

Original Article

Evaluating MBBS Students Perception on Transition from Classroom to Online Teaching during COVID-19 Pandemic — A Cross Sectional Survey

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Background : With the rapid expansion of technology, Online teaching has emerged as a substitute mode of education and is rapidly becoming one of the most effective ways to impart education especially during this pandemic. This study was done to evaluate the perception of MBBS students on the transition from classroom to online teaching during COVID-19 pandemic.

Methods and Results : The present study is a cross-sectional, exploratory survey-based design. MBBS students (first year to final year) from all the medical colleges in Visakhapatnam were included in the study. The designed questionnaire was validated by a committee of faculties of the Department of Pharmacology and was sent through WhatsApp to all the participants. A duration of 1.5-2 months was set to collect the response, review and analyze. The results of our study indicated that maximum number of students (62%) felt it was a wise decision to opt for Online classes during COVID-19 pandemic to ensure the continuity of the curriculum. After analyzing the content, we found out that though there were benefits like flexibility & convenience (74.4%), going multiple times through recorded videos, improvement in technical advantage (50.1%) and cognitive skills (35.3%), online classes also had their fair share of drawbacks like technical difficulties (81.7%), lack of peer interaction (50.7%) and continuous Online classes.

Conclusion : Online teaching was the only and effective alternative available to the traditional method of teaching to avoid any lapses in the MBBS curriculum during COVID-19 pandemic. However, online teaching can never be a replacement in the Medical Education System where the courses are mostly in favour of practical expertise. This study is done to identify the hindrances in the course of Online learning and corrective measures to overcome them and also to be prepared to face such a situation with ease anytime in the future.

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Key words : Pandemic, Medical students, Online teaching, Feedback.

Online teaching also known as e-learning is the usage of internet for educational purposes. The practice of Online learning started before 150 years¹. In the mid 19th century “correspondence courses” was the name given to Distance Education². The first Online course was given in the year 1981 and in the ensuing year, the Western Behaviour Sciences Institute prepared the first Online program³. The use of Online learning has been extensively approved off in higher education and is quite popular in recent decades⁴. The success of Online classes demands a huge responsibility on the part of students as well as on the faculty. The nature and characteristics of students determine the outcome of Online classes⁵. The

Editor's Comment :

- The COVID pandemic made us realise that being physically present in the classroom is no longer the only option for learning and the online teaching prototype gave structure to preserve students' learning throughout challenging moments. For e-learning to be implemented successfully, attention must be paid to the hurdles to digital learning.

responsibility of the faculty should be to integrate multiple forms of media like Video, Audio, Text and Animation in their lectures so that students with different preferences can find the content more engaging^{6,7}.

Educational institutions all over the World have been shut down owing to the COVID-19 pandemic, eventually forcing them to suspend the classes. So, most of them have decided to continue with their classes using Online mode of instruction. Even though it is a very convenient mode of education considering the present situation, it may be quite challenging as the whole idea is novel not only to the faculty but also for the

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students. Converting a successful classroom course to an online course is not a simple process and many faculties have stepped in not knowing the difficulties involved in it because it is the need of the hour. Likewise, students will have problems with logging on, technical difficulties, network problem, difficulty in submitting the assignments in the allotted time, etc, and the faculty must be prepared well in advance to rectify them. There are doubts in the minds of the many faculty about how smooth the transition has been from classroom to online teaching and whether the students are able to cope up with the sudden change that has happened due to the COVID pandemic. This has motivated us to conduct this study to deal with the situation accordingly and find out better ways in which it can be handled.

This study is conducted by taking feedback from MBBS students to evaluate their perception on the transition from classroom to Online teaching and also to compare the effectiveness of traditional and modern teaching methods. This study is also aimed at finding out problems the students might be facing, so as to overcome them if a similar situation arises in the future. In doing so it is expected that this can inculcate an effective discussion between the management and the faculty to provide the best opportunities for the students so that they can be benefited the most from the ongoing Online classes. The administration should look into matters of concern like budget, faculty workload, number of students in Online classes, scheduling of Online classes, good network connection for uninterrupted classes, etc, without which Online teaching and learning will fail⁸.

