

ORIGINAL RESEARCH

Perception of E-Learning Amongst the Undergraduate Students in a Tertiary Care Medical College & Hospital of Southern Assam During the COVID-19 Pandemic

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ABSTRACT

Background: The COVID-19 (Coronavirus disease 2019) pandemic led to closure of educational institutions worldwide that significantly disrupted the traditional class room based educational system necessitating a shift to e-learning modalities. The aim of our study was to assess the perception of e-learning among the medical, dental and nursing students of a Medical college in Southern Assam during the COVID-19 pandemic. **Methods:** A questionnaire-based survey using Google Forms was conducted for six months among the MBBS (Bachelor of Medicine and Bachelor of Surgery), BDS (Bachelor of Dental Surgery) and BSc (Bachelor of Science) Nursing students of the Institution. A total of 306 students consented to participate in the study. **Results:** Out of the 306 students, 54.9% were BSc Nursing, 42.2% were MBBS of Phase-2 & Phase-3 (Part-1), and 2.9% were BDS students. The majority (60.1%) of the students had not participated in any form of e-learning before COVID-19. While 59.2% regularly searched online resources, 72.9% did not prefer online teaching over classroom instruction and missed the classroom ambience. Approximately one-third (35.3%) believed e-learning leads to social isolation, and 51.3% felt the lack of face-to-face interaction reduced learning effectiveness. However, 36.6% reported of being disturbed by others during online sessions. Nearly one-third (28.4%) suggested continuation of a part of online sessions post-pandemic. **Conclusion:** E-learning was a valuable teaching method that enhanced knowledge during the pandemic. However, students highlighted concerns like social isolation, reduced interaction, and distractions. A blended approach combining e-learning with face-to-face classroom instruction may be an effective post-pandemic educational strategy that requires a more active approach.

Keywords: e-learning, COVID-19, medical education, students, perception

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INTRODUCTION

The primary duty of the teachers and the faculty members in a medical college is to prepare the students and future health care providers with the prerequisite knowledge and skill through the use of several teaching learning methods, such as lectures, small group discussions, problembased learning, handson simulation training etc.¹

The COVID-19 (coronavirus disease 2019) pandemic was declared as a global outbreak - an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) by the WHO (World Health Organisation) on 11th March 2020.²This declaration by the WHO resulted in an

unprecedented public health response as governments across the world started to implement a wide range of measures to control and prevent the transmission of the disease. Social distancing, banning of public gatherings, nationwide lockdown, and closure of businesses including educational and public institutions were some of the measures taken and they had a profound impact on the people, the economy and the education system.³ Online education became a common teaching method as an alternative to traditional in class education during the COVID-19 pandemic and it presented a challenge for medical education teachers and administrators, who were forced to shift from traditional face-to-face (F2F)

teaching to online digital learning. It was assumed that online education offers more flexibility as it is not time and place-bound.^{4,5} However, there were conflicting outcomes from many medical educational institutions in their students' experiences using the online learning modality during COVID-19 pandemic.^{6,7}

Many studies have indicated a significant impact of the pandemic on the mental health of students.^{8,9}

The psychological impact of the pandemic and the switch to remote learning on medical students' education, mental health, and future career paths remains to be fully understood. Therefore, we thought of conducting this study with the aim of identifying the perception of e-learning amongst the undergraduate students in our institute during the COVID-19 pandemic.

METHODS

Study design and setting

A questionnaire-based survey using Google Forms was conducted for a period of six months among the MBBS (Bachelor of Medicine and Bachelor of Surgery), BDS (Bachelor of Dental Surgery) and BSc (Bachelor of Science) Nursing students of the Institute.

Selection of participants

The participants were selected based on convenience sampling and a total of 306 students from MBBS, BDS and BSc Nursing curriculum consented to participate in the study.

Methods of measurement

The study utilised a self-administered online questionnaire distributed through Google Forms. The questionnaire was designed by the principal investigator in consultation with the co-investigators and was validated by the members of the Medical Education Unit of the Institute and after a pilot study conducted over 20 students.

