

Original Research Paper

A Cross-Sectional Study on the Perception of Faculty on Online Medical Teaching during the Three Waves of COVID-19 in a Teaching Hospital in North-Eastern India

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ABSTRACT

Background: Medical education has undergone drastic changes from conventional face-to-face to online classes during the three phases of the pandemic. However, not many studies reflected the teacher's perspective. Therefore, this study is aimed at assessing the perception of medical teachers toward online teaching during the COVID-19 pandemic.

Methodology: It was a cross-sectional questionnaire-based study containing the demographic description of the participants and the perception of the participants towards online teaching. Likert's scale for rating the answers was used for grading from one to five. These responses were entered into Microsoft Excel 2007 and analyzed accordingly. The data was expressed in frequencies and percentages.

Results: Out of 47 participants having a mean age of 35.26 years and a mean teaching age of 6.5 years, Google Meet was the most utilized platform. 85.10% were accustomed to the devices used and 76.59% to the software. 76.59% felt the interaction with students was difficult. 57.45% of them opined that students were not attentive and 81% felt difficulty in monitoring the students. 51.06% of the teachers felt distracted during the classes. 38.30% and 6% felt online classes were as good as physical classes in dispersing theoretical and practical knowledge, respectively.

Conclusion: The teachers were comfortable with teaching via an online platform and were accustomed to the technology. However, they felt that physical or face-to-face classes were better in comparison to online classes.

Key Words: Online classes, medical faculty, perception, COVID-19, Google Meet, distraction, physical class.

Introduction

The COVID-19 pandemic has caused great disruption which affects individuals from every walk of life. During the pandemic, medical education has also undergone drastic changes where the teaching and learning methods move from conventional face-to-face or physical classes to online classes. Online learning can be defined as the use of electronic technology and media to deliver, support, and enhance both learning and teaching and involves communication between learners and teachers who are utilizing online content [1].

Online teaching has its merit and demerit. Its advantages include flexibility and convenience for students and teachers, reproducibility of the learning resources, and learners' can progress at their preferred pace [2]. The common disadvantages are the missing of face-to-face interactions, eye contact, personal attention, difficulty to retain engagement, difficulty to teach a certain skill like communication, etc [3,4].

Although many studies have been conducted on the perception of online teaching these were mostly carried out on students and the teacher's perspective was not taken into consideration [5,6]. Therefore, this study aimed at assessing the perception of medical teachers towards online teaching during the COVID-19 pandemic.

Methodology

This cross-sectional study was conducted at a tertiary care medical institute. Medical teachers comprising faculty and residents, who gave consent for this study and were actively involved in online teaching, were included as study participants. The participants were provided with a questionnaire that consisted of two parts. The first part contained the demographic description of the participants and the second part contained 11 questions related to the perception of the participants towards online teaching. Likert's scale was utilized for rating the answers from I – 5 where 1 – Strongly agree, 2 – Agree, 3 – Neutral, 4 – Disagree, and 5 – Strongly disagree [7]. Responses were entered in Microsoft Excel 2007 and subjected to descriptive analysis. The data were expressed in frequencies and percentages. Approval for the project was obtained from the Institutional Ethics Committee (IEC) on 28th December 2020.

Results

There were 47 teachers who participated in this study and their mean age was 35.26 years. Their teaching experiences range from 1 to 24 yrs with a mean of 6.5 years. The electronic device used by teachers to conduct online classes includes desktop, laptop, tablet, and mobile phones. Among the various online platforms available, Google meet was utilised the most by the teachers followed by Zoom. The demographic description of the teachers including the devices and software used are shown in Table 1.

Table 1: Socio-demographic profile of participants (n=47)

Age (In Years)	Mean \pm SD	35.2 \pm 7.9
	Range	27 (26-53)
Teaching Experience	Mean \pm SD	6.59 \pm 6
	Range	23 (1-24)
Device Used	Type	n (%), N= 40
	Desktop	18 (38.30%)
	Laptop	13 (27.66%)
	Mobile/Tablet	3 (6.38%)

	Multiple	6 (12.77%)
Software Used	Type	n (%) N= 35
	Google Meet	11 (23.40%)
	Zoom	9 (19.15%)
	TrueConf	5 (10.64%)
	Multiple	10 (21.28%)

It was observed that a majority of the teachers (72.34%) were comfortable with online teaching as depicted in Table 2.

