

Satisfaction of Medical & Dental Students about Online Teaching during Covid-19 Pandemic

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ABSTRACT

Background: During Pandemic whole world has gone through a very uncertain period and every field of life underwent a drastic change. Educational institutes were also facing the same challenge. Abruptly shifting to online education system was a sudden shift both for students and faculty. However, it had to happen and it provided us with an opportunity to explore future avenues through this challenge. This study had been planned to explore its one aspect. **Objective:** The study was done to find out the satisfaction of medical students for online pathology teaching during the COVID-19 Pandemic. **Study Design:** It was a cross sectional survey. **Settings:** Study was carried out in 2 medical and 1 dental colleges of Faisalabad Pakistan. **Duration:** March 2020 to June 2020. **Methods:** A questionnaire consisting of 11 questions was designed to collect the data. It was distributed to 3rd and 4th year MBBS and 2nd year BDS students. Data was then analyzed by SPSS version 24. **Results:** A total of 979 students participated in the study. Zoom was the most common software used by 661(68%) for online classes, followed by Google class room 318 (32%). 909 (93%) of the students had no previous online teaching experience. It was noticed that males were more comfortable with gadgets (P=0.014), satisfied with audiovisual quality (P=0.005) and their classes were carried out without technical errors (P=0.028). For the same reasons, they approved that computer mediated communication is an excellent medium for distance learning (P=0.001) and online teaching was a great learning opportunity for them (P=0.010). Females mostly disagree with exception of one point that their classes commenced timely (P=0.000). Private students were more comfortable interacting with teachers during online sessions (P=0.010) and satisfied with audiovisual quality (P=0.000). However, public students felt comfortable with the gadgets (P=0.000), and thought that computer mediated communication was an excellent medium for distance learning (p=0.046). **Conclusion:** Students of both private and public colleges agreed that the online teaching was satisfactory and an acceptable medium for distance learning. Moreover, there was good interaction of students with the teachers.

Keywords: Online teaching, Student satisfaction, e-learning satisfaction, medical education, COVID-19, Corona.

INTRODUCTION

Covid-19 pandemic is not over, but so far, it has changed the world from many perspectives. Since the outbreak of Novel corona virus in the Wuhan city of China in December 2019,¹ within few months, the whole world saw that how a tiny unseen organism can change the world altogether from every aspect.² Being the front liner, the medical community is the first and most

affected community.³ It has changed not only the practice of medicine but also the training and education of the graduates.^{4,5}

A number of teaching modalities are utilized to teach the undergraduate medical students which include lectures, practicals, skills, tutorials, e- learning, and assignments. The percentage of teaching modalities varies in different medical schools depending on the curriculum, whether

traditional, problem-based learning or competency based.^{4,6} In Pakistan most of the public and private medical colleges and universities follow the traditional curriculum, with teacher centered learning where most of the knowledge is imparted by face-to-face lectures and sessions. Most of the students are used to this method of learning.

As a result of Covid-19 pandemic the teaching institutes were closed⁷ and it was decided to adopt on line teaching. In Pakistan many of the medical colleges had to adopt online teaching for the first time therefore both the teachers and students had to face challenges. The use of the software, the availability of the internet facilities, and the assessment were the most important challenges faced.^{8,9}

Though many studies have been conducted even before corona to show usefulness and necessity of online or blended learning,^{10,11} but corona became a catalyst for sudden and abrupt change.^{4,12} Many studies have emphasized the pros of cons of online learning. Some of the advantages mentioned in the literature depicted that it is cheap, needs less manpower, efficient, and feasible to different learning styles with no need of spacious halls. While disadvantages faced by students included difficulty in understanding the abstract concepts, lack of social interaction, internet related problems, lack of interaction with the patients and assessment difficulties.¹³⁻¹⁵

With so varied literature reviews, it deemed necessary to understand our student's opinion regarding online education. So, the purpose of the current study is to find out the satisfaction of medical students for online pathology teaching during the COVID-19 Pandemic.

