

Perceptions of medical students towards online teaching during covid-19 pandemic: Evaluation of knowledge, attitude and practice

¹Ms. Shriya Deshmukh, III (major) MBBS, NKP Salve institute of Medical Sciences & Research Centre and Lata Mangeshkar Hospital, Digdoh Hills, Nagpur 440019. Maharashtra.

²Dr. Ujjwala Dehankar, Assistant Professor, Department of Microbiology, NKP Salve institute of Medical Sciences & Research Centre and Lata Mangeshkar Hospital, Digdoh Hills, Nagpur 440019. Maharashtra.

Corresponding Author: Dr. Ujjwala Dehankar, Assistant Professor, Department of Microbiology, NKP Salve institute of Medical Sciences & Research Centre and Lata Mangeshkar Hospital, Digdoh Hills, Nagpur 440019. Maharashtra.

Citation this Article: Ms. Shriya Deshmukh, Dr. Ujjwala Dehankar, “Perceptions of medical students towards online teaching during covid-19 pandemic: Evaluation of knowledge, attitude and practice”, IJMSIR- July - 2023, Vol – 8, Issue - 4, P. No. 84 – 90.

Type of Publication: Review Article

Conflicts of Interest: Nil

Abstract

The COVID-19 pandemic has necessitated a rapid shift from traditional face-to-face teaching to online platforms across various educational domains. This study aims to evaluate the knowledge, attitude, and practice of medical students regarding online teaching during the pandemic. A cross-sectional survey was conducted among medical students from multiple institutions to assess their perceptions of online teaching. The survey included questionnaires related to the student’s knowledge about online teaching platforms, their attitudes towards online teaching, and their approach towards online learning practices. The data were analyzed using descriptive statistics. Results revealed that a majority of medical students had adequate knowledge about online teaching platforms and felt positive about online teaching. They appreciated the flexibility and accessibility offered by online learning, as well as the ability to review recorded lectures. However, some students reported challenges related to connectivity issues, technological limitations,

and reduced interaction with lecturers. The findings suggest that despite the challenges, medical students generally adapted well to online teaching during the pandemic and recognized its potential as an alternative mode of education. This study provides valuable insights into the perceptions of medical students towards online teaching, which can inform educational institutions in refining their online teaching strategies and improving the overall learning experience for medical students in similar circumstances. As this platform of learning will continue as a choice of learning.

Keywords: Contagious, Mortality, Pandemic, Quarantine

Introduction

In December 2019, the cluster of patients with symptoms of fever, cough, and pneumonia were reported in Wuhan, China. Since then, coronavirus (SARS-COV-2) has spread worldwide to affect more than 30 million people. The disease COVID-19 was declared a pandemic by the World Health Organization (WHO) on 11th March 2020. Due to its highly contagious nature and rising mortality

among the population, most of the countries have locked down and quarantined their population to control the spread of disease^[1]

Coronavirus Disease 2019 (COVID-19) pandemic led to disruption of medical education and healthcare systems worldwide [2,3]. To ensure social distancing, closure of all the medical colleges with sudden shift from face-to-face context to online context was essential for professors, students and trainees. Medical students experienced significant interruptions to their training due to lengthy national lockdowns. A large amount of online teaching started in response to this crisis. This took so many formats and used many interfaces in an attempt to deliver content [4]. Hence this study is undertaken to determine the views of medical students towards online education in medical college.

Methodology

Study design- Cross-sectional study

Study setting- Tertiary Health care institute

Study population- There is voluntary participation of all the undergraduate MBBS students of academic year II, III (minor), III (major) and Intern. The number of participants is 255.

Sampling technique- Universal sampling.

Method of data collection/ study tool

The online version, Google forms containing the study questionnaire distributed among the college social media groups of medical students. Personal emails and messages sent to them to ensure appropriate selection of study participants and the highest possible response rate. Informed consent had been taken from all the students. Questionnaire covers participants' basic demographic data (gender, age) level of medical education, medical college educational program status, types of online learning offered, availability of advanced technology in medical education and views or opinion of students about

online teaching [5,6]. Students were asked to answer multiple choice questions and some questions using 5-point Likert scale (strongly disagree, disagree, neutral, agree, and strongly agree.) Entire questionnaire is attached.

Ethical approval

Ethical approval obtained from the Bioethics Committee of the Institute.

Data management

All data collected using Google forms saved in the Microsoft excel sheet and kept confidential. There is backup of the data collected and stored.

Data analysis

Data coded and analysed in statistical tool: IBM SPSS statistics version 22. Descriptive statistics include categorical variables as frequencies and percentage. Mean and Standard deviation calculated to analyse results.

Results

A total of 255 medical students participated in the study. 54 (21.2%) of participants were from II year, 39 (15.3%) from III (minor), 129 (50.6%) from III (major) and the remaining 33 (12.9%) being interns.

