

Original Research Article

Perception of medical college students towards online learning amid COVID-19 pandemic

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ABSTRACT

Background: The nationwide lockdown restrictions to control the spread of COVID-19 impacted all aspects of life and inevitably, medical education was also affected. All medical colleges were forced to suspend face-to-face teaching and adopt online teaching. This study aimed to assess the perception of undergraduate medical students towards online learning which was adopted amid COVID-19 pandemic and to determine the perceived barriers and merits of online learning.

Methods: This cross-sectional study was conducted among undergraduate medical students of a private medical college in Dharwad. A pre-designed and pre-tested proforma (Google Form) was shared via WhatsApp group. Data obtained was analysed using SPSS version 20.0.

Results: A total of 201 undergraduate medical students participated in the study of which 51.2% were male and 48.8% female. The mean age of study participants was 20.3 ± 1.02 years. Majority (71.1%) of the students used mobile phones to attend online classes. Majority (82.7%) of the students preferred face-to-face teaching over online teaching. 79% students perceived that online teaching was not as effective as face-to-face teaching and 86.1% were not able to learn clinical skills through online learning. Poor internet connectivity, family distraction, inability to meet friends, lack of co-curricular activities, and difficulty in concentration were barriers to online learning.

Conclusions: The present study found that, students had negative perception towards online learning. It is important that medical schools and educators know the barriers and advantages of online learning, and come out with solutions to make online learning more acceptable to the students.

Keywords: Perception, Medical students, Online learning, COVID-19

INTRODUCTION

Coronavirus disease-2019 (COVID -19) was discovered in China in December 2019 and it spread worldwide within few months. The World Health Organization (WHO) declared it as pandemic on 11th March 2020.¹

Due to rapid transmission of COVID-19 by social gathering, the Government of India announced a nationwide lockdown on March 24, 2020.² The nationwide lockdown restrictions to control the spread of COVID-19 impacted all aspects of life and inevitably,

medical education was also affected. According to UNESCO more than 1.5 billion students and youth across the world were affected by school and university closures due to the COVID-19 pandemic.³ All medical colleges were forced to suspend face-to-face teaching and training activities by an executive order of the district magistrate.⁴ Following the lockdown, the University Grants Commission (UGC) issued a guideline for online teaching and the universities directed their affiliated medical colleges to start online classes.⁴

Online learning (e-learning) is the use of the internet and associated devices for educational purposes without

geographical constraints.⁵ It is composed of a set of applications and processes, including computer-based learning, web-based learning, digital collaboration and virtual classrooms.⁶ There are different approaches to online learning. It can be synchronous or asynchronous. Synchronous online learning involves online studies through video conferencing like Webinars. This kind of learning is real-time. Here various online platforms like Zoom, Google Classroom, Cisco WebEx etc are used. Asynchronous learning occurs through online channels without real-time interaction.⁷ The minimum requirement for students to participate in an online learning is their access to a computer or a mobile phone and uninterrupted internet supply.⁸

Online learning, like any method of teaching, has its advantages and disadvantages for both students and teachers. Some benefits of online learning include time flexibility, convenience, and self-paced learning. Lack of internet connectivity, lack of interaction, insufficient digital skills are some of the limitations of online learning.⁹⁻¹¹

Medical education has unique characteristics that makes it strenuous. A graduate doctor has to perform many intellectual, communicative and psychomotor skills which are complex and difficult for most students to master in a short duration of course of medical studies. The structure of medical education is based on fundamental principle of patient-centered approach with equal emphasis on classroom teaching and hands-on demonstration. The students learn the techniques and develop skills in these practical classes.⁷

With COVID 19 pandemic the environment of medical education had to change rapidly. This pandemic did not only create the need, but may also have provided an opportunity to accelerate the digital transformation of medical education. We should expect to see further incorporation of online teaching methods into medical education.¹²

With this background, the present study was conducted to assess the perception of undergraduate medical students towards online learning which was adopted amid COVID-19 pandemic and to determine the perceived barriers and merits of online learning.