METHODS

This was descriptive cross-sectional study conducted in 2 medical and dental institutions, one from public university (Punjab Medical College, Faisalabad Medical University, PMC) and other from a private college (University Medical and Dental College, UMDC) from Faisalabad. The duration of the study was 4 months from March 2020- June 2020.

By using non-probability consecutive sampling technique, a total of 979 male and female medical students were included in the study.

This study was conducted in 2 medical and dental institutions, one from public university (Punjab Medical College, Faisalabad Medical University, PMC) and other from a private college (University Medical and Dental College, UMDC) from Faisalabad, who studied

pathology course in the curriculum. During the specified corona affected period of 4 months, the students took their online lecture, labs and tutorial sessions related to pathology. The session length was variable but generally it was 1 hour for lectures and 1.5 hours for practicals.

A questionnaire was designed having 11 questions consisting of Likert scale. The questionnaire was distributed online to all 1150 students of 3rd and 4th year MBBS, and 2nd year of BDS of both institutions. Out of these, 1035 consented to participate in the survey and filled the questionnaire. However, 67 surveys were incomplete, so they were excluded from the study.

A total of 979 valid complete surveys were included and the data received from survey were fed into the SPSS version 24 and thereby analyzed. Frequencies and percentages of descriptive variable were taken while mean, median and standard deviation of Likert scale questions were attained. The student responses were then compared with gender and sector (public, private) and p value of <0.05 was taken as significant.

RESULTS

A total of 979 students participated in the study. The mean age was 21.68 years with standard deviation of 0.046. There were 764 (78%) females, and 215 (22%) boys who participated in the survey. Out of these 331 (34%) were 3rd year MBBS students, 568 (58%) 4th year MBBS students, and 80 (8%) from 2nd year BDS. Most of the students were studying in the public medical college 674 (69%) while 305 (31%) were from private medical colleges.

Zoom 661 (68%) was the most common software used for online classes, followed by Google class room used by 318 (32%) of the students. Most of the students had no previous online teaching experience 909 (93%), and no formal training ever conducted for online classes (like workshops, hands on training etc.) 885 (90%). The Mean and Standard Deviation of responses for the online teaching satisfaction are given in table 1.

During comparison with male and females responses, it was noticed that males were more comfortable with gadgets (P=0.014), satisfied with audiovisual quality (P=0.005) and their classes were carried out without technical errors (P=0.028). For the same reasons, they approved that computer mediated communication is an excellent medium for distance learning (P=0.001) and online teaching was a great learning opportunity for them (P=0.010). While females mostly disagree with exception of one point that their classes commenced timely (P=0.000). (Table 2).

Table 1: Student Level of satisfaction on Likert scale with statistics

Q. No	Questions	Total (N)	SDA (1)	DA (2)	Neu (3)	AG (4)	SA (5)	Mean	SD
1	You feel comfortable interacting with teachers during online sessions	978	34	92	299	454	99	3.50	.922
2	You feel comfortable with gadgets while attending these online sessions	979	87	228	242	363	59	3.08	1.093
3	You are satisfied with audiovisual quality	979	76	256	265	346	36	3.01	1.036
4	Your online classroom are distraction free	979	83	280	224	337	55	3.00	1.093
5	Classes carried out without technical errors	979	118	338	260	237	26	2.71	1.045
6	Online classroom has improved the understanding of your subject/ topic	979	92	254	341	260	32	2.88	1.010
7	You experienced technical problems of internet or system compatibility during online sessions	979	29	68	136	480	266	3.91	.973
8	Classes commenced timely	979	17	72	172	567	151	3.78	.856
9	Teacher promptly responded to students	979	13	31	142	544	249	4.01	.804
10	Computer mediated communication is an excellent medium for distant learning	979	82	187	247	384	79	3.20	1.097
11	Online teaching was a great learning opportunity for you	979	90	245	340	264	40	2.92	1.022

SDA: Strongly Disagree, DA: Disagree, Neu: Neutral, AG: Agree, SAG: Strongly Agree, SD: Standard Deviation

Table 1

Interpretation of Mean:

- From 1 to 1.80 represents (strongly disagree).
- From 1.81 until 2.60 represents (do not agree).
- From 2.61 until 3.40 represents (true to some extent).
- From 3.41 until 4.20 represents (agree).
- From 4.21 until 5.00 represents (strongly agree).