Female students accounted for 62.4% (n=159) of respondents whilst 37.6% (n=96) were male. Majority 78.82% (n=201) of medical students were in clinical years and the remainder 21.18% (n=54) were in pre-clinical years.

Almost all 92% (n=235) students had sufficient knowledge about COVID-19

Table 1: Status of educational technology tools during COVID-19 pandemic

Variables	Total n	Percentage
Level of proficiency in using various electronic devices (computers, smartphones, laptops, etc.)		
Inadequate	5	2
Acceptable	76	29.8
Good	102	40
Proficient	72	28.2
Which of the following items do you personally utilize in your medical education?		
Computer	8	3.1
Tablet/iPad	129	50.6
Smartphone	118	46.3
Did your faculty suspend or postpone educational or clinical programs due to COVID-19?		
Yes	176	69
No	79	31
Following type of medical learning offered by my medical institute		
Interactive live lectures	117	45.9
Pre-recorded lectures	24	9.4
Audio ppts	94	36.9
Resources for self learning	20	7.8

50.6% of the students prefer tablet/iPad for medical education followed by smartphones by 46.27%. Only 2% of the students find difficulty in using electronic devices. Students used a combination of interactive live lectures (45.9%), pre-recorded lectures via their medical colleges (9.4%), audio ppts (36.9%), and resources for self-learning (7.8%).

Fig.1: 58.43% (n=149) of the medical students agreed that their medical institute had successfully shifted to online courses since the beginning of the pandemic.

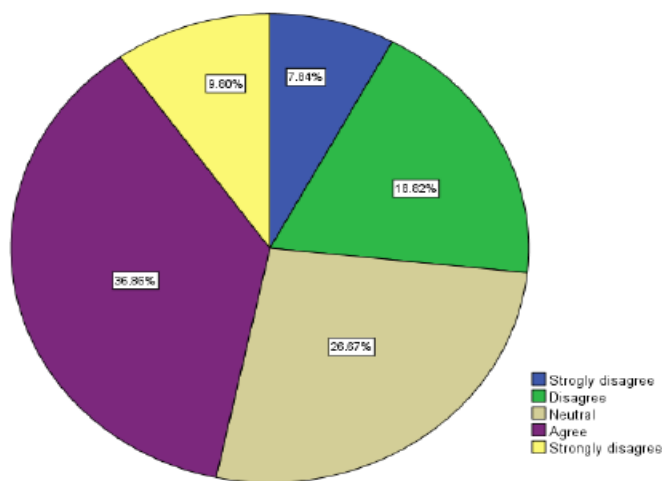
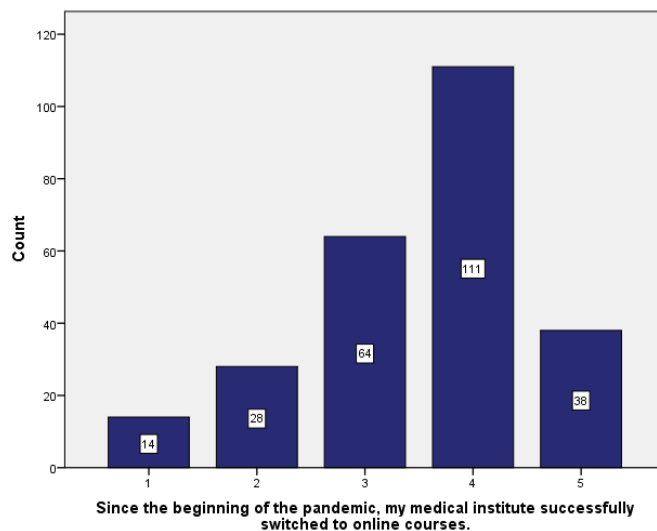


Fig. 2: For the sake of online learning, one should feel comfortable using software as stated by 115 of the students.

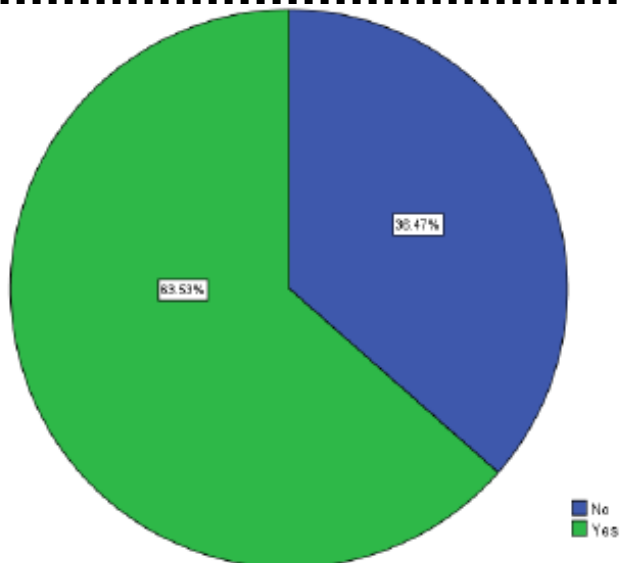


Fig. 3: 63.5% (n=162) understands the subject using online techniques.

