

Original Article

Evaluation of Undergraduate Medical Student's Perception on Online Learning During COVID-19 Pandemic

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Abstract

Background: Sudden outbreak of COVID-19 pandemic created panic, anxiety among the population worldwide. The education sector was among many which had taken a strong blow due to pandemic. In the wake of institute shut down, this was a challenging time for professional education which was combated through introduction of e-learning through online classes so as to ensure continuation of teaching-learning process for the medical students.

Aims and Objectives: The aim of the study was to rank the effectiveness and satisfaction of online classes compared to classroom conventional teaching among medical students and to evaluate student's overall perception regarding online learning.

Materials and Methods: This study has been designed to get opinion from 4th year MBBS medical students of Shaheed Monsur Ali Medical College, Dhaka regarding the perception on online learning during COVID -19 pandemic. In this survey, total 103 medical students of 4th year took part. This online survey was carried out from 2nd August, 2021 to 10th August, 2021, after completion of 12 weeks of online classes. A set of self designed questionnaire based on 5-point Likert scale was given to the students, to rank the effectiveness of online learning and their understanding with the satisfaction level on various parameters. The remaining items in the questionnaire comprised a mixture of question styles. All the students voluntarily participated in the survey.

Results: The study result shows that in 2 parameters, students rated the online-classes to be equally effective, the parameters which are contributing to offering convenience and meeting individual learning needs. In other 2 parameters, regarding building skills and knowledge, offering better understanding through recorded classes the students found it to be somewhat more effective. But regarding interaction level, contributing to effective communication and balancing of practical and theoretical knowledge, the students found it to be somewhat less effective. We could come to an interpretation that students were not much satisfied with this way of teaching but definitely it was the need of the hour. Most of the students had positive perception towards online classes.

Conclusion: We could conclude from our study that online education can supplement the process of present education system, but it cannot be a substitute for the established system of education.

Key words: Online learning, Covid-19 pandemic.

Introduction

The Corona virus Disease 2019 (COVID-19) outbreak which was originated and restricted only in China until February 2020 had suddenly altered into a global pandemic disease from 11th March, 2020.^{1,2} This pandemic has affected not only on physical health but also the lifestyle, business, stock market and even the education system worldwide. A large part of the world experienced a lock down that closed educational institutions affecting more than 70% of the world's student population. The nationwide lockdown

restrictions to control the spread of disease and 'flatten the curve' have impacted all aspects of life;^{3,4,5} inevitably, medical education has also been affected, with the halting of lectures, clinical placements and key examinations.^{6,7} In many countries, typical face-to-face classes had to be suspended to ensure the safety of students, lecturers, and patients. Such measures have resulted in a sudden shift in teaching methods towards online teaching. Online teaching has played a key role in medical education over recent years,^{8,9,10} demonstrated several benefits in enhancing student learning.¹¹

Online learning is a virtual learning system which integrates internet connection with teaching and learning process.¹² The interaction of teaching and learning activities can be carried out from the distance with the help of internet and online media.¹³ However, this method can be difficult for those teachers who are specialized in conventional teaching and are uncomfortable to use electronic gadgets. Also, students may not feel serious in online teaching as teachers have little control in online teaching.¹⁴ Online learning has become a solution for the continuity of teaching and learning process during Covid-19 pandemic. After 12 weeks of only online learning with no face-to-face learning, we decided to analyze medical students' perception of this teaching approach. This knowledge is necessary to identify student's requirement during online learning to make this learning system beneficial for the students.

Objectives

1. To evaluate student's perception regarding online learning.
2. To evaluate student's view on the effectiveness of online learning.
3. To evaluate student's satisfaction regarding online classes.