Table 2: Comparison of online teaching between male and female students (n=979)

Q. No	Questions	Which group Agree More	Pearson Chi-square (P-value)
1	You feel comfortable interacting with teachers during online sessions	Male	0.190
2	You feel comfortable with gadgets while attending these online sessions	Male	0.014
3	You are satisfied with audiovisual quality	Male	0.005
4	Your online classroom are distraction free	Female	0.054
5	Classes carried out without technical errors	Male	0.028
6	Online classroom has improved the understanding of your subject/ topic	Male	0.050
7	You experienced technical problems of internet or system compatibility during online sessions	Female	0.488
8	Classes commenced timely	Female	0.000
9	Teacher promptly responded to students	Female	0.083
10	Computer mediated communication is an excellent medium for distant learning	Male	0.001
11	Online teaching was a great learning opportunity for you	Male	0.010

Comparison of public and private student's responses revealed that Private students were more comfortable interacting with teachers during online sessions (P=0.010), satisfied with audiovisual quality (P=0.000), their classes carried out without technical errors (P=0.000) and were commenced timely (P=0.000). While on the

other hand, public students felt comfortable with the gadgets (P=0.000), their teachers responded promptly (P=0.000) and they thought that computer mediated communication was an excellent medium for distance learning (p=0.046). (Table 3).

Table 3: Comparison of online teaching experience between the public and private colleges (n=979)

Q. No	Questions	Which group Agreed more	Pearson Chi-square (P-value)
1	You feel comfortable interacting with teachers during online sessions	Private	0.010
2	You feel comfortable with gadgets while attending these online sessions	Public	0.000
3	You are satisfied with audiovisual quality	Private	0.000
4	Your online classroom are distraction free	Private	0.881
5	Classes carried out without technical errors	Private	0.000
6	Online classroom has improved the understanding of your subject/topic	Private	0.256
7	You experienced technical problems of internet or system compatibility during online sessions	Public	0.803
8	Classes commenced timely	Private	0.000
9	Teacher promptly responded to students	Public	0.000
10	Computer mediated communication is an excellent medium for distant learning	Private	0.046
11	Online teaching was a great learning opportunity for you	Public	0.236

DISCUSSION

A total of 979 students participated in the study. Our study tried to investigate the student's opinion and experience of online medical education. 93% of the students in our study had no previous experience with online study and 90% had no previous training. Nevertheless, It was noticed that the students felt comfortable while interacting with teachers online and the teachers responded to their questions with a mean response of 3.50 (see table 1). The results were similar to the study carried by Eric W. Villanueva *et al* in which the students were comfortable in asking questions.¹⁶ It is contrary to the findings in a study carried out by Samiullah Dost *et al.*, in which the students didn't find online teaching to be interactive and not favorable for asking questions.¹⁷ This difference may be due to different learning platforms and the gadgets used and the home environment.¹⁸

In Pakistan, the Health Ministry reported first 2 confirmed cases of COVID-19 on 26th February 2020.¹⁹ By March, the effect of pandemic has taken the toll on all aspects of life and throughout the world, the universities, colleges and all educational institutions were closed.⁷ Now the dilemma started what to do for ongoing educational activities. Medical colleges also went through same situation. Both the students and teachers were shocked, since it was unprecedented. In the start, everyone thought that the situation would be temporary, but with alarming never ending spikes in the new cases and deaths, there was no other choice, but to think of alternatives. And the best option, at that time, was the online medical education.²⁰⁻²² In the medical colleges and