AIMS, OBJECTIVES AND HYPOTHESIS

To evaluate the perception of MBBS students on the transition of classroom to Online teaching during COVID-19 pandemic

Objectives :

- To evaluate MBBS students perception on transition of classroom teaching to Online teaching.
- To compare the effectiveness of traditional and modern teaching methods.
- To assess the pitfalls in the ongoing Online classes so as to overcome and improvise them if a similar situation arises in future

MATERIALS AND METHODS

Study Design, Population and Method :

The present study was a cross-sectional, exploratory survey-based design. The eligible participants included were 1st year to final year MBBS

students from all the four medical colleges of Visakhapatnam. The questionnaire was designed and validated by a committee of faculties of the Department of Pharmacology and through peer review. The pre-validated questionnaire comprised of questions related to the Socio-demographic status, experience of Online classes, traditional and modern methods of teaching, benefits and drawbacks of online teaching and Online assessment patterns were sent through WhatsApp. Duration of 1.5-2 months was set to collect the responses.

Sample Size :

By keeping a confidence level of 95% and error of 5% with total population of 2500, though the sample size needed was N=330, we ended up collecting responses from N=744 participants.

Statistical Analysis :

Collected data was imported to SPSS from the generated excel sheet of Google form. Frequency analysis was run. Chi square test was used to analyse and test the relationships between categorical variables.

RESULTS

The results of our study include data on demographic variables, feedback regarding Online classes, Online assessment, its benefits and drawbacks.

The mean age of participants was 20.46 with $SD \pm 1.323$. The range of age group was between 17-24 years and majority of the participants were females. Data was collected from four medical colleges, consisting of one government college from which 31.5% responded, remaining 68.5% were from private college. Among different phases of MBBS curriculum, phase 1 students responded more as compared to other phases as we believe first year students are more curious to gain knowledge of novel things and provide their valuable feedback as they are new in the college (Fig 1).

Students' feedback on Online classes showed both positive and negative responses. Around 62% students agreed that conducting Online classes during this pandemic was a wise decision as it helped in covering the syllabus with no break in the continuity of the curriculum. On the contrary, 75.2 % felt that Offline classes are better because this mode makes them more confident and holds their attention for longer time. Majority (80.8%) students believed that they were having continuous Online classes which made them hard to concentrate and so 58.6% students wanted gap between the classes and 41.4% were content with current schedule. Importance for clearing doubts was

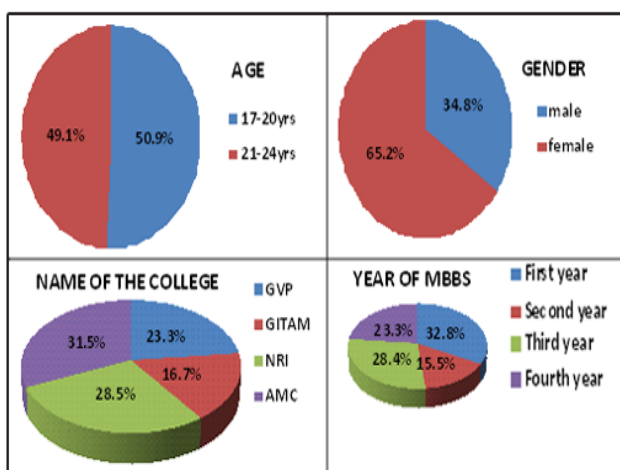


Fig 1 — Demographic distribution of students (in percentage)

not being given in Online classes, so 44.5% said that one or two classes should be allotted per week for it. Higher percentage (72.6%) used mobile phone as a platform for attending Online classes as compared to other devices because it is easy to access, cheaper and portable (Table 1).

48.8% students agreed that conducting MCQs and short answers as an assessment pattern makes them more confident for exams because it is easy to score marks, less tiring, time saving and helps them to prepare for postgraduate entrance. But 66.9% responded that Online assessment is not the best way to evaluate students for the reason that there is a high scope of malpractice (Table 2).

The results of our study showed that 74.4% preferred online classes because they opined that it has flexible plan and is convenient as they can visualize the lecture at any time, any place and provides faster virtual communication. Additional benefits were technical advantage and improved cognitive skills (Fig 2).

The major obstacle for Online learning was technical difficulty (81.7%) which was even more for students residing in rural areas, concluding that if India needs to show progress towards Online education it should concentrate on improving its digital literacy and networking facilities. Lack of face to face session was also the major concern among students (71.5%) (Fig 3).

