

Perceptions of medical students towards on line teaching during the COVID-19 pandemic: a cross-sectional survey of students of a tertiary care hospital in Durg, Chhattisgarh.

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Abstract:

Introduction: In the last two decades the internet has significantly changed our daily life. During the period of COVID-19 pandemic most of schools and colleges were forced to shut down for almost two years. There is limited understanding of the impact of exclusive online teaching and its use in clinical years. In this study we investigated the perceptions of medical students towards the online teaching.

Aims and Objectives: To study the perception of medical students towards online teaching and to give recommendation based on our study findings.

Method: A questionnaire based Cross sectional study was conducted in medical undergraduates from 2016 to 2020 batch in a tertiary care hospital of Durg, Chhattisgarh for period of one month using convenience sampling in order to evaluate perceptions of medical students towards online teaching.

Results: Student's perception was evaluated using a pre tested questionnaire. Majority of student agree that there are several advantages of online teaching like it saves students time on travelling (61.2%) and flexibility (36%), it is more comfortable and cost effective (27.3%). On the other hand, students were experiencing difficulty to concentrate for long time (76.3%), learning practical's online (72.2%), poor internet connection (73.2%) and distraction due to family (68.7%).

Conclusion: We need to find ways to incorporate this online teaching with traditional method of teaching, this can open new horizons for better teaching opportunities even in remote locations.

Keywords: Perception, Online teaching, Medical students.

Introduction:

In the last two decades the internet has significantly changed our daily life. During the period of COVID-19 pandemic in India all the schools and colleges were forced to shut down for almost two years. This is biggest educational crises but online teaching gives alternative to face-to-face teaching. Online teaching method brought many advantages like accessibility of time and place, efficiency, affordability etc but it has disadvantages too. Contact with patients is essential in educating medical students and they cannot only rely on books for medical knowledge and competency.^[1] During the period of COVID-19 pandemic most of medical colleges were shut down. Teachers and students were required to explore new horizon and this led them to online teaching/learning. Online learning assumes various forms such as online classes, live web simulations, webcasting, and online chat rooms.^[2]

There is limited understanding of the impact of exclusive online teaching and its use in clinical years. Concerns have been raised regarding the quality of resources produced during the pandemic due to time constraints, particularly as these resources aim to compensate for lack of exposure.^[3]

In this study we investigated the perceptions of medical students towards the online teaching.

Methods:

Study design: Cross sectional study

Study Period: One month

Study Area: Study was conducted in a tertiary care hospital in Durg, Chhattisgarh.

Study Population: Medical undergraduates from 2016 to 2020 batch.

Inclusion Criteria: Medical undergraduates who gave consent.

Exclusion criteria: Medical undergraduates who did not give consent.

Sampling Method: Convenience sampling.

Statistical Analysis: Simple percentage was calculated using MS-excel version 2108. After taking proper consent a brief idea of the study was given to all the participating subjects. Before starting survey, all participants were informed that data collected was non-identifiable and would only be used for research purposes.

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All the information for assessing the perception of medical students towards online teaching was collected through a questionnaire.

The questionnaire consisted of two main parts:

1) Demographic data 2) students' perception towards online teaching.

Socio-demographic data: that collected participants' age, gender, residence (urban/rural), parents' occupation, education and income.

Students' perception towards online teaching: This includes the data related 30 different questions to access the perception of students towards online teaching.

Results:

The study was conducted at tertiary care hospital in Durg, Chhattisgarh. The questionnaire was e-mailed to 600 graduate medical students (MBBS students 2016 to 2020 batch) of which 467 responded (response rate 77.8%).

Table 1 shows the demographic data of the study subjects in which majority of responses were females 56.1 %. Mean age of all subjects was 22 ± 1.2 and majority 65.9% belong to urban area. 72% parents of students had income more than 5 lacks. Before the COVID-19 pandemic only 9.8 % students were spending more than 6 hours on online platforms but after COVID-19 it increased up to 42.7% and 87.7% students said that that they got more marks in offline teaching as compared to online teaching. Most of students (85.4%) used smart phone for online learning

Table 1: Demographic characteristics and information about online teaching/learning among medical undergraduate

