

A Study on the perception of medical students using online teaching during covid -19 pandemic

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ABSTRACT

Introduction: COVID-19 has caused unprecedented disruption to the medical education process and the health care system worldwide. It has also affected clinical training and forced medical colleges to switch over to the online mode of teaching. This study aimed to learn about the experience and perception of undergraduate students regarding online learning and to study the advantage and disadvantages of online learning. **Method:** This was a cross-section study conducted among the undergraduate students of government medical colleges of Jharkhand. A validated electronic questionnaire was sent to students of all five government medical colleges in the google form. Response from 501 students was received and analyzed using SPSS software. **Result:** Only 30% of students were satisfied with the frequency, organization content, and preparedness of class. More than half of students were not satisfied with the preparedness, content, and frequency of online classes. Among various teaching methods, live online lectures were most common, and they were also preferred by the majority of students. Most of the students wanted a regular face-to-face classroom or hybrid teaching after the COVID-19 pandemic. **Conclusion:** The majority of the medical students preferred face-to-face teaching methods over online teaching methods. Lack of interpersonal interaction and poor infrastructure for online might be the reason for this. However, a hybrid method of learning can be included as a part of the medical curriculum that helps in better learning of medical students.

Keywords: Covid-19 pandemic, medical education, online learning

Introduction

The major mission of faculty members in medical colleges is to prepare the student and future health care provider through the use of several authentic learning environments, such as problem-based learning environments, hands-on simulation training. But due to the significant impact of the COVID19 pandemic, there is a change in future education. There was an abrupt obligatory transformation into e-learning.

E-learning has been introduced as a tool in the learning process in the majority of international universities worldwide. The term “e-learning” is defined as any learning that involves using the internet or intranet.^[1] It is composed of a set of applications and processes, including computer-based learning, web-based learning, virtual classrooms, and digital collaboration.^[2]

Owing to the advancement in technology and availability of the internet, online classes are being held by various apps such as zoom, Google classroom, Cisco WebEx, YouTube, etc., Which provide an interactive platform for learning in the lockdown period.

The COVID-19 pandemic has led to the introduction of various e-learning tools in medical colleges and has also provided us with a unique opportunity to study the challenges and sustainability

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of this method and evaluate its role in medical education much beyond the pandemic.^[3]

Face-to-face classrooms have been replaced by online live or prerecorded classes. Medical students' clinical rotations which include case presentations to impart skills and training to medical students have been canceled. Resident doctors, however, continued with their clinical work. Exposure of training doctors to medical conferences enhancing their academic skills and personal development has also suffered a setback. Students and faculty are now forced to adapt to a new system of education which might be temporary or maybe the new normal.

The current pandemic has forced medical training to use the online platform for medical education and clinical training. Pather N *et al.*^[4]

Shah D in 2005 has mentioned his experience in using telemedicine in India to reach people in rural areas. He weighed the merits and demerits of online education and suggested that blended learning can be an option for Indian students.^[5]

At present as lockdown restrictions ease, the need for social distancing will continue, and the possibility of medical students acting as vectors of COVID-19 as seen in the Severe acute respiratory syndrome (SARS) epidemic in Hong Kong remains.^[6,7]

Therefore, it is likely that e-learning will continue to form vital sources of medical education. Many authors have suggested digital health platforms for both patient and student will remain an integral part of care even after the COVID-19 pandemic.^[8]

All medical specialties are vital when dealing with a growing pandemic threat. Family medicine physicians are among them, and they play a critical role in epidemic prevention and control.^[9]

Thus, having a greater understanding of the perceived advantages and drawbacks will allow medical colleges to improve their delivery of online teaching. The COVID-19 pandemic has put us in a unique position to evaluate the significance of online teaching platforms in medical education.

The aim of our study is i) To learn about the experience and perception of undergraduate students regarding online learning
ii) To study the advantages and disadvantages of online learning.

Methods and Material

This cross-sectional study was conducted on undergraduate MBBS students open to all government medical colleges of Jharkhand. A total of 501 students from six medical colleges of Jharkhand participated in the study. First year, second year, and-year undergraduate MBBS students were included in the study, irrespective of whether their college had begun e-learning facilities or not. We conducted this study from August 2021 to October 2021 over three months. A structural questionnaire was developed and used to collect data from undergraduate MBBS

students. The google forms were available electronically from 23.07.2021 to 23.08.2021.

A self-administered English language questionnaire was developed consisting of (1) Socio-demographic characteristics, (2) general information regarding the use of the app, (3) Technical issues, with the current online teaching methodology, and (4) future use of e-learning.

The data were obtained from google forms. Responses were analyzed by using SPSS software. Ethical approval was granted by the Institutional Ethics Committee of Sheikh Bhikhari Medical College Hazaribag.