DISCUSSION

The Corona Virus pandemic has generated changes in the education – knowledge process in advanced educational institutes and has manipulated the communication involving teachers and students. The first Online course was given in the year 1981 and in the ensuing year, the Western Behaviour Sciences

	Frequency	Percent
Is conducting online classes a wise decision?		
Yes	461	62.0
No	117	15.7
Not sure	166	22.3
Are online classes interesting?		
Yes	159	21.4
No	396	53.2
Not sure	189	25.4
Are online classes better than offline classes?		
Yes	106	14.3
No	559	75.2
Not sure	78	10.5
Which teaching mode makes you confident?		
Face to face classes	576	77.4
Live online classes	76	10.2
Recorded videos/classes	92	12.4
Which teaching method holds your attention for longer time?		
Face to face classes	584	78.5
Live online classes	71	9.5
Recorded videos/classes	89	12.0
Are you having continuous online classes?		
Yes	601	80.8
No	143	19.2
Is it difficult to concentrate because of continuous classes?		
Yes	488	65.6
No	154	20.8
Not sure	101	13.6
Which class schedule do you prefer for online classes?		
Happy with the ongoing schedule	308	41.4
15 min gap between each class	211	28.4
30 min gap between each class	60	8.1
Division of classes in the morning and afternoon sessions	110	14.8
Any other	55	7.3
Which device do you prefer to attend online classes?		
Mobile	577	77.6
Laptop	97	13.0
Tab, Smart TV	70	9.4
How many times do you go through recorded videos?		
Once	183	24.6
Twice	113	15.2
> Twice	98	13.2
None	350	47.0
Is there a need to allot one/two online classes per week for clearing doubts?		
Yes	331	44.5
No	129	17.4
Not sure	219	29.4
Already being implemented	65	8.7
Do you think taking feedback is necessary for a better outcome?		
Yes	657	88.3
No	23	3.1
Not sure	64	8.6

Institute prepared the first Online program³. The use of Online learning has been extensively approved off in higher education and is quite popular in recent decades⁴. The nature and characteristics of students determine the outcome of Online classes⁵. The objective of this research was to evaluate the perception of MBBS students on the transition from

Table 2 — Feedback on online assessment (N=744)		
	Frequency	Percent
What online teaching/assessment modes are being followed by your college?		
Live online classes	351	47.2
Live online classes, online assessment	144	19.4
Live online classes, online assessment, seminar	104	14.0
Live online classes, Recorded videos, online assessment	46	6.2
Live online classes, seminar	37	5.0
Anyother	37	5.0
Live online classes, Recorded videos, online assessment, seminar	9	1.2
Live online classes, recorded videos	9	1.2
Recorded videos, online assessment	7	0.8
Which assessment pattern makes you confident for exams?		
MCQs	262	35.2
MCQs, Short answers	101	13.6
Short answers, Long answers	93	12.5
Not being conducted	83	11.1
Short answers	76	10.2
Long answers	30	4.0
MCQs, Long answers	14	1.9
MCQs, Short answers, Long answers	85	11.5
Are you being motivated enough with online assessment?		
Yes	153	20.6
No	309	41.5
Partially motivated	249	33.5
Not answered	33	4.4
Online assessment is not the best way to assess a student.		
Agree	498	66.9
Disagree	78	10.5
Not sure	154	20.7
Not answered	14	1.9

classroom to Online teaching during COVID-19 pandemic.

The result of our study showed that most of the participants were females, which was in correspondence with a previous study⁹. In the same study, 82% participants found classroom education more useful than Online classes as it was easier to grasp the topic contents in Classroom Education System. Similarly, our study also found three fourth participants polling in favour of offline classes, but it was contradictory to a retrospective study¹⁰ where 1st year medical students clearly established that Online training is an identical or enhanced learning experience than classroom sessions. In a study done by T Muthuprasad, *et al*¹¹, about 70% participants were ready to OPT Online classes for the continuity of

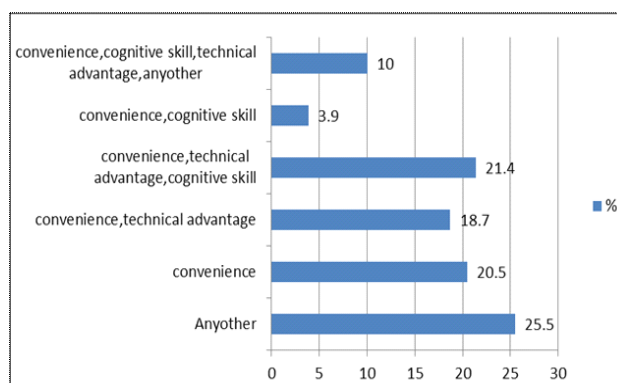


Fig 2 — Opinion of students regarding benefits of online classes (in percentage)

curriculum during pandemic ,which was analogous to our study (62%). 81.7% students of our study complained of technical issues which was not in support of a study done in Dakshina Kannada and Udupi District (47.1%)⁹. The present study showed nearly half of the participants believed that Online classes improved technical skills as compared to face to face classes which was reinforced by a study done by T Muthuprasad¹¹.