Materials and Methods

We have designed this study to get opinion from 4th year MBBS medical students of Shaheed Monsur Ali Medical College, Dhaka regarding the perception on online learning during COVID -19 pandemic. This cross sectional survey study was done on 103 medical students after 12 weeks of initiation of their online classes. This online survey was carried out from 2nd August, 2021 to 10th August, 2021. A set of self designed questionnaire based on 5-point Likert scale was given to the students, to rank the effectiveness of online learning and their understanding with the satisfaction level on various parameters. The remaining items in the questionnaire comprised a mixture of question styles. The questionnaire was accessed online. There were no exclusion criteria. Each student was allowed to complete the questionnaire once. All respondents were fully informed about the objectives of the study and agreed to voluntarily participate.

Statistical analysis

Statistical analysis's were carried out by using the Statistical Package for Social Sciences version 16.0 for Windows (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics were used for analysis of data. Frequency was expressed as percentage.

Result

In this survey, total 103 medical students of 4th year took part. Students were enquired whether they had attended any type of online classes before this pandemic. Out of 103 students, 95(92.23%) had not attended online classes earlier and only 8 students had already experienced. Among them 75.72% students used mobile, whereas 21.35% used laptop and 2.91% used computer for attending online classes. 66.01% students used wifi and 27.18% students used cellular data for attending the class. Only 6.79% students used both wifi and cellular data. 82.52% students had access to static internet and 27.18% of them had no internet facility at their own home. Majority of the students 93.2% felt that online classes should be continued during this pandemic. 88.34% of the respondents are satisfied from the online classes using ZOOM application (Table-1).

Table-I: Online class related characteristics of respondents (n = 103)

Variables	Number	Percentage (%)
Ever received online class before COVID 19		
No	95	92.23
Type of Gadget used for attending online class		
Mobile	78	75.72
Laptop	22	21.35
Computer	3	2.91
Type of internet connection		
Wifi	68	66.01
Cellular data	28	27.18
Combination of both	7	6.79
Access to sound/static internet		
Yes	85	82.52
No	18	17.47
Access to internet facility at own home		
yes	75	72.81
No	28	27.18
Should online learning be continued during this pandemic?		
yes	96	93.2
No	7	6.79
Student's Perceived Level of Satisfaction from Online Classes using ZOOM		
Strongly satisfied	70	67.96
Satisfied	21	20.38
Less satisfied	12	11.65

Tabl-II: shows the perception of students towards online classes. More than half of the students (54.36%) agreed that online learning system is easy to use. 72.81% students agreed that there is no need of specific preparation before attending online class. 22.32% of students disagreed that learning is the same in class and at home by using internet. 40.77% of students

strongly agreed that learners population does not affect learning in online classes. 73.77% of them agreed that self-discipline is necessary during online studies. 43.68% of students strongly agreed that online learning improves their technical skill in using gadgets. More than half of the students (62.13%) agreed that there is need of face to face contact with teachers to learn effectively. 78.64% of students disagreed that online learning is better than traditional learning. Among them 74.74% disagreed that there is low participation of students in online learning. 22.33% of students strongly agreed that recorded online class can be useful for future.

Table-II: Perception of students towards online classes (n = 103)

