

Original Research Article

Perceptions of undergraduate medical students regarding e-learning during COVID-19 pandemic

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ABSTRACT

Background: The unprecedented COVID-19 pandemic has caused a sudden shift towards the exclusive adoption of online teaching, forming the primary source of medical education and enabling students to continue to learn remotely. The role in the academic arena has gained importance furthermore considering the ongoing COVID-19 pandemic causing educational institutions around the world over to close down and thus giving rise to multiple challenges at all stages and levels of education in particular for students, due to the lockdown situation. Hence the present study was carried out to assess the perceptions of undergraduate medical students regarding e-learning during COVID-19 pandemic.

Methods: A cross-sectional study was carried out from April 2021 to June 2021 among 404 undergraduate medical students of IIMSR Medical College, Badnapur, Jalna, Maharashtra. The questionnaire had eliciting information about socio-demographic profile, knowledge and perception regarding advantages and challenges of e-learning was administered to them. Data was entered in Microsoft excel and analyzed using statistical package for the social sciences (SPSS) version-13.0.

Results: About 87% students were of opinion that e-learning was not useful and not motivated to use it and 38% students' think it's beneficial as has interactive mode, but 62% students think otherwise. Only 36% are of opinion that e-learning will improve their performance. Majority 78% students think e-learning will not help in better understanding than formal teaching methods.

Conclusions: Undergraduate medical students were still more inclined towards traditional teaching rather than e-learning. Faculty members should take necessary measures for improving e-learning facility and quality to help with better learning.

Keywords: Perception, Medical students, e-learning, COVID-19 pandemic

INTRODUCTION

Since the first case of coronavirus disease 2019 (COVID-19) in the UK, the World Health Organization has declared the COVID-19 outbreak as a global pandemic.^{1,2} The nationwide lockdown restrictions to control the spread of disease and 'flatten the curve' have impacted all aspects of life; inevitably, medical education has also been affected,

with the halting of lectures, clinical placements and key examinations.³⁻⁷ Such measures have resulted in a sudden shift in teaching methods towards online teaching. Online teaching has played a key role in medical education over recent years, demonstrated several benefits in enhancing student learning. A recent systematic review suggested that offline teaching and online teaching are equivalent in terms of outcomes of examinations. Key drawbacks have also been highlighted, including time constraints to

implement effective online teaching.⁸ The unprecedented COVID-19 pandemic has caused a sudden shift towards the exclusive adoption of online teaching, forming the primary source of medical education and enabling students to continue to learn remotely.⁹ Teaching sessions have covered key clinical conditions, case studies and examination questions via live-streamed tutorials through platforms such as Zoom, shown to have high levels of engagement.¹⁰

Technology is increasingly being utilized in education to address the needs of learners. It has been demonstrated that e-learning promotes students individualized learning, autonomy and reflective thinking and allows self-pacing and flexibility. The role in the academic arena has gained importance furthermore considering the ongoing COVID-19 pandemic causing educational institutions around the world over to close down and thus giving rise to multiple challenges at all stages and levels of education in particular for students, due to the lockdown situation. However, currently most of schools, colleges and even undergraduate medical and dental institutes across the country are stepping towards e-learning. Medical college administrations and teachers are taking appropriate measures to conduct effective e-learning via e-lectures, e-tutorials, and e-case based learning so that continued education can be provided without getting much affected any hurdle.¹¹⁻¹³ Both teachers and students are still in the process of getting acquainted with the new system. At this point of time, it is important to find out student's opinion and point of view regarding this virtual approach to teaching and learning. Whether the learners are attuned to the new methodology, would prefer any modifications or rather would want to go back to conventional learning altogether, would be an interesting point to explore.

Therefore, we aimed to investigate their perceptions on the role of online teaching in facilitating their education during the COVID-19 pandemic. Improving our understanding of this could help develop medical school curricula in the future.

METHODS

A cross-sectional questionnaire-based study was carried out from April 2021 to June 2021 among undergraduate medical students of IIMSR Medical College, Badnapur, district Jalna, Maharashtra, India which is affiliated to the Maharashtra University of Health Sciences (MUHS), Nashik, Maharashtra. The IIMSR Medical College, Badnapur district Jalna has been offering the MBBS course since 2013, with a maximum annual intake of 100 students. The students joining this course come from all over India. After receiving approval from the institutional ethical committee, all phases of medical students admitted at this institution were included in the study. The total study populations were 404 undergraduate medical students of IIMSR Medical College, Badnapur (100 students from Ist and IInd phase and 101 from IIIrd phase and 103 from IVth phase of MBBS) were selected by

convenience sampling method. Those who were not willing to participate were excluded from the study.

