A Cross-Sectional Study to assess perception towards Online Classes during COVID-19 pandemic among Students of College/School in Mumbai

Dr. Vinay Kumar[1], Dr. Vandana Kashyap[2], Dr. Smita Chavhan[3], Dr. Balkrishna Adsul[4]

[1,2]Junior Resident, [3]Associate Professor, [4]Professor & Head
HBTMC & DR R N Cooper Hospital

INTRODUCTION

The unprecedented health crisis of COVID-19 has affected almost every aspect of life. It was recognized for the first time in December 2019 in Wuhan, China, and spread rapidly all over the world to become an economic and humanitarian crisis [1]. The World Health Organization (WHO) declared COVID-19 as a pandemic on 11 March 2020. Due to this outbreak, the education system is beholding an extraordinary double shock: temporary school closures in more than 180 countries since March 2020, in order to prevent the spread of the virus and to disclose the fragility of education systems worldwide. This interruption to education and the expected reduction in global growth due to the economic recession have a far-reaching impact on the most disadvantaged students who have faced vulnerable socioeconomic family conditions [2]. The shutdown of schools has not only ceased learning new things but also made students forget what they had learned earlier. The prolonged shutdown transformed conventional classrooms into online classes due to the contagious nature of the disease. The concept of e-learning had appeared with the development of the Internet since the 1990s. Online learning, remote learning, distant learning, e-learning, internet-based learning, and computer-assisted learning are terms that are interchangeably used and not new for us. During this pandemic, these are the only sources that were utilized in the ongoing learning processes. Teaching and evaluating students through information technology helped reduce the learning gap that emerged due to the lockdown [3]. Students can now get subject knowledge, clear their doubts with mentors' assistance, quickly share study material, receive rapid feedback, be more flexible, discuss with their comrades, and observe their academic progress in online classes. Before the pandemic, however, e-learning never received attention, as its effective learning outcome deserves (at least as much as conventional education did); however, the outbreak of COVID-19 encouraged virtual learning as a solution to overcome the existing learning gap in the world [4]. During the pandemic, educational institutions and teachers are exploring and approaching numerous teaching software for students to facilitate online learning [5]. This study aims to assess the perception towards Online Classes during the COVID-19 pandemic among Students of College/Schools in Mumbai

Methods:

A descriptive cross-sectional study was conducted in the Covid vaccination Centre of a tertiary care hospital in Mumbai. All the students who came for COVID-19 vaccination were taken up in the study from 1st January to 1st March 2022. The objectives of the study were briefed to respondents. Written informed consent was taken from the students and additional verbal consent was taken from the students' parents for those students who were below 18 years of age. The data was used only for this study purpose and confidentiality of the data has been maintained. All students studying in school/ college and wiliness to participate in the study were included. Similarly, those who were not willing to participate and those who did not fill questionnaire completely until the study period were excluded from the study. A universal sampling method was used. A total of 395 questionnaires were completely filled and included in the study.Collected data was cross-checked every day to ensure if all the questions in the case record form have been filled.All the collected data was entered into Microsoft excel and exported to SPSS version 22 for analysis. Simple frequency tables, cross tables and mean tables have been used to analyze data related to the study.Characteristics of the sample was categorized using mean and standard deviation.

Results:

Data of 395 students was analysed . 72.4% students were less than 18 years of age and 27.5 % students were above 18 years of age . 48.3 % were males and 51.6 % were females . More than 70 % students had education of less than 12th standard approx. whereas 30 % had education more than 12th standard.

Table -1: Distribution of socio-demographic characteristics of study

Age	**N (%)**
≤ 18 years	286 (72.40 %)
>18 years	109 (27.59 %)
Sex	
Male	191 (48.35%)
Female	204 (51.64%)
Vaccine taken	
Covishield	113 (28.60%)
Covaxin	282 (71.39%)

Education	
≤ 12th class	278 (70.37 %)
>12th class	117 (29.39 %)

Regarding online classes, nearly one-third of the respondents were not enjoying the class as regular lecture classes. 38.7% of the students felt online classes were worse than a regular classes. 26.3% of the students felt online classes were similar to regular classes and 21% of the students felt online classes are better than regular classes and equally competent as regular classes (Table 2).

Table – 2: Student's experience during online classes

General characteristics	**N (%)**
Better than regular class	83(21%)
Similar to regular class	104 (26.3%)
Worse than regular class	153 (38.73 %)
Can't say	50 (12.65 %)
Equally competent as regular class	4 (1.01 %)
Not equally competent	1 (0.25 %)

44.3% of the students had taken online classes for the 1st time during the COVID-19 pandemic. The findings revealed that nearly half of the respondents had taken less than and equal to 4 hours of online classes. Mobile phones were preferred by the majority of the students due to their convenience and easy accessibility. Wi-Fi connection for studying was preferred due to more network stability. (Table 3)

Table – 3: Status of online classes.

