

Original Research Article

Undergraduate teaching in COVID-19 pandemic: an experience at tertiary care centre

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ABSTRACT

Background: COVID-19 outbreak has taught us to opt for technologies, which have not been used before. There is lot of information available on the internet for learning, but undergraduate students of medicine need continuous guidance. The best platform would be live online teaching which includes student centred learning and observing appropriate COVID-19 social distancing. Aims and objectives of the study was to highlight various positive and negative impacts of COVID-19 on medical education.

Methods: The students included in the study are from second MBBS with total number of 200. Time table was planned and everyday two live lectures across their subjects of study were taken. The classes were carried out using the Cisco Webex software. The students were able to ask questions and cleared doubts during and at the end of each class. The feedback of the session was collected by structured format and observations recorded.

Results: In the present study the advantages of online classes based on student observations were: learning at ease, flexible environment, no delay in classes, and no peer distraction. In the present study the disadvantages were: eyes are getting strained, network issues, concentrate for long time, disturbances at home and no practical knowledge. In the present study, improvements and suggestions offered were to provide recorded videos or power point presentation, case based discussions, assignments and revision classes to be increased.

Conclusions: The present study had several limitations. The study was conducted during the first phase of the COVID-19 pandemic at a Government Institute where most students belong to middle class. Despite these limitations, we believe the study provides relevant insights into the challenges facing online medical education in a time of healthcare crisis.

Keywords: COVID-19 pandemic, Online medical teaching, Positive impact

INTRODUCTION

The impact of pandemic COVID-19 is observed in every sector around the world and India. The lock down created very bad effect on the students' life. Around 32 crore learners were affected in our country. This outbreak has taught us to opt for platforms with technologies, which have not been used before. There is shift of focus from the traditional in-house lectures and bed side teachings to the technology driven online classes. Lot of information is available on the internet for learning, but live online teaching by teachers, guides the student learning in proper

context of their curriculum. Online teaching has the potential to go beyond geographical borders, is supple and learner centered. Live online classes through video conferencing seem to be an apt solution for continuing the teaching of undergraduates in medicine, while observing appropriate COVID-19 social distancing measures.¹⁻³

To be a successful distance learner, the student should be self-disciplined and able to do their work well on their own, students develop self-directed learning skills. The recently introduced competency-based curriculum has emphasis on e-learning and is an essential tool for self-

directed learning. For successful online learning, good quality online teaching practices should be adopted. The aim of online teaching should ensure alignment of curriculum and objectives, interaction between teacher and student and development of skills, active learning, self-directed learning in students and inbuilt component of feedback. Online assessments, both formative and summative should aim at involvement of students. The faculty has to be trained as online teaching is the need of the hour.⁴⁻⁶

This study was conducted to find out the student perception and faculty's perception about these live online classes started during the pandemic of COVID-19.

Aims and objectives were to highlight various positive impact of COVID-19 on medical education, perspective of students and to enlist negative impacts of COVID-19 and suggestions for continuing education during the pandemic situation.

METHODS

It is an observational study from 8-5-20 to 8-12-20, done at Andhra Medical College, Visakhapatnam, Andhra Pradesh. The students included in the study are from second MBBS, 200 in number. The timetable was planned and everyday two live lectures across their subjects of study were taken.

The institute faculty were sensitized for using the software and online teaching, prior to launch of these classes. This was monitored centrally and carried out using the Cisco Webex software, which was provided by the principal/dean of our institute. This software allowed the students to join the meeting using a login id and password and then the teachers took lectures by explaining their topics via power point presentations.

The students were able to ask questions and cleared doubts during and at the end of each class. The topic was revised at the end of class by asking multiple choice questions which was answered in the text box followed by feedback at the end of teaching session. All precautions pertaining to the COVID-19 pandemic were ensured, while carrying out these classes.

The total number of classes conducted in subjects of pathology, microbiology, pharmacology and forensic medicine are listed in the table below.

Self-structured feedback format was made by the department and the feedback of the sessions was collected in the following format and observations recorded.

The feedback forms from the students were analysed and the opinion of students were recorded as percentage using statistical package for the social sciences (SPSS) version 24.

Table 1: Total number of classes conducted.

Year 2020 (2 nd MBBS, 4th semester)	
Total number of classes	Pathology-12
	Microbiology-11
	Pharmacology-17
	Forensic medicine-6
Total number of classes conducted	Pathology-11, missed class on 08 May
	Microbiology-5, classes started from 04 June
	Pharmacology-16, missed class on 11 May
	Forensic medicine-6
No of students attended	180-185

Table 2: Feedback forms from the students.

Name	Roll No	
Sl. no.	Questions	Feed back
1	Audio quality	
2	Video quality	
3	Problems faced by internet	
4	Advantages of online classes	
5	Disadvantages of online classes	
6	Improvements and suggestions	

RESULTS

The total number of students participated in the study were 185. The feedback forms were analysed and the data recorded under the following headings.

Audio quality and video quality

All the students felt the audio quality and video quality of power point presentation was good with clarity of speech and visuals (Table 3).