Statements	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)
Online learning system is easy to use	7 (6.79 %)	15 (14.56 %)	25 (24.27 %)	43 (41.74 %)	13 (12.62 %)
It is easy to manage study time effectively	7 (6.79 %)	9 (8.73 %)	14 (13.59 %)	55 (53.39 %)	18 (17.47 %)
No specific preparation is needed	3 (2.91 %)	12 (11.65 %)	13 (12.62 %)	60 (58.25 %)	15 (14.56 %)
Learning is the same in class and at home by using Internet	13 (12.62 %)	10 (9.7 %)	15 (14.56 %)	45 (43.68 %)	20 (19.41 %)
Learning on the internet outside of class is more motivating than a regular class	28 (27.18 %)	35 (33.98 %)	25 (24.27 %)	10 (9.7 %)	5 (4.85 %)
There is easy sharing ideas with others in online learning	7 (6.79 %)	17 (16.50 %)	14 (13.59 %)	50 (48.54 %)	15 (14.56 %)
Learners population does not affect learning in online classes	0	3 (2.91 %)	13 (12.62 %)	45 (43.68 %)	42 (40.77 %)
Self-discipline is necessary during online studies	0	7 (6.79 %)	20 (19.41 %)	65 (63.10 %)	11 (10.67 %)
I can ask my teacher questions and receive a quick response during online class	2 (1.94 %)	5 (4.85 %)	16 (15.53 %)	60 (58.25 %)	20 (19.41 %)
Online learning improves technical skill in using electronic gadget	0	0	20 (19.41 %)	38 (36.89 %)	45 (43.68 %)
Face-to-face contact with teacher is necessary to learn	0	9 (8.73 %)	30 (29.12 %)	40 (38.83 %)	24 (23.30 %)
It is comfortable communicating electronically during online classes	9 (8.73 %)	13 (12.62 %)	38 (36.89 %)	33 (32.03 %)	10 (9.7 %)
Online learning is better than traditional learning	35 (33.98 %)	46 (44.66 %)	15 (14.56 %)	7 (6.79 %)	0
There is low participation of students in online learning	32 (31.06 %)	45 (43.68 %)	20 (19.41 %)	6 (5.8 %)	0
Online class cost is low	25 (24.27 %)	45 (43.68 %)	20 (19.41 %)	8 (7.76 %)	5 (4.85 %)
Lack of concentration	28 (27.18 %)	38 (36.89 %)	22 (21.35 %)	10 (9.7 %)	5 (4.85 %)
Recorded online class can be useful for future	0	15 (14.56 %)	20 (19.41 %)	45 (43.68 %)	23 (22.33 %)
Learning environment is better in college than at home	5 (4.85 %)	10 (9.7 %)	25 (24.27 %)	48 (46.60 %)	15 (14.56 %)

Table-III: shows the rank of effectiveness regarding online learning. Out of 7 parameters, in 2 parameters, students rated the online-classes to be equally effective, the parameters which are contributing to offering convenience and meeting individual learning needs. In 2 parameters, regarding building skills and knowledge, offering better understanding through recorded classes the students found it to be somewhat more effective. In other 3 parameters, regarding interaction level, contributing to effective communication and balancing of practical and theoretical knowledge, the students found it to be somewhat less effective.

Table-III: Rank of effectiveness regarding online learning compared to regular classroom settings (n = 103)

Parameters	Much less effective (%)	Somewhat less effective (%)	Equally effective (%)	Somewhat more effective (%)	Much more effective (%)
Offering convenience	3	20	40	35	5
Meeting individual learning needs	5	15	55	20	8
Contributing to effective communication	10	38	25	23	7
Building skills and knowledge	3	14	32	42	13
Offering better understanding through recorded class	10	12	36	40	5
Interaction level	20	38	23	20	2
Balancing of practical and theoretical experience	15	40	25	18	5

Table-IV: shows the satisfaction level of students with regard to online classes. With regard to class material provided to students they were strongly satisfied. Regarding in balancing the practical and theoretical knowledge and in availability of e-resources the students were not much satisfied.

Table-IV: The satisfaction level of students with regard to online classes on five parameters (n = 103)

Parameters	Strongly dissatisfied (%)	Dissatisfied (%)	Neutral (%)	Satisfied (%)	Strongly Satisfied (%)
How helpful was the class material provided to you?	5 (4.85 %)	9 (8.73 %)	13 (12.62 %)	20 (19.41 %)	56 (54.36 %)
How satisfied are you with the balance of practical and theoretical knowledge provided by these classes?	10 (9.7 %)	35 (33.98 %)	25 (24.27 %)	20 (19.41 %)	13 (12.62 %)
Availability of e-resources	8 (7.76 %)	37 (35.92 %)	15 (14.56 %)	25 (24.27 %)	18 (17.47 %)

Figure-I: reveals the overall level of perception of students towards online classes. Most of the students (89.32%) had positive perception towards online classes.