General characteristics	**N (%)**
Any prior online classes taken	
Yes	175 (44.3%)
No	220 (55.7 %)
Gadgets used for online classes	
Laptop	145 (36.7 %)
Mobile	304 (77 %)
Tablet/i-pad	46 (11.6 %)
Destop	18 (4.6 %)
Internet Service used	
Wifi	208 (52.7 %)
Mobile data	187 (47.3 %)
Hours of online classes taken per day	
≤ 4 hours	212 (53.67 %)
>4 hours	183 (46.32 %)

Internet disturbance was the most common issue faced by the students along with electricity problems and external disturbances (Table – 4). The health issues due to online classes were eye strain, headache, backache/neck pain, and irritability (Table – 5). To minimize the issues, students recommended improvements like reduction in the number of online classes and increasing more of offline classes, having more face-to-face interaction in online classes, reduction in time for the class and more audio- visual lectures to make it fascinating (Table 6) . Nearly half (53%) of the students felt economic burden during online classes (Table 7)

Table – 4: Issues during online classes

Internet problem	315 (79.7 %)
Electricity problem	88 (22.3%)
External disturbance	291 (73.4 %)

Table – 5: Health related issues due to online classes

Headache	192 (48.6 %)
Eye strain	224 (56.70%)
Hearing problems	36 (9.11 %)
Backache/neck pain	121 (30.63 %)
Irritability	72 (18.22%)
Exhaustion after prolonged sitting	113 (28.6 %)
Nothing	52 (13.16 %)

Table – 6 Student's Recommendation for improvement in online classes

Reduction in number of classes	111 (28.1%)
Reduction in time for class	138 (34.9%)

Focus in two way interaction(face to face interaction)	165 (41.8%)
Provide audio – visual teaching	104 (26.3%)
Offline classes	26 (6.58%)

Table - 7 : Economic burden of the family

Was Online teaching an economic burden to your family?	**N(%)**
Yes	107 (27.1%)
No	243 (61.5%)
Can't say	45 (11.4 %)

Our study indicates that out of 395 students, 38.73 % students showed negative perception about e-learning, whereas 21% students felt online classes has better impact on their learning. Majority of the students preferred face to face teaching over e-teaching. The key outcome of the result shows that the students are not yet ready for e-learning.

Discussion:

Mobile has become one of the most popular devices among students for e-learning as compared to laptops and tablets (6). A research conducted in Spain revealed that students chose mobile for their learning because student-teacher interaction through mobile was much easier as compared to other devices (7). In India , a study was conducted on university it was found that 66% students use mobile devices for e-learning (8) , which is very similar to our study that shows 76% students prefer mobile devices. Another very common reason for this is that learning can take place anytime and anywhere as discussed in the article by Angela Murphy and her co-authors (9). The results of this study were slightly different from ours as mobile was the second choice for e-learning after laptop, whereas, in our case laptop's preference came at number two after mobile.Post Covid-19 outbreak, students in India were required to move to online learning, however, they have found it less appealing due to its limitations with respect to practical aspects of learning in the lab/clinical environment. This is consistent with the students' behaviour in many other countries like China, Malaysia, Singapore etc (10,11,12).

When other literature was searched regarding e-learning under normal circumstances, before Covid-19, we came across mixed outcomes. Some suggested positive and others negative inclination towards e-learning.Singh A, Min AK did a study on the efficacy of conducting digital lectures on gross anatomy. The study investigated student's satisfaction level towards e-learning and it was found that majority of the students accepted digital learning (13). Raymond Selorm also revealed in his paper that in comparison to face to face learning students were satisfied with e-learning (14). However, there also exists literature that reports students preferring face to face teaching over online teaching like in our study wherein student's preference was 41.8% (15, 16). Another study conducted in India by Sunita and Colleagues revealed that e-teaching increased students' satisfaction level towards learning (19). Our study results also highlighted that students are not ready to adopt e-learning. They considered e-learning as a better teaching tool to prefer it for future learning . One of the studies also pointed out that students were misusing the user identity during online teaching (17,18). It was noted that online teaching was not secure as incivility was considered as a major issue. In our study, majority of students had disturbance during online classes as Internet disturbance, electricity problem and external disturbances. The finding is in consistent with the study by Subedi S, where more than half of the students 63.2% got disturbed for their online class because of electricity problem, and 63.6% because of internet problem (8). An alarming response that we received from this study was student's response to headache and eye strain during online classes which was 25% directing towards lockdown myopia. The reliability of our data is entirely based upon the correct reporting of the participants. Furthermore, an in-depth qualitative study is necessary.

connection, less group collaboration, and technical difficulties often negatively affect online learning.

Though online learning is seen as effective during the COVID-19 pandemic, students from NAIHS prefer traditional face-to-face learning. Therefore, faculties and academic institutions are encouraged to design more collaborative undergraduate courses to enhance learner-learner interaction and learner-teacher interaction. All these activities are essential to develop and maintain a positive attitude among students towards their online learning; thus, teaching-learning becomes more effective.

CONCLUSIONS

The study concludes that students from different colleges /schools have a positive as well as negative attitude towards online classes. Poor internet connection, less group collaboration and technical difficulties often negatively affect online learning. Though online learning was seen as effective during the COVID-19 pandemic, most of the students prefer traditional face-to-face learning. Therefore, faculties and academic institutions are encouraged to design more collaborative undergraduate courses to enhance learner-learner interaction and learner-teacher interaction. All these activities are essential to develop and maintain a positive attitude among students towards their learning; thus, teaching-learning will become more effective.

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