Data collection

The questions included were closed ended ones like Yes/No type, multiple-choice questions and open-ended questions, covering topics such as prior experience with e-learning, preferences for online or classroom teaching, perceived benefits and challenges of e-learning, and suggestions for improvement.

Ethical guidelines followed by the investigators

The study was started after receiving approval from the Institutional Ethics Committee on 23rd August, 2021.

RESULTS

A total of 306 students consented to participate in the study, 74.2% (227) female, and 25.8% (79) male. The distribution of students as per their course of study was as follows: 54.9% (168) from BSc Nursing,

42.2% (129) from Phase-2 & Phase-3 (Part-I) MBBS, and 2.9% (9) from BDS. Majority of the students (n=185) were from 2nd academic year in MBBS and BSc Nursing, while in BDS they were from 3rd year. Table-1 shows the academic year-wise distribution of the students. The age of the participants ranged from 18 to 26 years, with average age being 21.44 ± 1.27 .

The majority (90.85%, n= 278) of students had basic knowledge of operating a desktop-computer/ laptop/ mobile phone and 8.82% (27) had somewhat knowledge of the same, whereas, 0.33% (1) had no knowledge. Figure-1 shows whether the students use their e-mail regularly. Two hundred seventy-eight (n= 278, 90.85%) of them are on some kind of social media networking platform, while the remaining 9.15% (28) are not. The most commonly used social media networking platform was Instagram (28.4%, n= 87), followed by Facebook plus Instagram (19.5%, n= 60), Facebook plus Instagram plus "X" (formerly Twitter) (8.9%, n= 27), Facebook (8.2%, n= 25).

The majority (60.1%, n= 184) of the students had never participated in any form of e-learning before the COVID-19 pandemic, whereas, 29.7% (91) did. The students' response to the questions on the believe that e-learning leads to social isolation and reduced learning are shown in Figure-2 and -3 respectively. Most of the students (59.2%, n= 181) regularly searched online resources for educational purposes and 56.2% (172) students would like to receive e-learning resource from their college. Ninety-four point one percent (94.1%, n= 288) said "Yes" to online classes being conducted by their college regularly during the lockdown, and 97.7% (299) attended online teaching sessions by their respective subject teacher. The students preference to online teaching over classroom teaching is shown in Figure-4. Figure-5 shows whether the students miss the classroom ambience during online teaching. The scope to clear doubts during online teaching was said to be absent by 30.4% (93), present by 30.4% (93), and to some extent by 39.2% (120). When asked whether their teachers enjoy online teaching, 33.3% (102) said "not sure", 32.7% (100) said "maybe", 25.8% (79) said "no". Thirty-three point three percent (33.3%, n= 102) said "yes", and 37.6% (115) said "to some extent" when asked whether their parents monitor their online teaching sessions. The responses to the question on being disturbed by people in the house and locality during online learning sessions are shown in Figure-6. The majority of the students (96.4%, n= 295) have attended online assignments and 89.5% (274) have attended online examination during lockdown period. Convenience of cheating in online examination is shown in Figure-7 and Figure-8 shows whether the students would like to have a part of online session to continue in the post COVID-19 era. The majority of the students (36.9%, n= 113) suggested on making the online sessions more interactive, 27.1% (83) do not want online teaching at all, and 12.4% (38) were satisfied with online teaching.

Table-1: Academic year-wise distribution of the respondent students

Curriculum	Gender (Male/Female)	Academic year	Number of Students
MBBS	M=73 F=56	2 nd year (Phase-2)	112
		3 rd year (Phase-3, Part-I)	17
BDS	M=5 F=4	2 nd year	1
		3 rd year	8
BSc Nursing	M=0 F=168	1 st year	1
		2 nd year	72
		3 rd year	50
		4 th year	45

