

Perspectives of Medical Students Regarding use of Online Teaching Learning Method (e learning) during Covid Pandemic: A Cross Sectional Study Conducted in a Medical College of Western Maharashtra

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Abstract

Covid 19 Pandemic led to paradigm shift in teaching learning methods of medical education and online teaching was used as an exclusive and primary source of education in medical field also In many developed countries online teaching learning method is adopted on a large scale since last few years. However e learning activity of undergraduate and post graduate medical students is very limited as per many studies.

Blending of on line learning and face to face learning in medical education has a vast scope in future era of technology. Therefore a cross sectional study was conducted among second MBBS and Third MBBS students of a medical college in urban area, to understand the perceptions of medical students regarding advantages, disadvantages and barriers for the on line learning.

Methodology: Study design Observational study. Study participants second and third year medical students (n=280) Data was collected using a pre designed questionnaire and analyzed using SPSS software.

Results: Majority of the students (83.6%) used zoom platform for online learning. The approximate time spent on online learning significantly increased post covid. Out of 280 study participants, 59.6% (167) found that online learning gives them the ability to learn at own pace, 47.9% (134) found that it gives flexibility of time. Regarding perceiveddisadvantages, majority of them 82.5% (231) felt that online learning prevents them from acquiring clinical skills, 47.9% (134) felt that the lack of interaction is a disadvantage.

Keywords: Medical Students; Online Study; E-learning.

Background

Nationwide strategies adopted to control Covid pandemic led to paradigm shifts in various fields including Medical Education. In india also due to nation wide lock down policies, during 2020 on line

teaching learning method was used as an exclusive and primary source of education in medical education.

In many developed countries online teaching has played a key role in medical education over recent

years.¹⁻² While addressing the educational needs of health care workers WHO and the United Nations also recommended e learning as a effective tool particularly in developing countries.³⁻⁴

As mentioned in the booklet of Medical council of India, use of electronic means is highly recommended in the broad competency. An Indian Medical Graduate must have obtained this competency at the time of graduation.⁵

In this era of technology there is a vast scope for e-learning in medical education. Currently smartphones, computers providing internet access are the essential modalities in a life of a medical student. However most of the e-learning activity done by the students, residents in the medical colleges is limited to data search for their research work. The use of technology in medical education in other areas is in a nascent stage.⁶

Exclusive use of online teaching learning during pandemic control phase, was a sort of different experience for the students as well as teachers. Therefore the present study was conducted to understand the perceptions of medical students regarding on line learning and to assess the advantages, disadvantages perceived by the medical students while adopting this new technology exclusively.

Methodology

Study Design Observational study

Study Participants: A cross sectional study was conducted among second year and third year medical students of DVVPFs Medical College during December 2020 to March 2021.

Sampling technique and Sample Size: All the students studying in fourth and sixth semester of DVVPFs medical college were included for the online survey as a part of the study. Out of 300 students 280 students responded to online survey, so the final sample size of our study was 280.

Ethical Approval: was obtained from the institutional Ethics committee before starting this study.

Data Collection: Pre designed questionnaire prepared from literature search was used for data collection.^{1,6,7} Both open ended and closed ended questions were used to assess the information regarding use and experience of e-learning, perception of barriers and benefits and opinions about on line learning. Google forms were created and sent to three hundred students. Out of three hundred students two eighty students responded.

Responses were compiled and analyzed using appropriate statistical techniques.

Statistical Analysis: Data was compiled and analyzed using SPSS software. T test and chi square tests were used for tests of significance.

Results

This Cross sectional observational study was conducted among 280 medical students of second (n=135) and third professional year (n=145) of Dr VitthalraoVikhe Patil Medical College Ahmednagar Maharashtra.

Sociodemographic Profile of Participants: A majority (89.63%) of the participants are in the age group of 20-22yrs. Out of total 280 participants, 45.4% (127) were female while 54.6% (153) were male. We have included information related to type of residence whether urban or rural purposefully because internet connectivity issues are more common in rural areas. In our study a majority of students were residing in urban area (66.43%), however 94 (33.57%) were from rural area.

Devices used: Out of 280 study participants, 92.86% (260) use a mobile phone for learning, 10% (28) use a tablet, 9.64% (27) use a laptop and 2.14% (6) use a personal computer. A major proportion of students use their mobile phones for learning online. Zoom was the most common platform used for online learning in 234 students (83.6%) followed by Google classroom in 23 (8.2%).

Out of all participants internet connectivity issues were faced occasionally by 148 students (52.9%), frequently by 93 students (33.2%), seldomly by 31 students (11.1%) and never by 8 students (2.9%).

Mean time spent pre covid was 1.57 ± 1.08 while post covid it was 2.58 ± 1.84 hrs. The approximate time spent on online learning significantly increased post covid. ($p < 0.001$)

Table 1: Approximate time spent on online learning - pre and post Covid-19 pandemic

Time Spent	Pre Covid	Post Covid	
No Online Learning	19	0	
< 2 hours	129	74	
2 to 4 hours	104	136	
4 to 6 hours	28	61	
More than 6 hours	0	1	
Total	280	280	
Mean \pm SD	1.57 ± 1.08	2.58 ± 1.84	$p < 0.001$ (Significant Difference)

This could be explained by the facts that due to nation wide lock down strategy used for pandemic control; on line learning was the most commonly used modality for teaching learning.