Sociodemographic Characteristics (n=467)		
Gender	Male	205 (43.9%)
	Female	262 (56.1%)
Age (Years)	Mean \pm SD	22 \pm 1.2
MBBS Year	Batch 2020	127(27.19%)
	Bach 2019	121(25.9%)
	Bach 2018	10(2.1%)
	Bach 2017	107(22.9%)
	Bach 2016	112(23.9%)
Parents Job	Government	234 (50%)

	Private	93 (20%)
	Self employed	140 (30%)
Parents income	Less than 5 lacks	131 (28%)
	5 to 10 lacks	205 (43.9%)
	More than 10 lacks	131 (28.1%)
Native place	Rural	159(34.1%)
	Urban	308 (65.9%)
Tools used for online learning	Smart phone	399 (85.4%)
	Laptop	46 (9.8%)
	Tablet/I pad	22 (4.8%)
How many hours do you spend on online platform before COVID-19?	Less than 2 hours	228 (48.8%)
	2 to 4 hours	165 (35.4%)
	4 to 6 hours	46 (9.8%)
	More than 6 hours	28 (6%)
How many hours do you spend on online platform after COVID-19?	Less than 2 hours	46 (9.8%)
	2 to 4 hours	68 (14.6%)
	4 to 6 hours	154 (32.9%)
	More than 6 hours	199 (42.7%)
In which type of teaching, you got more score?	Online	57 (12.3%)
	Offline	410 (87.7%)

Table 2 shows the student perception of online teaching that contained the data of experience of students of their online teaching/learning. Student's perception was evaluated using a pre tested questionnaire. The students found it is easy to engage in online teaching (62.5%). They found online teaching was enjoyable (53.6%) and easy to ask question in online teaching (31.7%). Majority of student agree that there are several advantages of online teaching like it saves students time on travelling (61.2%),

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provides the ability for students to learn at their own pace (48.7%) and flexibility (36%), it is more comfortable and cost effective (27.3%). On the other hand, students were experiencing difficulty to concentrate for long time (76.3%), learning practical's online (72.2%), perform practical offline after learning them online (70.9%), poor internet connection (73.2%) and distraction due to family (68.7%).

Majority of students did not find online teaching is effective as face-to-face teaching. In the medical field online teaching method cannot replace traditional face to face teaching (clinical teaching) method that students received via direct patient contact.

Table 2: Perception of medical students towards online teaching/learning (N=467)

Questions	Agree	Neutral	Disagree
1)The teaching is often stimulating	86 (18.5%)	190(40.7%)	191(40.8%)
2) I find it easy to engage in the lesson	292(62.5%)	88(18.8%)	87(18.7%)
3) I feel able to ask the questions I want	148(31.7%)	171(36.6%)	148(31.7%)
4) I enjoy the online teaching	108(23.2%)	108(23.2%)	251(53.6%)
5) I would like the online teaching to be more interactive	290(62.2%)	91(19.5%)	86(18.3%)
6) I feel that online teaching is as effective as face-to-face teaching	28(6.1%)	68(14.6%)	371(79.3%)
7) I prefer online teaching to face-to-face teaching	233(49.9%)	63(13.4%)	171(36.7%)
8) The teachers are well prepared for the teaching sessions	216(46.3%)	154(32.9%)	97(20.8%)
9) I feel I am being well prepared for my profession	92(19.6%)	182(39%)	193(41.4%)
10) My Internet connection can be problematic	342(73.2%)	74(15.9%)	51(10.9%)
11) I have positive impact on my studies due to online classes	58(12.4%)	150(32.1%)	259(55.5%)
12) Online classes have increased my technological literacy	216 (46.3%)	159(34.1%)	92(19.6%)
13)I feel online classes help me to gain more knowledge	46(9.8%)	171(36.6%)	250(53.6%)