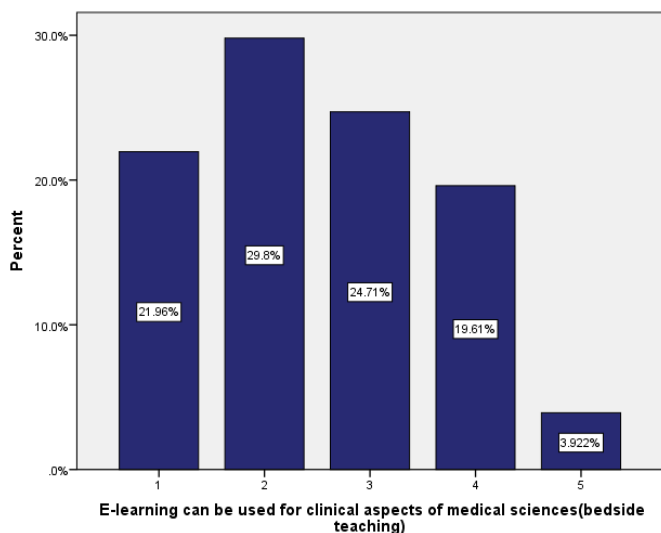


Fig. 4: The pandemic has drastically hampered clinical aspects of medical sciences (bedside teaching) as stated by 132 students.

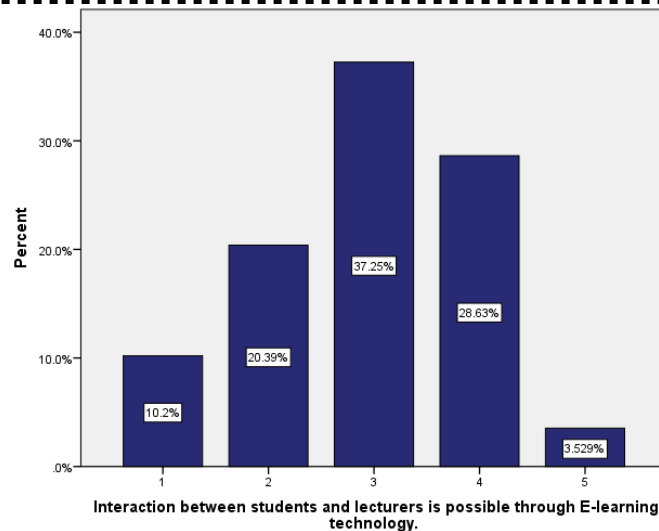


Fig. 5: Teachers in face to face are almost always professional and demonstrate interpersonal skills to Inspire the students. This interaction between students and lecturers is not possible through e-learning as stated by 78 students.

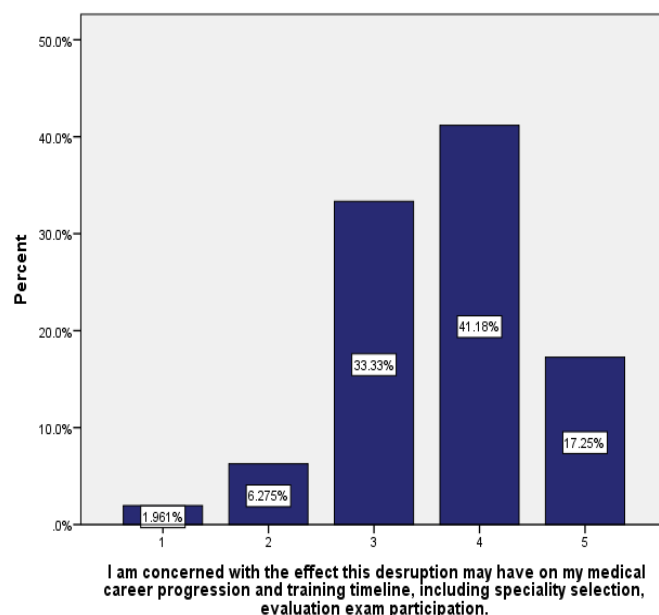


Fig. 6: Nearly 149 students were concerned with the effect of COVID-19 on their medical career progression including specialty selection.