METHODS

This was a cross-sectional study which was conducted among undergraduate medical students of a private medical college in Dharwad, in the month of June to July 2021. MBBS students from first professional year to final professional year willing to participate were included in the study. After obtaining ethical clearance from Institutional Ethics Committee, 4 WhatsApp groups were created with respective year students in each group. The objectives of the study was explained through WhatsApp chat. The e-questionnaire (Google forms) along with

informed consent was shared via WhatsApp. The e-questionnaire included relevant socio-demographic details along with questions to assess their perception of online learning, merits and barriers to online learning. This self-administered questionnaire contained both open and close ended questions. Incompletely filled e-questionnaire were excluded from analysis. A reminder was sent to the participants on 3 different days of a week so as to encourage them to answer the questionnaire and thereby reduce the non-response rate. Also, the reminder allowed the students to answer at a different time in case they had some other pre-occupations. Confidentiality was assured to the students so that they could answer the questionnaires without bias.

Statistical analysis

The data collected was entered in Microsoft Excel and analysis was done by SPSS software version 20.0. Socio-demographic variables and response to perception questions were presented as frequency and percentage.

RESULTS

Characteristics of the study participants

Table 1 shows characteristics of the study participants. A total of 201 undergraduate medical students participated in the study of which 103 (51.2%) were male and 98 (48.8%) were female. Majority of the participants 108 (53.7%) were in the age group of 18 to 20 years. The mean age of study participants was 20.3±1.02 years. Majority 143 (71.1%) of the students used mobile phones to attend online classes.

Table 1: Characteristics of study participants (n=201).

Variables	Frequency	Percentage (%)
Gender		
Male	103	51.2
Female	98	48.8
Age group (in years)		
18-20	108	53.7
21-23	93	46.3
Academic year		
First year	44	21.9
Second year	53	26.4
Third year	55	27.4
Final year	41	20.4
Choice of device		
Mobile	143	71.1
Tablet	35	17.4
Laptop	23	11.5

In the present study, 35 (17.4%) students participated in online learning before COVID-19 pandemic and all the students used video tutorials (YouTube) as a form of e-learning.

Table 2: Perception of medical undergraduates towards online learning (n=201).

Questions	Response		
	Yes (%)	No (%)	To some extent (%)
Online teaching is stimulating	27 (13.4)	105 (52.2)	69 (34.4)
Easy to engage in the lesson	23 (11.5)	108 (53.7)	70 (34.8)
Online learning leads to social isolation	134 (66.7)	17 (8.4)	50 (24.9)
Enjoy online learning	13 (6.5)	133 (66.1)	55 (27.4)
Online teaching is as effective as face-to-face teaching	12 (5.9)	159 (79.1)	30 (15)
Piling of study materials	154 (76.8)	47 (23.2)	-
Prefer online teaching to face-to-face teaching	12 (5.9)	166 (82.7)	23 (11.4)
Scope to clear doubt during online teaching	111 (55.2)	20 (9.8)	70 (35)
Able to learn practical clinical skills through online learning	5 (2.5)	173 (86.1)	23 (11.4)
Well prepared for your profession	17 (8.5)	141 (70.1)	43 (21.4)

Perception towards online learning

Table 2 shows response of students towards perception questions. Overall, students had negative perception towards online learning. Majority of students 105 (52.2%) found that online teaching was not stimulating. Only 23 (11.4%) students found it easy to engage in lessons. Majority 159 (79.1%) students perceived that online teaching was not as effective as face-to-face teaching.

In the present study, majority 141 (70.1%) perceived that they were not being well prepared for their profession and 86.1% perceived that they were not able to learn practical clinical skills through online learning. 154 (76.6%) students reported that there was piling up of study materials.

In the present study, majority 166 (82.7%) students preferred face-to-face teaching over online teaching.

Figure 1 shows the merits of online learning perceived by the students. More comfortability, time flexibility, location flexibility, ability to learn at their own pace, no travel, and cost saving were merits of online learning.