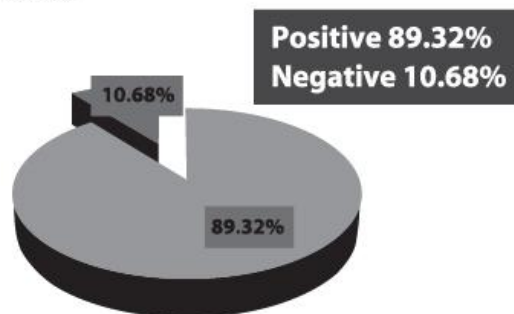


Figure-I: Overall perception of students regarding online learning

Discussion

Medicine being a challenging profession, needs a lot of commitment, dedication, acquisition of clinical skills, and self-directed learning attitude by the students.

COVID-19 outbreak created a panic, distress among student community, and uncertainty about the normalization of the situation. Online classes were started throughout the medical colleges keeping in mind, the students perception. The present study assessed the perception of 4th year medical students towards online classes during the period of COVID -19 pandemic. The study found that most of the students (89.32%) had positive perception towards online classes. In this study, majority of the students 93.2% felt that online classes should be continued during this pandemic. 78.64% of students disagreed that online learning is better than traditional learning. A study conducted among Saudi pharmacy students showed that 72% preferred traditional in-class lectures over the online classes.¹⁵ In this study, more than half of the students (62.13%) agreed that there is need of face to face contact with teachers to learn effectively. Similarly, a study conducted among Pakistani medical students showed that majority of the students (85%) preferred face to face teaching over online teaching.¹⁶ More than half of the students (61.16%) agreed that learning environment is better in college than at home. Though 40.77% of students strongly agreed that learners population does not affect learning in online classes. 43.68% of students strongly agreed that online learning improves their technical skill in using gadgets. Among them 74.74% students disagreed that there is low participation of students in online learning. 43.68% of students agreed that recorded online class can be useful for future. 58.25% of students agreed that they can ask questions to teacher and can get quick responses. These data suggest that students prefer online classes during this pandemic.

A study also shows that to some extent, online learning might not compete with aspects of other learning, such as interactive knowledge building between teacher and students.¹⁷ Such limitations could create opportunities for students to obtain self-learning methods through information technology. The results of this study were also similar to our survey which showed that the level of interaction of students with the faculty is less as compared to classroom teaching. The highly personalized content for learning can be improved by web-based learning. The students online expertise is possibly increased by diversity of skills and knowledge.¹⁸

The effectiveness of online learning, though less effective as compared to a normal classroom teaching and it varied for various categories of students. Our study shows that students rated the online-classes to

be equally effective, the parameters which are contributing to offering convenience and meeting individual learning needs. In this study, regarding building skills and knowledge, offering better understanding through recorded classes the students found it to be somewhat more effective. Regarding interaction level, contributing to effective communication and balancing of practical and theoretical knowledge, the students found it to be somewhat less effective. To avoid the potential limitation of online learning in undergraduate medical education, it should be worthwhile to combine the advantages of online teachings and classroom teachings called blended learning.^{19,20} We could conclude from our study that e-education can supplement the process of education, but it cannot be a substitute for the established system of education.

Conclusion

Advancement in biotechnology and internet technology has brought about a revolution in the field of medical sciences with the innovation of trinity of e-learning, e-teaching, and e-research constituting the superstructure of e-education. This will facilitate adaptive and collaborative learning by the learners and the teachers. It will lend support to the old system by extending the frontiers of knowledge and research. It will become effective means of communication provided it is supported by the state of art infrastructure and blended learning technology. Hence, blended learning should be started as soon as situation becomes normalized as it would lead to more development of professional skills and grooming of professional career.

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