Perceived advantages: Out of 280 study participants, 59.6% (167) found that online learning gives them the ability to learn at own pace, 47.9% (134) found that it gives flexibility of time and 41.1% (115) found online learning to be more comfortable.

Table 2: Perceived disadvantages & barriers of online learning: (Multiple response)

a. Perceived disadvantages	Frequency
Lack of acquiring clinical skills	231 (82.5%)
Lack of interaction	134(47.9%)
Less effective	101(36.1%)
b. Perceived barriers	
Internet issues	194(69.3)
Distractions/ Difficulty of concentration	131(46.8)
Lack of devices	19 (6.8%)

Perceived disadvantages: Majority of them 82.5% (231) felt that online learning prevents them from acquiring clinical skills, 47.9% (134) felt that the lack of interaction is a disadvantage, while 36.1%

(101) students, found online learning less effective. A majority of students found the lack of acquiring clinical skills as a major disadvantage of online learning. Internet issues (69.3%) and difficulty in concentration (46.8%) and lack of devices were the most common perceived barriers. (Table 2)

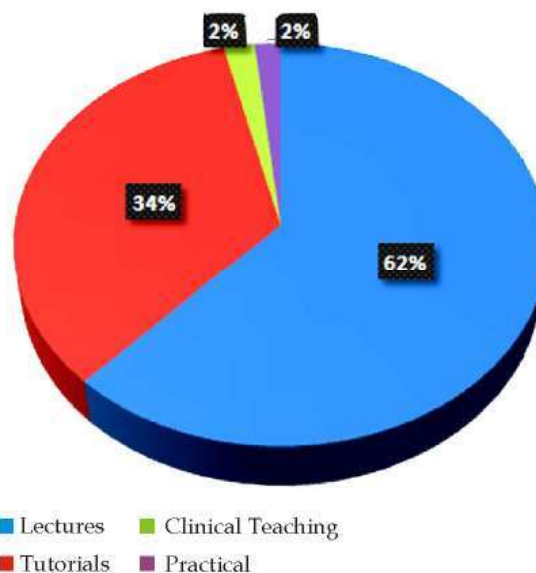


Fig.1: Students perspective about type of teaching method.

Table 3: Students Responses about on line teaching (1 is strongly agree -5 is strongly disagree).

Questions		1	2	3	4	5	Total
The teaching is as effective as face to face teaching	Frequency	21(7.5%)	43(15.4%)	79(28.2%)	92(32.9%)	45(16.15)	280
The teaching is often stimulating	Frequency	10(3.6%)	44(15.7%)	139(49.6%)	57(20.4)	30(10.75)	280
I would like the online teaching to be more interactive	Frequency	36(12.9%)	89(31.8%)	73(26.1%)	46(16.4%)	36(12.9%)	280
I prefer online teaching to face to face teaching	Frequency	24(8.6)	44(15.7%)	54(19.3%)	76(27.1)	82(29.3%)	280

Out of 280 study participants, 22.9% (64) felt that online teaching is as effective as face to face teaching, 49% (137) felt that it is not as effective while 28.2% (79) remained neutral. 24.3% (68) students prefer online teaching to face to face teaching while 46.4% (158) do not prefer online teaching. (Table 3)

Preference for teaching method out of 280 study participants, 62.5% (175) preferred that only face to face teaching, 11.8% (33) preferred only online teaching, whereas 25.7% (72) perceived blending of both the methods. Majority of the students prefer face to face teaching for learning.

The preference for face to face teaching was significantly more by third MBBS students as compared to second MBBS students. In third MBBS

the main academic focus is on acquiring clinical skills for which face to face teaching is preferable option by the students. This may be the reason for significant difference about preference of face to face teaching among second year and third year students. (table 04)

Table 4: Preference for Online versus face to face learning in 2nd and 3rd year students.

	2nd MBBS	3rd MBBS	Frequency
Both	45	27	72
Face to face	63	112	175
Online	27	6	33
Total	135	145	280
$\chi^2 = 31.27, df = 2, p < 0.001$			

Discussion

Present study was conducted among third year (Third Minor) and second year medical students and their perceptions about online teaching learning method regarding its benefits, barriers and effectiveness are assessed and analyzed. In our study, the time spent for on line learning is significantly more in during and after covid 19 pandemic. Similar to our study Dost et al⁷ mentioned in their study conducted across 40 medical colleges in UK that the difference in hours prior to and during the COVID-19 pandemic were found to be significant ($p < 0.05$).⁷

Distractions and difficulty in concentration were the common barriers faced during on line learning, similar finding was mentioned in two other studies conducted by Odoharty et al and Gulati Aet al.^{1,8}

Majority of students in our study preferred face to face learning method. Abbas et al also reported in their study the negative attitude of students towards e-learning and preferred face to face learning because of poor internet access and stability.⁹

Conclusion

Due to Covid control guidelines on line method of teaching learning was used on wide scale in medical education. In our study regarding perspectives of medical students about on line learning ,majority of students preferred face to face learning method and only 25.7% preferred blending of both the methods.

In modern era of technology there is a wide scope and resources for online teaching and learning and blending of traditional and online method of teaching learning in medical education is the need of the hour.

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