Result

Students from all six government medical colleges of Jharkhand participated in this study. Among 501 medical students that took part in the study, 231 (46.10%) were male and 270 (53.89%) were female. The ages of participants ranged from 18 years to 25 years. These were first year 243 (48.50%), second year 249 (49.70%), third year 04 (0.79%), and final year 04 (0.79%) students Table 1.

Out of the total participants, 439 (87.62%) used mobile internet data, 55 (10.97%) used Wi-Fi network, 07 (1.39%) used broadband internet. The majority of the students [270 (53.89%)] experienced network issues, 106 (21.15%) experienced audio not clear issues, 32 (6.38%) experienced host server down issues, and 42 (8.38%) experienced session ends abruptly Table 2.

Out of the total participants, 86 (17.16%) were very satisfied, 151 (31.13%) were somewhat satisfied, 126 (25.14%) were neither satisfied nor dissatisfied, and 138 (27.54%) were somewhat dissatisfied with the preparedness of the class.

Out of the total participants, 101 (20.15%) were very satisfied, 150 (29.94%) were somewhat satisfied, 115 (22.95%) were neither satisfied nor dissatisfied, and 135 (26.94%) were dissatisfied with the frequency of classes. Similarly, 154 (30.74%) were very satisfied, 100 (19.96%) somewhat satisfied, 73 (14.50%) were neither satisfied nor dissatisfied, and 174 (34.73%) were somewhat dissatisfied with the content of classes.

Out of 501 participants, 345 (68.86%) preferred the traditional face-to-face classes over the online classes. A total 80 (15.96%) students favored prerecorded classes and 76 (15.16%) online live classes Figure 1.

A total of 289 (57.68%) agreed that online classes should be included as a part of the M.B.B.S curriculum, whereas (42.31%) of the students disagree on this matter Figure 2.

Discussion

COVID-19 pandemic has dramatically changed the medical education environment and made the shift to online teaching

Table 1: General Information

Questions	Response option	n (%) total n=501
In which medical college of Jharkhand do you study?	RIIMS, Ranchi	15 (30.73%)
	MGM, Jamshedpur	116 (23.15%)
	Shaheed Nirmal Mahto Medical College, Dhanbad	51 (10.17%)
	Sheikh Bhikhari Medical college, Hazaribag	67 (13.37%)
	Phulo Jhano Murmu college, Dumka	40 (7.98%)
	Mednirai Medical college, Palamu	73 (14.57%)
What year are you in?	1 st year	243 (48.50%)
	2 nd year	249 (49.70%)
	3 rd year	05 (.99%)
	Final year	04 (.79%)
Gender	Male	231 (46.10%)
	Female	270 (53.89%)

Table 2: Technical issues regarding the use of online study

Questions	Response option	n (%) total n=501
What technical issues have you faced while using the app?	Network issues	270 (53.89%)
	Audio not clear	106 (21.15%)
	Video not clear	00 (0%)
	Host server down	32 (6.38%)
	Session ends abruptly	42 (8.38%)
	None of the above	51 (10.17%)
How frequently have you faced a technical issue over one hour class?	1 time	87 (17.36%)
	2 times	137 (27.34%)
	3 times	120 (23.95%)
	4 times	116 (23.15%)
	never	41 (8.18%)
In an Average class of 1-h duration how long have you been able to attend without any interruption	20 min	181 (36.12%)
	30 min	112 (22.35%)
	>30 min	208 (41.51%)
What other issues have faced?	Ppt not clear	30 (5.98%)
	Handwriting not clear on board	80 (15.96%)
	Timing not favorable	41 (8.18%)
	Unable to follow class after a technical issue	285 (56.88%)
	Others	65 (12.97%)

inevitable. The close human contact that was the essence of clinical teaching now looks so distant. The current coronavirus pandemic has forced us to explore nonconventional ways of teaching-learning and assessment. Medical schools will now need to be prepared to train the next generation of digital learners using virtual learning environments. This does not mean that traditional classroom teaching will become obsolete, but that is how an opportunity to use both methods efficiency in a hybrid manner to make the process of learning efficient and effective.^[10]

Though much has been written on COVID-19 and its effects on medical education and future implications, only very few researchers have tried to find out what was the medical students' perceptions.^[11-14] In this study, we focused mainly on undergraduate students, as they are prime stakeholders within the health care system with the success of any teaching model depending on their experience, perceptions, and active involvement.