A self-administered semi-structured questionnaire was developed for the study by the investigators after reviewing the relevant literature.⁴⁻⁶

The questionnaire had eliciting information about their socio-demographic profile, perception regarding knowledge, advantages and challenges of e-learning was administered to them. The students were explained and informed regarding the purpose of the study. The questionnaire was administered to the consenting students after obtaining the requisite permission from the head of the institution. They were requested to complete the questionnaires, without discussing it amongst themselves.

Statistical analysis

Data was entered in Microsoft excel sheet and analyzed using percentage and proportions by statistical package of social sciences (SPSS) version-13.0. Statistical significance was set at $p \leq 0.05$.

RESULTS

Table 1 shows that the demographic profile of MBBS undergraduate students at IIMSR. 53% students are female and male students are 47%, around 25% students of for phases of graduation were enrolled for this study. There is urban predominance 73% as compared to rural students were 27%. Mobile phone was gadget of choice being used by majority 91% students, followed by laptop by 4% and tablet and computer by 2% and 1% respectively.

Table 1: Demographic profile of the study population (n=404).

Demographic profile	Frequency	Percentage
Gender		
Male	188	46.53
Female	216	53.46
Academic year of MBBS		
First	100	24.72
Second	100	24.72
Third	101	25.00
Fourth	103	25.49
Residence		
Urban	295	73.01
Rural	109	26.98
Choice of gadget/device		
Mobile	370	91.58
Computer	07	1.73
Laptop	18	4.45
Tablet	09	2.22

It was seen from Table 2 that majority (92%) students knew that what e-learning is but around 79% were

interested in this learning. Around 6% students did not know whether institute has e-learning facility is available or not but majority (94%) knew that institute has facility of e-learning. Around 77% students don't use e-learning forms to communicate with their faculties.

As seen from Table 3 that most of the students (87 %) are of opinion that e-learning was not useful and not motivated to use it. Around (38%) students think it's beneficial as has interactive mode but 62% students think otherwise. Around 69% participants feel that e-learning was useful as courses are available online. Only 36% are of opinion that e-learning will improve their performance, and 64% feel

otherwise. 45% student think e-learning would help to learn on own pace. Majority (78%) students think e-learning will not help in better understanding then formal teaching methods.

It was observed from Table 4 that 68% students had to face challenge of ready access to internet, majority 93% are of opinion that its disadvantage as would replace faculties. Majority 94% think it would make students skip classes and 89% were distracted on using e-learning and most of them (93%) have faced difficulties while adapting in newer modules and tools of e-learning.

Table 2: Knowledge about e-learning among study population.

S. no.	Question on knowledge about e-learning	Yes (%)	No (%)	P value
1	Do you have any idea of e-learning	372 (92.07)	32 (7.92)	$X^2=199.1867$ df=3 p<0.001
2	Are you interested in idea of e-learning	320 (79.20)	84 (20.79)	
3	Does your institute have facility of e-learning	380 (94.05)	24 (5.94)	
4	Do you have e-learning forms to communicates with your faculties	93 (23.01)	311 (76.98)	

Table 3: Student's perception about benefits of e-learning among study population.

S. no.	Perception about benefits of e-learning	Yes (%)	No (%)	P value
1	Would you find it useful and motivated to use it	52 (12.87)	352 (87.12)	$X^2=99.278$ df=5 p<0.001
2	E-learning is beneficial as it is interactive mode	152 (37.62)	252 (62.37)	
3	E-learning is useful as course are available online and cost effective	278 (68.81)	124 (31.68)	
4	Implementing e-learning would improve performance	146 (36.13)	258 (63.86)	
5	E-learning would help to learn on your own pace	180 (44.55)	224 (55.44)	
6	E-learning would help in better understanding then formal teaching methods	87 (21.53)	317 (78.46)	

Table 4: Student's perception about challenges of e-learning among study population.