Table 2

Statements	N	Mean	Std. Deviation
Since the beginning of the pandemic, my medical institute successfully switched to online courses.	255	3.51	1.049
I am happy with the quantity of online courses provided by my institute	255	3.03	1.124
I am happy with the quality of online courses provided by my institute	255	3.05	1.078
I feel comfortable using software for online learning. (e.g. Google meet, Zoom, Microsoft teams)	255	3.22	1.104
I admire the way my medical faculty is relaying information using online applications.	255	3.16	.961
Downloadable E-learning content is better than live content.	255	2.91	1.101

E-learning can be used for clinical aspects of medical sciences (bedside teaching)	255	2.54	1.149
Online learning should play a more prominent role in medical education even beyond pandemic.	255	2.87	1.117
Exams should be conducted online.	255	2.53	1.300
Interaction between students and lecturers is possible through E-learning technology.	255	2.95	1.020
I am concerned with the effect this disruption may have on my medical career progression and training timeline, including speciality selection, evaluation exam participation.	255	3.65	.904
Valid N (listwise)	255		

Discussion

With the rise of COVID-19 many medical institutions have resorted to online education. It has some advantages and disadvantages. Our study finds out the impact of COVID-19 on the uptake of online teaching. (98%) Most of the students are proficient in using electronic devices preferably tablets/iPads and smartphones. Very few are inadequate in using it, maybe because of less handling of electronic devices. 74% of the students can use all types of learning platforms Zoom, Google meet, Microsoft

teams, etc. (64%) Maximum numbers of students are able to understand the subject using online techniques. It may be because of one-to-one interaction between teacher and student, question and answer and use of class break room, chat box. But 178 (70%) students find it difficult to motivate them for online courses, maybe because of family distraction, internet connection and timing of tutorials. Difficulty in concentrating and asking questions, lack of contact with the colleagues are also the factors responsible for demotivation of the students (5).

84% of the students feel that after pandemic their institute switches to online course successfully and they are satisfied with the quality and quantity of teaching provided by the institute which is contradicting the study carried by Stoehr et al where students were not satisfied with quality and quantity of the online courses provided (5). (76%) Many students felt that E-learning cannot be replaced with clinical teaching they received by direct contact with patients and hospital surroundings (5, 7). This finding correlates with the findings in study carried out by Dost & et al. (7) but they feel that online learning should play a more prominent role in medical education. There should be a balance between online and offline learning. But at the same time, they oppose online exams because the quality of the exam was not maintained (open book exam & unrestricted sitting). Many students (92%) are concerned with the effect of this disruption may have on their medical career progression and training timeline. This finding correlates with the findings of Dost & et al (7). Similar findings are seen in a study carried out by TMS collaborative where a significantly higher proportion of medical students in the clinical year reported that their placements were shortened, their preparation for the next stage of training, confidence in clinical skills and choice of future career specialty were affected (2). Offline teaching cannot be

replaced by online teaching especially in clinical settings where bedside learning is a barrier.

Conclusion

The COVID-19 had a negative impact associated with training of many medical students. So, it is necessary for the medical colleges to reallocate the additional resources to the students whose training was affected during the pandemic. Medical students are aware about COVID-19. They desire more interaction, clarity, information and communication as they are distressed about their studies. They also expect that their faculties should enhance their skills to operate online applications.

We accepted online learning as no choice in COVID era but now it will continue as a choice of learning. There should be balance between the use of online and offline learning and both the methods would apply during teaching.

Implications

- With this study we will understand the suitability of online learning.
- We can access the comparison between online and on-site learning.
- We can decide the betterment of digital knowledge in future.
- This will help to decide the application of online learning in clinical studies (bedside teaching).
- The study will also help to decide – Online learning, a better option for future studies beyond pandemic.
- We can access the combination of online and offline context of learning together for its application in future.

References

1. Seetan, Khaled, et al. "Impact of COVID-19 on medical students' mental wellbeing in Jordan." *PLoS One* 16.6 (2021): e0253295

2. The perceived impact of the Covid-19 pandemic on medical student education and training an international survey.” *BMC medical education* 21 (2021): 1-8.
3. Alsoufi, Ahmed, et al. “Impact of the COVID-19 pandemic on medical education: Medical students’ knowledge, attitudes, and practices regarding electronic learning.” *PloS one* 15.11 (2020): e0242905.
4. Ahmed, Samar A., et al. “Model for utilizing distance learning post COVID-19 using (PACT)TM a cross sectional qualitative study.” *BMC Medical Education* 20.1 (2020): 1-13.
5. Stoehr, Fabian, et al. “How COVID-19 kick-started online learning in medical education—The DigiMed study.” *PloS one* 16.9 (2021): e0257394.
6. Loda, Teresa, et al. “Medical education in times of COVID-19: German students’ expectations- A cross-sectional study.” *Plos one* 15.11 (2020): e0241660.
Dost S, Hossain A, Shehab M, Abdelwahed A, Al-Nusair L. Perceptionsof medical students towards online teaching during COVID-19 pandemic: a national cross-sectional survey of 2721 UK medical students. *BMJ open*. 2020 Nov 1;10(111): e042378.