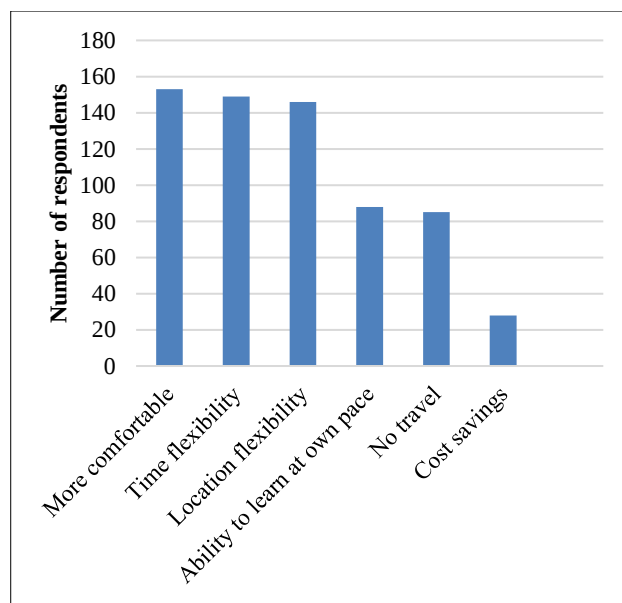
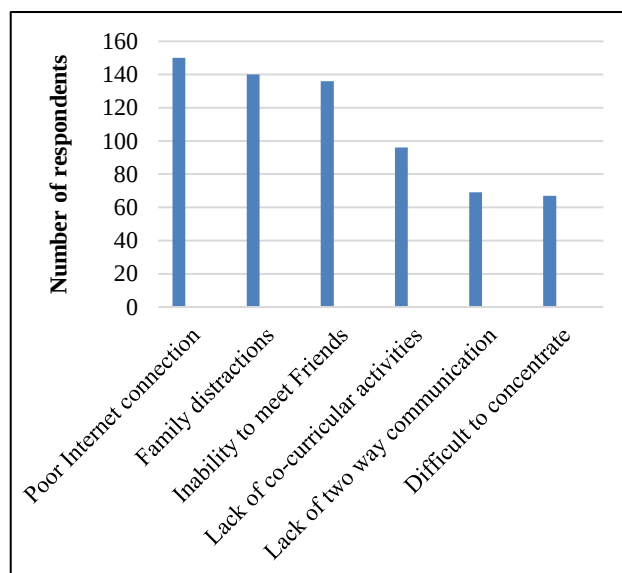
**Figure 1: Merits of online learning.****Figure 2: Barriers of online learning.**

Figure 2 shows the barriers to online learning perceived by the students. Majority of the students perceived poor internet connectivity, followed by family distractions, inability to meet friends, lack of co-curricular activities, lack of two-way communication, and difficulty in concentration as barriers of online learning.

DISCUSSION

COVID-19 pandemic had a serious impact on all aspects of life including education. Every educational institution was forced to suspend face-to-face teaching and adopt online teaching.

The present study assessed the perception of medical college students towards online learning. In the present

study, mobile phones (71.1%) were the most commonly used device to attend online classes followed by tablet (17.4%) and laptop (11.5%). Similar studies conducted by Shree et al, Gupta et al and Thapa et al in Nepal found that mobile phones were most commonly used gadget for online learning.¹³⁻¹⁵

In the present study, majority (82.7%) of the students preferred face-to-face teaching over online teaching. 79% students perceived that online teaching was not as effective as face-to-face teaching and 86.1% were not able to learn clinical skills through online learning. Similar findings were observed in studies by Dost et al in UK and Abbasi et al in Pakistan where majority of the students preferred traditional face-to-face teaching over online teaching.^{16,17} The poor perception of students towards online learning may be because disadvantages out-weighs advantages, as medical education can never be fully learnt or understood by online teaching.⁸

In the present study, advantages of online learning were more comfortability, time and location flexibility, ability to learn at own pace, no travel, and cost saving. Disadvantages of online learning were poor internet connectivity, family distraction, inability to meet friends, lack of co-curricular activities, and difficulty in concentration. These findings were consistent with studies by Bazek et al in Poland, Motte-Signoret et al in Paris, Ibrahim et al in Saudi Arabia and Gismalla et al in Sudan.^{11,12,18,19}

In this COVID-19 era, the future of medical education has changed forever. Online teaching is a relatively new concept in medical field that is rapidly expanding. This should be promoted amongst students and faculty so that they are prepared in situations like COVID-19 pandemic. COVID-19 pandemic has taught us that change is inevitable and change is possible with overall support and effort.

Limitations

Limitations of this study is poor response rate. Out of 400 undergraduate medical students only 201 students participated in the study

CONCLUSION

The present study found that most undergraduate medical students had negative perception towards online learning. Poor internet connectivity, family distractions, inability to meet friends, lack of co-curricular activities, lack of two-way communication, difficulty in concentration are barriers to online learning. It is important that medical schools and educators know the barriers and advantages of online learning, and come out with solutions to make online learning more acceptable to the students.

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