Advantages of online classes were: no delay in classes, flexible environment, limited hours of lectures, no peer distraction, no strict monitoring by instructor (Table 4).

Disadvantages of online classes were: eyes are getting strained, network issues, unable to read/concentrate for a long time on Power point presentation, less intense than direct classes, lack of live interaction, feeling monotonous, disturbances at home and no practical knowledge (Table 5). Improvements and suggestions offered were: It would be more helpful to us if recorded videos or PPT are shared, case based discussions should be more. Need of more assignments to keep engaged. Number of revision classes to be increased.

Table 3: Analysis of feedback forms.

No of students participated	Feedback	N=185	Percentage
Audio quality	Good	185	100
Video quality	Good	185	100
Problems faced by internet	Little bit interruption for 5 to 10 min	46	24.86

Table 4: Advantages of online classes.

Advantages of online classes	Feed back	N=185	Percentage
1	Learning at ease	166	90
2	Flexible environment	175	95
3	No need to travel	175	95
4	Helping to complete the syllabus in time	162	88
5	Easy completion of syllabus	166	90
6	No delay in classes	185	100
7	Useful in COVID 19 pandemic	185	100
8	Easy to listen from anywhere	185	100
9	No peer distraction	185	100
10	No strict instructor	55	30
11	Limited number of hours	166	90
12	Easy to take notes by screen shots	46	24.86
13	Everyone will get the same view of the classes unlike offline class where first benchers will get best view	148	80

Table 5: Disadvantages of online classes.

Disadvantages of online classes	Feed back	N=185	Percentage
1	Eyes are getting strained	175	95
2	Network issues	111	60
3	Unable to read/concentrate for a long time on PPT	129	70
4	Less intense than direct classes	92	50
5	No disadvantage	125	68
6	Lack of live interaction	111	60
7	Teaching speed more	96	52
8	No proper attendance	129	70
9	Feel monotonous	129	70
10	Disturbances at home	148	80
11	No practical knowledge	148	80

DISCUSSION

Online education during COVID-19 has become suddenly an academic norm. This rapid transition has caused lot of frustration in the teachers and students. The Institutes had to balance between providing services to the patients and ensure student learning.⁷

The present generations are social-media savvy; social media is their primary source of communication which explains the acceptance of online teaching and learning. Previous studies documented in literature reported that hybrid learning (combining online with face-to-face instruction) is becoming more accepted among academic communities.⁸ The similar pattern was observed in the

present study. The effectiveness of hybrid learning depends on several factors, like adequate faculty training and institutional support which was possible in our institute.

Despite these challenges, the COVID-19 pandemic had a positive impact on the students' reception of online education. In a recent survey of more than 400 college students, 67% of the medical students report a positive impact of the pandemic on online learning.⁹

In the study by Rajab et al, 66.9% of medical students reported a positive view of online learning.¹⁰ Most respondents (76%) intended to integrate online expertise gained during the COVID-19 pandemic into their

teaching/learning strategies. Students believed that the quality of education has not suffered in the shift to an online environment. Twenty five percent felt that the first few online sessions were problematic. Faculty and students had to adjust to the online environment. Other students were unhappy with the online learning experience; they wanted to return to conventional face-to-face education right after the pandemic (25%).

Mukhtar et al in their study opined that the students felt that online learning modalities had encouraged student-centeredness and self-directed learning asynchronously at any time in a day.¹¹ The limitations were unable to learn practicals and clinical work. The students also reported limited attention span and resource intensive nature of online learning as a limitation. The recommendations made by the student were reduction in cognitive load and increased interactivities during online teaching. Case based learning and more revision classes were preferred.

In the present study the advantages of online classes were: learning at ease (90%), flexible environment (95%), no delay in classes (100%), easy to listen from anywhere (100%), no peer distraction (100%), no strict instructor (30%), everyone will get the same view of the classes unlike offline class where first benchers will get best view (80%).

In the present study the disadvantages were: Eyes are getting strained as we have to see continuously look into the phone for several hours (95%), network issues (60%), unable to read/concentrate for a long time in pdf or ppt (70%), less intense than direct classes (50%), no disadvantage (68%), lack of live interaction (60%), teaching speed more (52%), no proper attendance (70%), feeling monotonous (70%), disturbances at home (80%), and no practical knowledge (80%).

In the present study, improvements and suggestions offered were: it would be more helpful if recorded videos or ppt are shared. Case based discussions, assignments and revision classes to be increased.

The present study had several limitations. The study was conducted during the first phase of the COVID-19 pandemic at a Government Institute where most students belong to middle class. The study did not gather information about the needs of students with financial and technical disabilities during the transition to online courses. Despite these limitations, we believe the study provides relevant insights into the challenges facing online medical education in a time of healthcare crisis.

CONCLUSION

Our study showed a positive impact of the COVID-19 pandemic on online medical education. Challenges

brought about by the pandemic included online experience, pandemic-related anxiety or stress, time management, and technophobia. Despite these challenges we could attain confidence in conducting online classes. Pandemics have historically created challenges, meeting these challenges is the first step in converting them into opportunities.

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