universities of Pakistan, the situation was no different from rest of the world. With the only option of online medical education, nearly all institutions opted and started it.^{9,23-25} Although the selection was situational, but it served the purpose. Most people felt that it could be a good option and catalyst for change in medical education.⁴ Among the students, there were mixed feelings, some really enjoyed it while other highlighted the cons of this methodology. Many studies conducted and tried to know the perspective of students and instructors.^{13,26-28} Online session requires hardware's like computers, laptops, mobile phones along with good network infrastructure. The students were not very satisfied with the internet connectivity, system compatibility or technical issues during the online sessions. The findings were consistent with study by Dutta *et al.* where the students were dissatisfied with the communication technology issue.²⁹ This problem seems to have been raised due to sudden shift in the communication technology and there was no infrastructure developed for online training as well as no training for the teaching staff. This problem would be taken care of in future as the pandemic persists and the only available system for teaching would be online teaching. The problem may have multiplied with the sudden explosion of so many internet users at the same time leading to internet problems. Also there are many students who live in the rural areas where the facilities of internet may not be available at all times.³⁰

The teachers promptly responded to students queries and questions and was an appropriate teaching method for distant learning because of the pandemic but it was not a good learning opportunity as compared to face to face

interaction, this was also similar to the study by Jagdish Hundekaria *et al* where the students did not enjoy online teaching as compared to face to face learning.³¹ A study conducted by AndreeaKuiet.al in Romania stated that the medical students were happy and wished to continue online teaching even after the pandemic is over.³¹ In another study carried out in Jeddah the students rated online teaching to be better or similar to face to face learning in campus.³²

There is a significant difference in feeling comfortable with using gadgets and satisfaction in audiovisual quality during online sessions between the females and males respectively. ($p= 0.014$ and $p=0.005$). This statistical difference can be easily explained that boys are more well versed with online gadgets and new technology³³ than females and their anxiety levels are also less while accepting innovations and newer techniques.³⁴ There is also a significant difference in accepting to learn through e-learning rather than face to face learning between the males and females ($p= 0.01$). Probably the same reason as stated above could be the answer for this response as stated by other studies also.³³⁻³⁵

There was also a significant difference in using computer-based learning to be an excellent medium of learning ($p = 0.046$) between the students of the public and private medical colleges. This may be due to the fact that the public sector medical colleges have more developed infra structure and budget to arrange the e-learning during the emergency situation developed by the pandemic. There is significant difference in satisfaction of audio-visual quality ($p<0.01$) and technical errors ($p = 0.01$) during the session between the students of public and private medical college. Again, the good infrastructure and better technical support could be the reason for this response. Another cause is evident from other comparison, in which it is noticed that public sector students were more comfortable with the gadgets used ($P=0.000$). Naturally, the more you know how to use is directly related with the outcome of better learning. Other reason for poor response from private students could be the reason that their facilitators/ teachers did not responded well with student complaints, issues and queries with P value of 0.000. (See table 3). Nevertheless, these differences are also evident from some other studies.^{9,36} Lastly, there was not significant difference in the experience of distraction. In reality, when the sessions are conducted at home, there could be many distractions from siblings, home chores and other environmental issues, so it is much obvious that both groups of public and private and girls and boys, have no statistical difference in this matter.

The pandemic of Corona is yet not over, but will the online medical education be continued even after Corona, that is the question, that will be answered very soon.

CONCLUSION

Students of both private and public colleges agreed that the online teaching was satisfactory and an acceptable medium for distance learning. Moreover, there was good interaction of students with the teachers.

LIMITATIONS

As the study was limited to preclinical students of only 2 medical and dental institutions with traditional based teaching, the results could not be generalized to clinical students or to other student-centered curriculum like PBL.

SUGGESTIONS / RECOMMENDATIONS

The future studies should include basic, clinical undergraduate students and even post graduate clinical residents, to know the exact satisfactions and problems faced by each cohort. More over the data should be gathered also from problem-based learning (PBL) and competency-based learning colleges, to know whether students would like to be involved with online medical education in the post-COVID era or not.

CONFLICT OF INTEREST / DISCLOSURE

None.

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