. There were 8% neutral responses, 2% disagreed, and 1% strongly disagreed.

Feedback indicated that ECE was perceived positively by students and could provide a framework for integration of basic sciences with clinical subjects for the medical students. Feedback from students was very positive.

DISCUSSION

Early experience helps medical students relate actively to their profession. It helps them understanding subject and makes their learning more real and relevant. Learning is an active process and students who learn actively may learn better than passive learners.3 In another study, feedback from medical students on teaching of gross anatomy suggested that 90% of students felt the need for an enhanced stress on clinically oriented anatomy.4 It has potential benefits for stakeholders, notably teachers and patients. It can influence career choices.[5]

The changing trends in health care and medicine are giving birth to corresponding rapid changes in the content and process of medical education.[6] Spencer et al observed that direct contact with patients can be seen to play crucial role in the development of clinical reasoning, communication skills, professional attitudes, and empathy.[7] 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.[8] Tayade et al carried out a cross-sectional study was carried out amongst 820 students for three years duration, concluded that early clinical exposure is a crucial teaching tool for improving attitudes and professional skills in the current Indian medical education setup.[9]

Kar et al conducted a similar study on 150 first-year MBBS students, using ECE as a learning tool to teach neuroanatomy. The study found a significant improvement in student performance following ECE. A potential challenge in implementing ECE is the need to identify and coordinate with supportive clinical departments and cooperative patients. Additionally, ECE requires more workforce, infrastructure, and extra effort from faculty, which can be a drawback.[10] Das et al, the marks of each group in pre- and post-tests showed significant differences ($p<0.05$ in each case). Post-test marks were significantly higher in each group, with a notably greater level of improvement in the study group ($p=0.01$). While there was no significant difference in the pre-test marks between both groups ($p=0.73$), post-test marks were significantly higher in the study group ($p=0.04$). Among the exposed students, the majority (92%) found that ECE was a better technique due to its practical orientation and increased interest, though a minority (8%) felt it was more time and energy-consuming, suitable only for selective portions of basic science topics. This suggests that early clinical exposure may be an effective technique to supplement traditional theoretical teaching and improve the performance of new medical students in physiology. The study indicates that ECE has better acceptability among students and supports its inclusion in the pre-clinical curriculum with proper time and manpower allocation.[11] The study conducted by Deolalikar et al revealed the same results.[12] Technological innovation has transformed education, particularly for 'digital natives' who seek flexible learning methods like e-learning. E-learning is crucial for health care professionals (HCPs), especially in remote areas, providing accessible, self-directed education that fits their schedules. Research shows e-learning's benefits, including increased accessibility and cost-effectiveness, but there are methodological flaws in comparing it with traditional methods. Das et al study emphasizes the need for research to focus on behavior change and patient outcomes, guided by frameworks like Kirkpatrick's model. While some studies demonstrate e-learning's positive impact on clinical skills, more research is needed to understand its influence on clinical practice and patient outcomes. This aligns with our findings that ECE improves learning and motivation, suggesting that integrating e-learning with traditional methods could enhance medical education, particularly in pre-clinical settings. 13 A review of 41 studies on 35 faculty development interventions, mainly targeting clinical faculty members through workshops, courses, and fellowships, revealed high satisfaction and positive changes in attitudes, knowledge, skills, and behaviors. Despite methodological limitations, participants reported increased personal and professional benefits, enhanced leadership capabilities, and new skills and networks, although organizational changes were limited. Key features contributing to positive outcomes included diverse instructional methods, experiential learning, peer support, and institutional backing. Relating this to our study, the positive outcomes of faculty development programs align with our findings on ECE, emphasizing the value of practical, experiential learning in enhancing engagement, knowledge, and skills. Integrating similar multi-method approaches and institutional support in ECE could further improve its effectiveness in medical education, fostering better learning experiences and professional development for students.[14] Mann et al discuss various cognitive and environmental perspectives on teaching and learning in medical education, emphasizing principles that can enhance educational practice. Cognitive perspectives include activating prior knowledge, elaborating new learning, and facilitating knowledge organization, while environmental perspectives focus on learner-environment interactions, observational learning, incentives, goal setting, and self-efficacy. These insights offer implications for fostering effective learning and supporting the learning environment across medical education levels. Relating this to our study, understanding these principles can inform the design and implementation of ECE programs, ensuring they effectively engage learners, promote knowledge acquisition, and facilitate skill development in clinical contexts.[15]

Limitations

The students were exposed to new teaching-learning methodology, i.e., ECE which can test all the three domains of learning – cognitive, psychomotor, and affective. This study was conducted with involvement of single batch of students testing only one domain of learning.