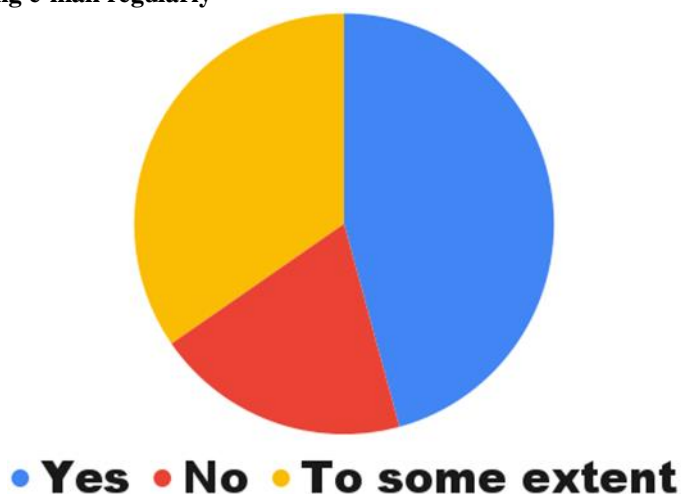
Footnote:

MBBS: Bachelor of Medicine and Bachelor of Surgery

BDS: Bachelor of Dental Surgery

BSc: Bachelor of Science

Figure-1: Students using e-mail regularly



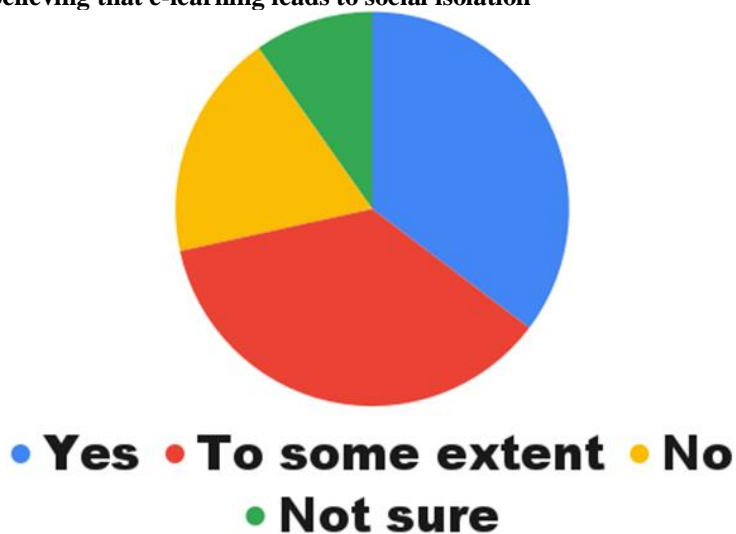
Legend:

Yes = 45.8% (n=140)

No = 19.6% (n=60)

To some extent = 34.6% (n=106)

Figure-2: Students believing that e-learning leads to social isolation



Legend:

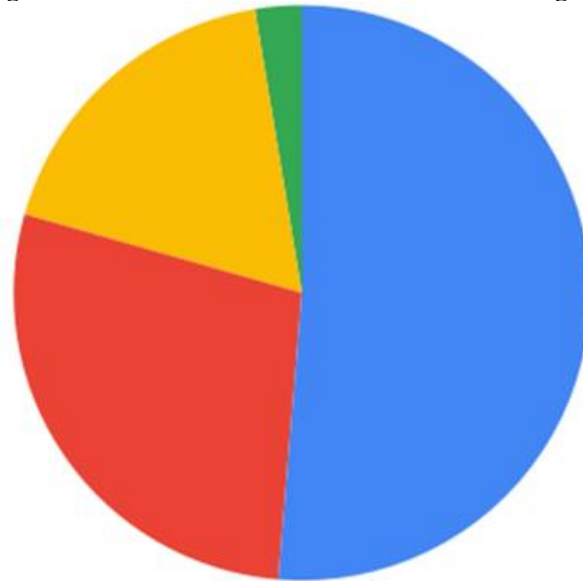
Yes = 35.3% (n=108)

To some extent = 36.3% (n=111)

No = 18.6% (n=57)

Not sure = 9.8% (n=30)

Figure-3: Students believing lack of face-to-face interaction reduces learning



● Yes ● To some extent ● No ● Not sure

Legend:

