A CROSS-SECTIONAL STUDY OF ATTITUDE AMONG MEDICAL STUDENTS ABOUT ONLINE LEARNING DURING COVID-19 PANDEMIC IN SOUTHERN INDIA

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ABSTRACT

Objectives: The study aimed to assess the attitude of the medical students toward online classes during COVID-19 pandemic in Southern India.

Methods: This study was an online cross-sectional descriptive study. First- and 2nd-year medical students were asked to fill out an online questionnaire using Google form. The participants were asked to answer the questions on a Likert scale, from 1 to 5. The questionnaire consists of details about the type of gadgets, type of internet connection used for E-learning classes, overall Students' attitude and satisfaction with online education, and the challenges associated with online teaching.

Results: A total of 279 medical students participated, among them 168 (60.2%) were females and 111 (39.8%) were males. About 43.36% of students used mobiles for purpose of E-learning. 59.14% of students expressed their interest to incorporate E-learning into the curriculum in the future. Regarding students' attitudes and satisfaction with online education, 63.4% stated that easy to access online teaching and 50.15% stated that online teaching was effective, 48.35 stated that online teaching was engaging and visually attractive 45.9% and 38% stated that online teaching was the effective communication method. Major challenges associated with online teaching were lack of cocurricular activities that was 63.5% followed difficulty to concentrate during classes was 58.7%. For plans and criteria for evaluation, 58.06% preferred the objective method of examination.

Conclusion: The majority of students showed positive responses toward online teaching during COVID-19 pandemic but there are certain challenges like lack of cocurricular activities and difficulty concentrating during classes.

Keywords: Online classes, Medical students, Covid-19, E-learning.

INTRODUCTION

The recent COVID-19 pandemic has posed a serious threat to global public health. Various measures such as avoiding close contact with infected individuals, staying at home, and frequent washing of hands have been implemented for the prevention of COVID-19 spread [1]. The primary goal of undergraduate medical education is to train and produce holistic primary care physicians who will serve the needs and expectations of a patient with compassion and empathy. The shift in medical education is toward shared responsibility in the learning process being learner-centric, self-directed, and focusing on the application of acquired clinical skills [2].

Globally, the COVID-19 pandemic has brought a major interruption of systems, including education and the health-care system. COVID-19 lockdown transiently changed the traditional classroom teaching toward online E-learning in medical education [3]. Several universities over the world encourage E-learning as the future mode of teaching method and are being extensively acclaimed among the learners [4].

UNESCO commences a comprehensive education movement to assist countries to maximize their distance teaching and connecting to the target population who are in the need of education [5]. At this crucial juncture when the whole world is combating the virus, online learning methods emerged as an alternative method where the academicians are challenged to implement various methods of E-learning to keep the process of learning uninterrupted and effective [6]. Hence, the present study aimed to assess the attitude of the medical students toward online classes during COVID-19 pandemic in southern India.

METHODS

This study was an online cross-sectional and descriptive study conducted among 1st- and 2nd-year medical students at a medical college in Southern India.

The medical students were asked to fill online questionnaire using Google form in the month of May 2021. The students were directed to respond with a single most fitting response. All responses were aggregated and evaluated. Those participants with a partially filled questionnaire were ruled out from the study. A total of 279 students have participated in this study. The participants were asked to answer the questions on a Likert scale, from 1 to 5. The questionnaire consists of details about the type of gadgets, type of internet connection used for E-learning classes, overall Students' attitude and satisfaction with online education, and the challenges associated with online teaching [7]. Students were also asked about plans and criteria for evaluation during online teaching [8].

The Institutional Ethics Committee clearance certificate was obtained on April 19, 2021 and informed consent was being taken from the students before collecting the data. All the COVID-19 safety protocols were followed during the study.

RESULTS

The results of the study will be tabulated in the following manner. Table 1 shows that of the study participants, 60.2% were females and 39.8% were male medical students. About 43.36% of students used mobiles, 30.82% used a combination of mobile/laptop/computer, and 25.80% used laptop/desktop for E-learning. About 36.20% used Wi-Fi,

32.61% used the combination of cellular data and Wi-Fi, and 31.18% used cellular data for E-learning classes. About 59.14% of students expressed their interest and 40.86% were opposed to incorporating E-learning into the curriculum in the future.