14)I feel comfortable using online learning tools	200(42.8%)	131(28%)	136(29.2%)
15)I feel learning is same in class and at home on the internet	62(13.2%)	58(12.5%)	347(74.3%)
16)I find it hard to stick to a study schedule of the online course	317(67.9%)	92(19.8%)	58(12.3%)
17)I receive enough support and resources from my teacher	327(70%)	77(16.4%)	63(13.6%)
18)My teacher encourages discussion in an online class	225(48.1%)	189(40.5%)	53(11.4%)
19)My teacher sets guidelines for effective communication and interaction in an online class	205(44%)	191(41%)	71(14.9%)
20) I face difficulty learning practical online	337(72.2%)	100(21.5%)	30(6.3%)
21) I can perform practical offline after learning them online	59(12.7%)	77(16.5%)	331(70.9%)
22) I save travelling time	286(61.2%)	117(25%)	64(13.8%)
23) Online teaching is cost effective	127(27.3%)	140(30%)	200(42.7%)
24) I feel online teaching is more flexible	168(36%)	146(31.2%)	153(32.6%)
25) Online teaching provides ability to learn at own pace	227(48.7%)	128(27.5%)	112(23.8%)
26) While using online classes I feel issues because of family distraction	319(68.4%)	83(17.7%)	65(13.9%)
27)I have sufficient space in my house for attending online classes	221(47.4%)	88(18.8%)	158(33.8%)
28) I feel anxiety due to online lectures	128(27.5%)	175(37.5%)	164(35%)
29) I cannot concentrate longer time for online classes	357(76.3%)	58(12.5%)	52(11.2%)
30) I feel puzzled and frustrated with the content delivered in online classes	105(22.5%)	198(42.5%)	164(35%)

Discussion:

During the COVID-19 pandemic most of the medical colleges in India were closed and chose online teaching as alternative to face-to-face teaching.

Even though online education has been used in past for medical teaching, before this pandemic, it has its own merits and demerits. It

has been established that the barriers to medical e-learning are due to time constraints, poor technical skills, poor infrastructure, lack of institutional strategies, and a general negative attitude towards the huge shift in education methods.^[4]

In this study we wanted to see the perception of medical under graduates towards online teaching.

85.4% of students were using smart phones for online learning and only 9.8% were using laptop. Similar were study findings in other studies also.^[5,6]

Almost 62.2% mentioned it as more interactive than traditional teaching. Similar were study findings in other studies also.^[7,8,9]

Only 12.3% students said that it was easy to stick to a study schedule of the online course, similarly very few 12.4 % mentioned that online teaching had positive impact on their study this low number possibly could be explained with the fact that pandemic had affected both physically and psychologically almost everyone in India, and found it difficult to concentrate, students also found it difficult to gain knowledge 53.6% from online teaching. Similar were study findings in other studies also.^[7]

48.7% mentioned that online teaching provides the ability to learn at their own pace and 36% said this mode has have flexibility, which is understood since teaching mode was exclusively online and majority of students were at home during the lockdown period. Similar were study findings in other studies also.^[10,11] Many students 74.3% mentioned that learning online is not same as in class and almost 80% agreed that online teaching is not effective as face-to-face teaching.

This is true since there is less possibility of active learning through online mode. Similar were study findings in other study also.^[12]

Learning by doing is the process of learning through actions. It is a key component of any good learning experience. There are many benefits to learning by doing, such as increased retention and reduced confusion on how something works. Similarly in our study we found almost 70% of students faced difficulty to do practical offline after learning it online.

27.5% of students mentioned that they feel anxiety due to online lectures. This may be due to lack of social contact and students not having enough interaction with teachers. Similar were study findings in other study also.^[13]

Online teaching has been part of medical education since some time now, therefore enough resources and materials are present for students. In our study also 70% students mentioned that they received support and resources from their teachers Similar were study findings in other study also.^[7,9]

46.3% students mentioned poor quality of session delivered, this could be explained since the session could have been impacted by several factors such as poor internet connection, family distractions and the timing of the tutorials. Similar were study findings in other study also.^[14]

Limitations: The main limitation of the study was that it was conducted in only one medical college in Chhattisgarh. We considered online teaching as whole no separate consideration was given to different techniques/methods of online teaching when investigating students' perceptions and hence we cannot evaluate different types of online teaching provided.

Conclusion: Online teaching was the best option to continue medical education during challenging time of pandemic.

We need to find ways to incorporate this online teaching with traditional method of teaching, this can open new horizons for better teaching opportunities even in remote locations. This online method along with traditional teaching is the way forward for the future.

Recommendation: Online teaching was started due to current COVID pandemic. Although online teaching has been a part of medical training but we need to strengthen this teaching mode so that students feel more confident and gain better through this mode of teaching. Following measures can be done to achieve this:

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Article history: received 10 March 2023, Accepted 14 June 2023

Setting Clear Expectations

Being Mindful of Issues at Home.

Expect the unexpected and remain flexible.

Request regular feedback.

Declaration:

Funding: Nil

Conflict of Interest: Nil

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