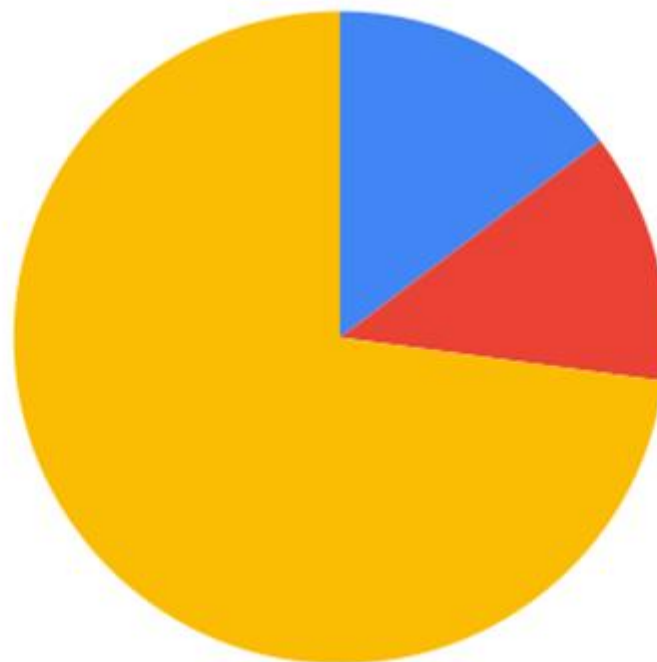
Yes = 51.3% (n=157)

To some extent = 28.1% (n=86)

No = 18% (n=55)

Not sure = 2.6% (n=8)

Figure-4: Students prefer online teaching over classroom teaching



● Yes ● To some extent ● No

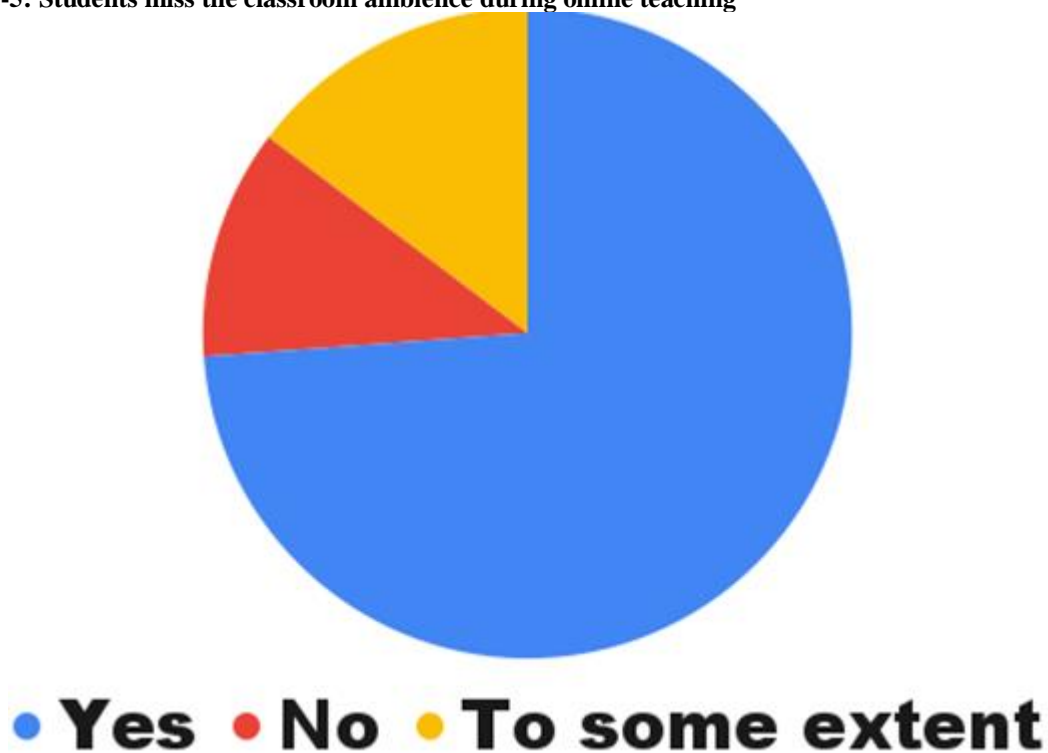
Legend:

Yes = 14.7% (n=45)