Table 2: Perception of teachers towards Online Classes (n=47)

Q No	Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I am comfortable with online class	4 (8.51%)	30 (63.83%)	5 (10.64%)	5 (10.64%)	3 (6.38%)
2	Internet connectivity is good	12 (25.53%)	21 (44.68%)	5 (10.64%)	9 (19.15%)	0
3	Students are attentive during the class	0	4 (8.51%)	16 (34.04%)	21 (44.68%)	6 (12.77%)
4	There is no distracting agent during online class	3 (6.38%)	14 (29.79%)	6 (12.77%)	17 (36.17%)	7 (14.89%)
5	I am accustomed to the smart devices I am using for an online class	11 (23.40%)	29 (61.70%)	2 (4.26%)	5 (10.64%)	0
6	I am aware of the features of the software used	8 (17.02%)	28 (59.57%)	7 (14.89%)	3 (6.38%)	1 (2.13%)
7	My time management for the online class is as good as a physical class	8 (17.02%)	23 (48.94%)	5 (10.64%)	9 (19.15%)	2 (4.26%)
8	Interaction with students during online classes is as good as a physical class	0	4 (8.51%)	7 (14.89%)	21 (44.68%)	15 (31.91%)
9	I can monitor all the students present during the class	1 (2.13%)	2 (4.26%)	6 (12.77%)	22 (46.81%)	16 (34.04%)
10	Online classes are as good as physical classes for disseminating theoretical knowledge	0	18 (38.30%)	8 (17.02%)	16 (34.04%)	5 (10.64%)
11	Online classes are as good as physical classes for disseminating practical knowledge	0	0	2 (4.26%)	24 (51.06%)	21 (44.68%)

An uninterrupted internet connection plays a vital role in the smooth conduct of any online class. In this study, 70.21% of the teachers found that internet connectivity was good. In addition, many of them were accustomed to the device (85.10%) and the software (76.59%) used for online classes. One of the most important parts of any teaching-learning process is teacher-student interaction but 76.59% of the teachers felt that this was difficult during online classes. Student attentiveness is another factor that received an unfavourable response from the teachers with 57.45% of them opining that students were not attentive during an online class. Moreover, nearly 81% of the teachers felt that monitoring the students during these classes was difficult. While 51.06% of the teachers expressed being distracted during classes, 36.17% felt the contrary.

Regarding teaching theoretical knowledge, 38.30% of the teachers agreed that online classes were as good as physical classes while 44.68% felt that physical classes were better. However, when it comes to teaching the psychomotor domain, more than 94% of them believed that physical class was better. Time management was another factor that was compared between online and physical classes. In this aspect, more than 65% of the teachers agreed that online classes were as good as physical classes.

Discussion

The pandemic, since it started, has brought changes to every sphere of life. Medical education has also been affected by it whereby the processes of teaching and learning medicine are being carried out through the online platform in place of the conventional classroom atmosphere. However, a majority of the teachers in our study have been able to adapt to and remained unaffected by this change with more than 72% of them responding of being comfortable with online teaching. For those who encounter problems during online teaching, regular training programs on E-learning may help overcome this issue. The finding was also reported by a previous study in which only 10.19% of faculty were uncomfortable with online teaching [3].

Regarding the familiarity of the teachers with the technology involved in taking online classes, many of them were accustomed to the devices and features of the software used for this purpose; a finding similarly observed by other studies [8,9]. This positive response by the teachers could be due to the participants being more from the younger age group who are more aware of the advancement in modern technology. Internet connectivity is not a problem for many of the teachers in this study even though it has been cited earlier as one of the many barriers to carrying out effective online teaching [10]. This may be attributed to the fact that the classes were taken from designated areas overseen by the staff under the Telemedicine department of the Institute.

Factors like student attentiveness and student monitoring have received unfavourable responses where the majority of the teachers found it difficult to monitor the students during online classes. This is a concern also shared by the previous study [11]. Some of the teachers in our study also reported being distracted while taking online classes, for example students making annotations on screen, a finding also noted by 45.2% of the participants in a study by Vishwanathan K et al [12]. This distraction can be minimized through a proper and thorough understanding of the online platform used where the host (teacher) exercises control such as muting all the students and disabling specific applications during the class. The students should also be advised to log in for the class on time as lack of punctuality is also another important factor that may lead to the teacher being distracted during online classes. Another factor that received an unfavourable response from the teachers in our study was the interaction with the students where a majority of them preferred physical classes to online classes; a finding similar to Motte-Signoret E et al [13]. However, Joshi KP et al found that 44% of faculty were satisfied with the student-faculty interaction during online classes [8].

In this study, an effort was also made to compare the effectiveness of disseminating theoretical and practical knowledge between online and physical classes. As far as imparting theoretical knowledge and psychomotor domains are concerned, the teachers felt that online classes are as good as physical classes for disseminating theoretical knowledge but almost all of them thought that physical classes are much better than online classes for teaching psychomotor domain. Similarly, previous studies have supported this finding where the teachers found it difficult to teach skill domains during online classes [3,8,14].

Conclusion

The teachers were comfortable with teaching via an online platform and were accustomed to the technology to conduct online classes. However, they thought that the students were not attentive and found it difficult to monitor them during the classes. As far as teaching the psychomotor domain and interaction with the students were concerned, it was felt that physical or face-to-face classes were better in comparison to online classes. The pandemic has taught an important lesson that it is necessary for medical teachers of today to equip themselves with e-learning skills and

knowledge to tide over the challenging waves that cross their path in their quest for educational excellence.

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