S. no.	Challenges	Yes (%)	No (%)	P value
1	Availability of ready access to e-learning	276 (68.31)	128 (31.68)	$X^2=42.538$ df=4 p<0.001
2	Its disadvantages as would replace faculties	376 (93.0)	28 (6.93)	
3	It would make students skip traditional classes	382 (94.44)	22 (5.44)	
4	Distracted on using e-learning	360 (89.10)	44 (10.89)	
5	Adapting difficulties on implementing newer e-learning module and tools	374 (92.57)	30 (7.42)	

DISCUSSION

In the present study, out of 404 students, 370 (92%) of them used mobile gadgets for their e-learning and laptop being second choice used by 18 (4%) of students. Majority of students knew what was e-learning but around 77% were interested in this learning. Majority 76% students don't use e-learning forms to communicate with their faculties. Around 87.12% students showed negative perception about e-learning, out of which 87% students felt e-learning has little impact on their learning. Majority of the students preferred face to face teaching over e-teaching. The key outcome of the result shows that the students are not yet ready for e-learning. Similarly a study

done by Yilmaz revealed that mobile has become one of the most popular devices among students for e-learning as compared to laptops, personal computer and tablets.¹⁴ In one of the study conducted by Roberts et al.¹¹ on university students was found that 66% use mobile devices for e-learning and another study by Abbas et al also showed that 76% students preferred mobile as a first choice of device which is nearer to our study which shows 91% students prefer mobile devices.¹⁵ In Spain a research conducted by Martinez et al revealed that students choose the mobile for their learning because student-teacher interaction through mobile was much easier as compared to other devices.¹⁶ Another very common reason for this is that learning can take place anytime and anywhere as discussed in the study

by Murphy et al.¹⁷ The results of this study were slightly different from our study as mobile was the first choice for e-learning followed by laptop, tablet and personal computer.

In post COVID era, students in India were required to move to online learning, however they have found it was less appealing due to its limitations with respect to practical aspects of learning in the laboratory/clinical environment and no one was ready for e-learning viz institution, faculty and students. This findings was consistent with the study conducted amongst students' behavior in China.¹⁸ However, the literature was searched regarding e-learning under normal circumstances, before COVID-19, we came across mixed outcomes. Some suggested positive approach and others have negative inclination towards e-learning. In another study by Maheshwari et al showed that 100% resident doctors agreed that their knowledge in pediatric cardiology improved after e-learning program but 84% agreed upon that that they developed practical skills.¹² A study conducted by Dost et al at UK claims main advantages of online teaching are the time and money saved from lack of travel, its flexibility and ability of students to learn at their own pace.¹⁹ Further benefits of online lecture include opportunity for students to anonymously ask and answer question but not applicable to prerecorded lecture. Also watching prerecorded lectures alongside attending face to face lectures, has been shown to be negatively correlate with learning success. The main barrier to online teaching appear to be family distraction, internet connection and timing of tutorial, mental health of students shown to be impacted by COVID 19 pandemic.²⁰ A study conducted by Khasawneh et al about student's satisfaction level towards e-learning and it was found that majority of the students accepted digital learning.²¹

In our study, students preferring face to face teaching over online teaching was 85%. Similarly a study by Sharma et al also revealed that in comparison to face to face learning students were satisfied with e-learning.²² Our study also highlighted that students are not ready to adopt e-learning which is different than the findings of a study conducted on nurses. They considered e-learning as a better teaching tool and preferred it for future learning. However, there were also exists many literatures that reports students preferring face to face teaching over online teaching.²³⁻²⁶ Another study conducted in India by Maheshwari et al revealed that e-teaching increased students' satisfaction level towards learning.¹² One of the study by Dost et al also pointed out that students were misusing the user identity during online teaching.¹⁹ It was noted that online teaching was not secure as incivility was considered as a major issue that was detrimental to students' privacy, as is evident in our findings also. Lower middle income countries found e-learning was very useful due to faculty shortage and being utilized and adapted to encompass a diverse range of competencies.¹³

The problem of clinical postings/competencies during COVID-19 pandemic can be taken care by consolidating and moving clinical didactic sessions online earlier to allow for later entry into the clinical environment; creating and using available virtual cases; modifying the academic calendar to exchange later experiences (e.g. scholarly work) and defer clinical rotations; and involving students in the tele health environment, including electives based on experiences students are pursuing to enable them to assist and learn in this critical situation.¹⁷

Limitations

This study was an institution based cross-sectional study, limited to only one medical institution, so it cannot be generalized.

CONCLUSION

Technology is increasingly being utilized in medical education to address the needs of learners, inspite of gaining immense popularity today, it has still not been accepted by the medical students for use in teaching. Both teachers and students are in the process of getting acquainted with new system. Undergraduate medical students are still more inclined towards traditional teaching rather than e-teaching/e-learning. Faculty members should take necessary measures for improving e-learning facility and quality to help with better learning of students during COVID-19 pandemic.

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