No = 72.9% (n=223)

To some extent = 12.4% (n=38)

Figure-5: Students miss the classroom ambience during online teaching



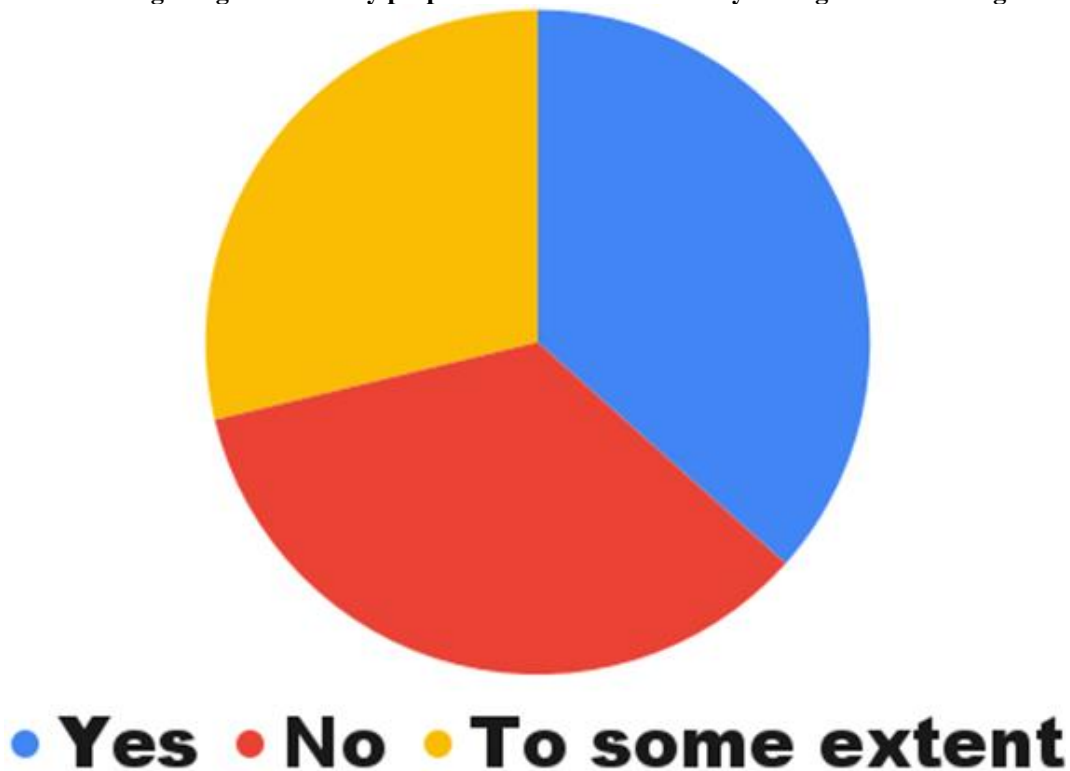
Legend:

Yes = 73.9% (n=226)

No = 11.4% (n=35)

To some extent = 14.7% (n=45)

Figure-6: Students getting disturbed by people in their house or locality during online learning sessions