Online teaching has its advantages as it is mostly covered in smaller groups with more interaction between teacher and students with the latter having a major say in deciding the subject matter. Students' motivation is also high because they are more involved and also feel attracted by the use of technology. Online or e-learning can increase the efficiency and effectiveness of higher educational institutions, but it requires faculty training with robust infrastructure involving high-speed internet, hardware, and other logistics.^[15]

In our study, approximately 30% of the students were satisfied with class preparedness, frequency, and content of the class, whereas Abbasi *et al.*^[13] found that only 23% of the students were satisfied with the quality of teaching. Tariq Hameed *et al.*^[15] found 70% of the students were satisfied with the organization, preparedness, and content of the online class. In contrast, a study conducted at the University of Tasmania found that 95% of students had a favorable opinion about online teaching, and 75% thought that it was effective in increasing their skills.^[16]

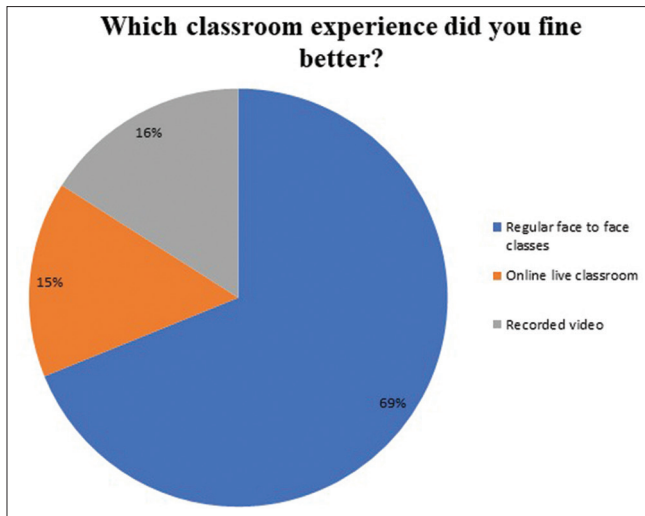


Figure 1: Students response to different modes of teaching

Liang *et al.*^[17] discussed the various ways in which the COVID-19 crisis has affected medical education in Singapore and suggested exploration of pertinent practical and creative solutions from their previous experience with the SARS outbreak in 2003 as well as the current ongoing COVID-19 crisis.

Though most of the institutes of participants in our study had rapidly converted their entire preclinical curriculum to online formats, some of them were still unable to initiate this transition due to lack of infrastructure and technological awareness.

Most of the students looked forward to e-learning and believed it to be useful. There is a need for training the students as well as the medical faculty in conducting e-classes and the use of technology to its full potential. Overcoming the technical problems, by providing a portal that is more convenient for both the teachers as well as all students; and, using this platform to provide more videos, offline recorded lectures, and clinical cases to students will allow institutions to adapt to this new form of education, and to accept it as an important methodology of teaching to the traditional face to face mode of education.

Conclusion

In conclusion, this study showed that online education experience was not favorable amongst the majority of our students due to various reasons, some of which can be modified and some cannot, however, it is very important to investigate and rectify our deficiencies to deliver the maximum quality of teaching. By overcoming the setbacks that challenge its implementation, it can be used as a means to supplement traditional teaching methods even beyond the COVID-19 pandemic.

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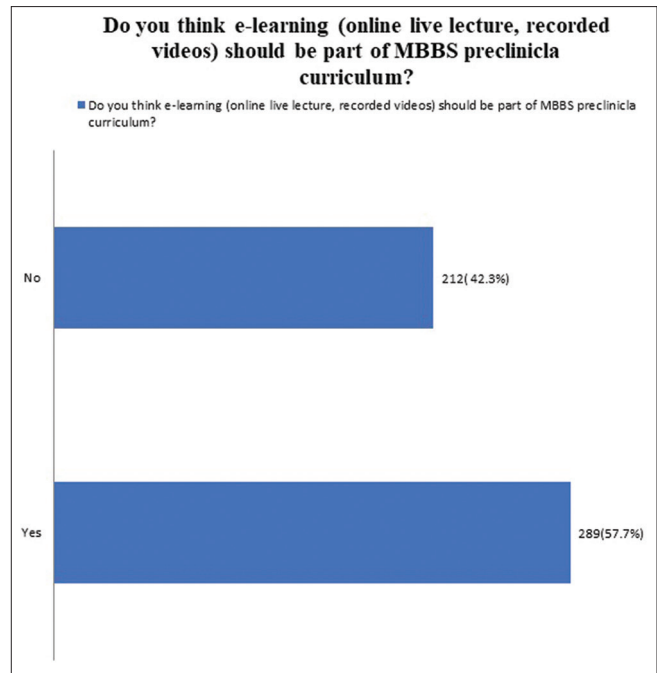


Figure 2: Students preference regarding e-learning

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Conflicts of interest

There are no conflicts of interest.

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