Table 2 shows the students' attitudes and satisfaction regarding online education, 50.1% stated that online teaching was effective, 26.1% were on the equivocal side, and 23.7% stated that online teaching was ineffective. About 63.4% stated that easy to access online teaching, 19.7% were on the equivocal side and 16.8% stated that accessing online teaching was difficult. About 48.35% stated that online teaching was engaging, 29.4% on the equivocal side, and 22.2% stated that online teaching was unappealing. E-learning was found visually attractive by 45.9%, 35.1% were on the equivocal side, and 19% stated visually E-learning was unaesthetic. About 38% stated that online teaching was an effective communication method, 31.5% were on the equivocal side and 30.5% said that online teaching was an ineffective method for communication.

Table 3 shows the challenges associated with online teaching,16.8% stated that the language barrier was more challenging, 12.5% were on the equivocal side and 70.6% faced fewer challenges with language. About 56.2% stated that the inability to meet friends was more challenging. About 52.6% stated that lack of two-way communication was more challenging. About 63.5% said that lack of cocurricular activities was more challenging. About 46.2% stated that there were problems with internet connectivity. About 58.7% said that it was difficult to concentrate during online teaching.

Table 1: Students response to E-learning questions (n=279)

Gender
Female – 168 (60.2%),
Male – 111 (39.8%)
Type of gadget used for attending E-learning classes
Laptop/Desktop – 72 (25.80%)
Mobile – 121 (43.36%)
Mobile/Laptop/Computer – 86 (30.82%)
Type of internet connection used for E-learning classes
Cellular data – 87 (31.18%)
Wi-Fi – 101 (36.20%)
Combination of cellular data and Wi-Fi – 91 (32.61%)
In the future, should E-learning be incorporated into your curriculum?
Yes – 165 (59.14%)
No - 114 (40.86%)

Table 4 shows the plans and criteria for evaluation, 64.87% felt that a quiz of 5–10 min during each class is necessary to achieve a better understanding of the class. About 48.03% stated that assignment at end of every class was necessary to achieve effective learning and 35.12% stated that the deadline for submitting assignments is 1 day. About 58.78% were pleased to attend the online examinations and 58.06% opted objective type of online examination for evaluation of E-learning.

DISCUSSION

Globally, the COVID-19 pandemic has brought a major interruption of systems, including education and the health-care system. COVID-19 lockdown transiently changed the traditional classroom teaching toward online E-learning in medical education. This study aimed to assess the attitude of the medical students toward online classes during COVID-19 pandemic in Southern India.

As per the results, female medical students were more among the participants. The majority of the students used mobiles for purpose of E-learning. The most of the students expressed their interest to incorporate E-learning into the curriculum in the future. Regarding students' attitudes and satisfaction with online education, a greater number of students stated that online teaching was effective and it was easy to access online teaching. The major part of the students accepted that online teaching was engaging and visually attractive.

This study was supported by Kumar *et al.* [9] where the majority of the respondents have used mobiles to attend the online classes and a greater number of the participants agreed that online classes enhance the learning capability of the students.

A similar study was done by Koirala *et al.* [10] and Abbasi *et al.* [11] were also observed that the majority of students preferred using mobile phones to attend online classes and also believed E-learning was a better teaching method and in favor of the future learning. Another study by Maheshwari *et al.* [12] also revealed that E-teaching increased students' satisfaction levels concerning learning.

Major challenges associated with online teaching in descending order were lack of cocurricular activities, difficulty to concentrate during online classes, inability to meet friends, lack of two-way communication, and problems with internet connectivity. This finding in our study was supported by Kalpana *et al*. [7]. They stated that internet connectivity was a major challenge to many respondents, followed by a dearth of cocurricular activity and an inability to meet friends.