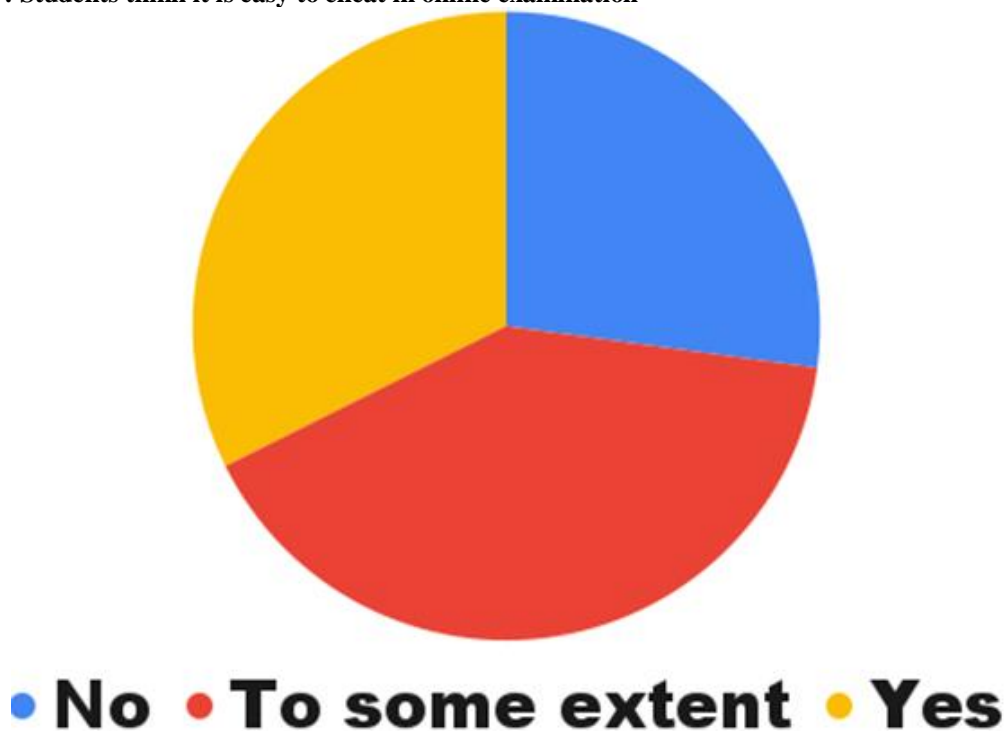
Legend:

Yes = 36.6% (n=112)

No = 34.6% (n=106)

To some extent = 28.8% (n=88)

Figure-7: Students think it is easy to cheat in online examination



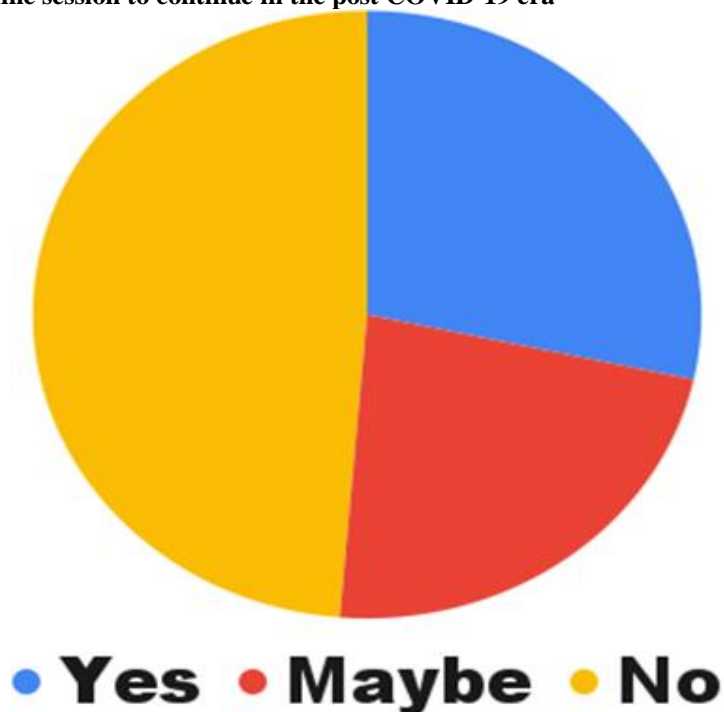
Legend:

Yes = 27.1% (n=83)

No = 32.4% (n=99)

To some extent = 40.5% (n=124)

Figure-8: Part of online session to continue in the post COVID-19 era



Legend:

Yes = 28.4% (n=87)

No = 48.7% (n=149)

To some extent = 22.9% (n=70)

Footnote:

COVID-19: Coronavirus disease 2019

DISCUSSION

The COVID-19 pandemic disrupted the educational process across the globe, which necessitate the adoption of alternative teaching methods like e-learning. Many universities in different countries adopted to e-learning to respond to the epidemic.¹⁰In our institute also, we initiated e-learning to continue with the educational process of our students.