CONCLUSION

The study concludes that ECE is highly beneficial for first-year MBBS students across various aspects of their education. The majority of participants expressed positive sentiments towards ECE, citing its effectiveness in enhancing learning, increasing interest in the subject matter, and motivating further exploration. While most students found ECE helpful in correlating theoretical knowledge with clinical features and valued the practical experiences gained through ward rounds, there were some who remained neutral or disagreed, suggesting room for improvement in these areas. Nevertheless, the overall

utility of ECE was widely acknowledged, with students appreciating the opportunities it provided for discussion, knowledge sharing, and skill development. These results underscore the importance of ECE in medical education and highlight its potential to positively impact students' learning experiences and professional development.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Shah C. Early clinical exposure- Why and how? J Educ Technol Health Sci. 2018;5(1):2-7.
2. MCI Booklet on Early Clinical Exposure for Undergraduate Medical Education, Programme. 2019. Available at: https://www.mciindia.org. Accessed on 12 March 2024.
3. Gulpinar MA, Yegen BC. Interactive lecturing for meaningful learning in large groups. Med Teach. 2005;27:590-4.
4. Holla SJ, Ramachandran K, Issac B, Koshy S. Anatomy education in a changing medical curriculum in India: Medical students feedback on the duration and emphasis of gross anatomy teaching. Anat Sci Educ. 2009;2:179-83.
5. Armstrong E, Parsa-Parsi R. How can physicians' learning styles drive educational planning? Acad Med. 2005;80:680-4.
6. Barzansky B, Berner E, Beckman CR. Evaluation of a clinical program. Applying the concept of trustworthiness. Eval Health Prof. 1985;8:193-208.
7. Spencer J, Blackmore D, Heard S, McCrorie P, McHaffie D, Scherpbier A, et al. Patient-oriented learning: A review of the role of the patient in the education of medical students. Med Educ. 2000;34:851-7.
8. Trotter E, Roberts C. Enhancing the early student experience. High Educ Res Dev. 2006;25:371-36.
9. Tayade MC, Giri PA, Latti RG. Effectiveness of early clinical exposure in improving attitude and professional skills of medical students in current Indian medical education set up. J Fam Med Prim Care. 2021;10(2):681-5.
10. Kar M, Kar C, Roy H, Goyal P. Early clinical exposure as a learning tool to teach neuroanatomy for first year MBBS students. Int J Appl Basic Med Res. 2017;7(S1):S38-41.
11. Das P, Biswas S, Singh R, Mukherjee S, Ghoshal S, Pramanik D. Effectiveness of early clinical exposure in learning respiratory physiology among the newly entrant MBBS students. J Adv Med Educ Professionalism. 2017;5(1):6.
12. Deolalikar S, Nandi J, Pramod J. Introduction of early clinical exposure to 1st year MBBS students in physiology. CHRISMED J Health Res. 2020;7(1):63-7.
13. Sinclair P, Kable A, Levett-Jones T. The effectiveness of internet-based e-learning on clinician behavior and patient outcomes: a systematic review protocol. JBI Database System Rev Implement Rep. 2015;13(1):52-64.
14. Steinert Y, Naismith L, Mann K. Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME Guide No. 19. Med Teach. 2012;34(6):483-503.
15. Mann KV. Thinking about learning: Implications for principle-based professional education. J Continuing Educ Health Professions 2002;22(2):69-76.

Cite this article as: Bijwe AD, Bijwe SA, Hassan SBA, Pokale MS, Vidhale DG. Qualitative study of attitude and efficacy of first year students to early clinical exposure in ultrasound and orthopedics. Int J Reprod Contracept Obstet Gynecol 2024;13:1683-7.