Table 2: Overall Students' attitude and satisfaction with online education (n=279) (Likert scale 1–5) 5 – Very satisfied. 1 – Very dissatisfied

Satisfaction coefficient of online teaching	Unsatisfied group		Equivocal	Satisfied group	
Likert scale	1	2	3	4	5
How effectively did the online teaching help you learn?	11 (4%)	55 (19.7%)	73 (26.1%)	95 (34%)	45 (16.1%)
How easy was the access to online teaching?	09 (3.2%)	38 (13.6%)	55 (19.7%)	106 (38%)	71 (25.4%)
How engaging did you find online teaching?	15 (5.4%)	47 (16.8%)	82 (29.4%)	88 (31.5%)	47 (16.8%)
How visually attractive did you find online teaching?	12 (4.3%)	41 (14.7%)	98 (35.1%)	85 (30.5%)	43 (15.4%)
Level of the effectiveness of communication in online teaching	32 (11.5%)	53 (19%)	88 (31.5%)	72 (25.8%)	34 (12.2%)

Table 3: Challenges associated with online teaching (n=279) (5 – Strongly agree. 1 – Strongly disagree)

Challenges	Fewer challenges		Equivocal	More Challenges	
Likert Scale	1	2	3	4	5
Language Barrier	145 (52%)	52 (18.6%)	35 (12.5%)	39 (14%)	08 (2.8%)
Inability to meet Friends	21 (7.5%)	46 (16.5%)	55 (19.7%)	96 (34.4%)	61 (21.8%)
Lack of two-way communication	38 (13.6%)	36 (12.9%)	58 (20.8%)	67 (24%)	80 (28.6%)
Lack of cocurricular activities	12 (4.3%)	28 (10%)	62 (22.2%)	103 (37%)	74 (26.5%)
Problems with Internet connectivity	32 (11.5%)	34 (12.2%)	84 (30.1%)	77 (27.6%)	52 (18.6%)
Difficulty to concentrate	21 (7.5%)	30 (10.7%)	64 (22.9%)	98 (35.1%)	66 (23.6%)

Table 4: Plans and criteria for evaluation (n=279)

Attributes	Percentage
Do you feel a quiz of 5–10 min during each class is necessary to achieve better?	
No – 98	35.13
Yes – 181	64.87
Do you feel assignments at end of every class are necessary to achieve effective learning?	
No – 145	51.97
Yes – 134	48.03
Deadline for submitting assignments	
1 day – 98	35.12
1 week - 45	16.13
2–3 days - 39	13.97
Before the next scheduled class - 97	34.76
Do you like to attend online exams	
No – 115	41.22
Yes – 164	58.78
Nature of online exam	
Both – 55	19.71
Objective - 162	58.06
Subjective – 62	22.22

Another study by Rani *et al.* [13] also observed that there are many challenges like lack of interaction, internet issues, and teaching practical aspects which act as forbidding factors for the execution of E-learning in medical education.

For plans and criteria for evaluation, the majority of students felt that a quiz of 5–10 min during each class was necessary to achieve a better understanding of the class. Most of them stated that assignment at end of every class was necessary to achieve effective learning and the deadline for submitting assignments was 1 day. A greater number of students were pleased to attend the online examinations and the preferred method of the online examination was an objective type for evaluation of E-learning.

Muthuprasad *et al.* [8] also indicated the need for interactive sessions with quizzes and assignments at the end of each class to optimize the learning experience. Nevertheless, most students disclosed that online classes are perhaps farther challenging than conventional classroom teaching.

Another study by Rani *et al.* [13] also stated that integrated quizzes at the end of each session, organizing a debate during the class, and practicing interactive case-based scenarios can be recommended to maintain interaction in E-learning classes.

CONCLUSION

COVID-19 pandemic caused a transitory shift of traditional classroom teaching toward online E-learning in medical education. As per this study, the majority of the medical students showed positive adaptation to online E-learning. Nevertheless, there are many challenges like lack of cocurricular activities, difficulty concentrating during online classes, inability to meet friends, lack of two-way communication, and problems with internet connectivity act as forbidding factors for the execution of E-learning in medical education. All these challenges need to be addressed and fixed in a proper systematic manner to make online E-learning an alternative learning method in medical education.

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