Our study indicates that out of 306 students, 74.2% of them were females and 25.8% males with 54.9% of them being from BSc Nursing and 42.2% from MBBS courses. The majority of them (90.85%) had basic knowledge of operating a computer or mobile phones and most of them (80.4%) use their e-mail regularly or to some extent and 90.85% of them are in social media networking platform. Instagram (28.4%, n= 87), Facebook plus Instagram (19.5%, n= 60), Facebook plus Instagram plus "X" (formerly Twitter) (8.9%, n= 27), and Facebook (8.2%, n= 25) are commonly used social media platforms by the students.

It was observed from the findings of our study that majority of them (60.1%) had never participated in any form of e-learning before the COVID-19 pandemic. Similar findings were seen in another study where the students had no or very limited exposure to e-learning before the COVID-19 pandemic.¹¹

Fifty-nine point two percent (59.2%) students regularly search online resources and 78.4% would like to receive e-learning resources from the college regularly or to some extent. Most of them (94.1%) attended regular online classes during lockdown and 97.7% from their respective subject teachers. Ninety-six point four percent (96.4%) of them were given online assignments and 89.5% attended online examination too.

The majority of the students (73.9%) missed the classroom ambience and 72.9% of them do not prefer online teaching. Similar findings were found in another study, where 86% of medical students felt e-learning had very little impact on their learning and majority of students preferred face-to-face traditional way of teaching over online teaching.¹²However, we also found in our study that 51.3% of them would like to or maybe have a part of online session to continue in the post COVID-19 era.

The present study revealed that while e-learning was widely accepted and recognised as a valuable teaching method during the pandemic but the students still preferred the traditional classroom setting. Most of them (71.6%) believe that e-learning leads to social isolation completely or to some extent and 79.4% believe it reduces learning, which were similar to the findings of the studies conducted by Safiah MH et al.¹³ and Alzamil HA et al.¹⁴

Thirty-point four percent (30.4%) of them thinks that there is no scope to clear their doubts during online teaching. Most of the them (62.4%) said that their parents monitor their online teaching and 65.4% faced disturbances by people in their house or locality

during the online learning sessions. Seventy-two point nine percent (72.9%) thinks it to be very easy or to some extent to cheat during online examination. Another study found that about 30 % of students were unhappy with the delivery of content through online mode and most of the students were getting addicted to mobiles and laptops which in turn had caused a lot of health problems due to the prolonged screen time.¹²Online teaching and learning do not provide proper face reading and interface between teacher and students or among the students.¹⁵

The suggestions made by the students for improvement in e-learning are- making sessions more interactive (47.5%) and interesting (1.7%), increasing the duration of online classes (3.6%), use of animations (0.3%), videos (0.3%), YouTube (0.3%), better online platforms (0.3%).

Strengths and Limitations of our study

The strength of our study is that such kind of study on the perception of the students on e-learning during the COVID-19 pandemic has not been conducted in our part of the world.

The limitation is that our study adopted a questionnaire survey and convenience sampling, resulting in a limited scope of samples collected. It was conducted in one institute and thus further longitudinal studies are recommended to address the shortcomings of this study.

CONCLUSION

E-learning emerged as a crucial alternative to traditional face-to-face learning during the COVID-19 pandemic, enabling the continuity of education despite the challenges posed by the global health crisis. Our study revealed that while e-learning was widely accepted and perceived as valuable, it cannot be considered a complete replacement for traditional classroom teaching in medical education.

The findings highlight the need for a well-thought-out strategy that combines the strengths of both online and face-to-face learning modalities. Implementing a blended learning approach, where e-learning is integrated into the curriculum alongside traditional classroom teaching, could provide a more comprehensive and engaging learning experience for students. Finally, we can conclude that leveraging the advantages of e-learning while preserving the essential aspects of hands-on training and practical sessions, medical education can evolve to meet the changing needs of students and the healthcare landscape.

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We would offer our heartfelt thanks to all the undergraduate students of the Institute who gave their consent to participate in the study.

Abbreviations used

COVID-19: Coronavirus disease 2019

MBBS: Bachelor of Medicine and Bachelor of Surgery

BDS: Bachelor of Dental Surgery

BSc: Bachelor of Science

WHO: World Health Organisation

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