Mobile was used as a device for attending Online classes by 77.6% students followed by 13% and 9.4% students who used Laptop and Tablet, respectively in our study, which was relatively more than the results from a former study¹¹ where 57.98% students used Smart Phone as a device followed by 35.8% and 4.98% used Laptop and Tablet respectively. About frequency and duration of class, in a study done during COVID pandemic¹¹, 48% of students required a break of 15 min gap in between 2 classes, as opposed to our study

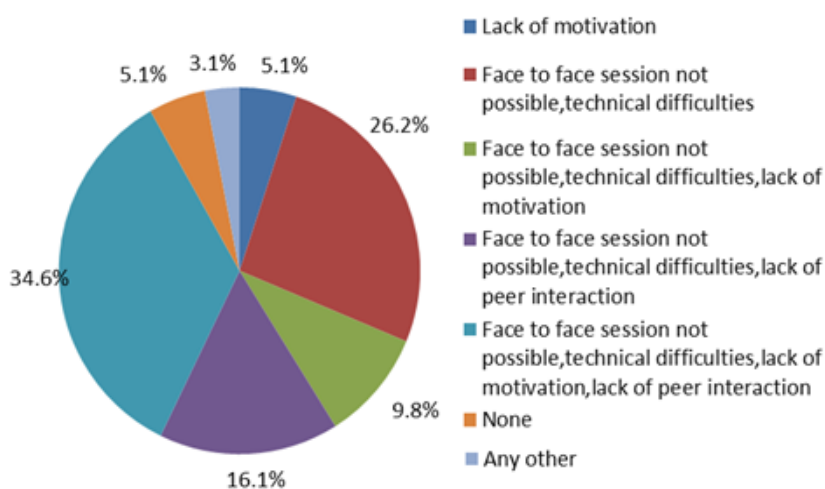


Fig 3 — Opinion of students regarding drawbacks of online classes (in percentage)

(28.4%). Nature of Online exam was yet another variable which was analysed and (35.2%) in the present study said objective assessment model makes them more confident for an exam which was not in line with the findings of a study by Muthuprasad (2021)¹¹. A little more than a quarter percentage of participants (27%) recommended subjective questions for assessment, which was more as compared to above study by Muthuprasad, *et al* where only 3.9% accepted it as an assessment tool. The same study claimed 60% respondents agreed that there is no possibility of face to face sessions and in our study 72.3% agreed the same. In a study conducted by Sean Smith¹² 20% agreed that instant response from both peers and instructors is possible with traditional training, whereas 50.7% agreed for peer interaction and 71.5% agreed for face to face interactions in our study. 44.5% from the current study agreed for live classes to clear doubts which were far less as compared to a previously done study¹¹ (84%). Structure of Online classes was analyzed and the preference pattern in our study was 85.6% preferred live Online classes and (9.5%) recorded videos which, when compared to above study 17.9% preferred live classes and recorded videos (54.4%) .

In a retrospective study done by Laura M¹⁰ students suggested that increased management and individual attention with web based content enhanced their general assessment of learning experience compared to face to face classroom sessions. Similar to our study where majority agreed Online mode is flexible and convenient. On comparing improvement in learning skill, it was found that in one study¹², 5% students agreed use of Computer and internet as a better knowledge experience, where as in our study 35.3% agreed for improved cognitive skill with Online mode.

CONCLUSION

Online learning has helped students to become independent learners by improving their technical knowledge, cognitive skills and also gave them opportunities to explore latest learning applications. In this study, we have tried to analyze feedback of students for both Online and offline classes. Beside the benefits of Online mode, the obstacles which students faced were discussed in this study such as Online classes could not be accessed by every student due to poor network issues, lack of Smart Phones which could lead to demographic based discrepancy with respect to quality of education and no face to face interactions leading to lack of motivation for attending those classes. As such there is need to recognize the obstacles that appear in the way of

accepting Online learning and the remedial measures to overcome it.

Limitations :

The major limitation of this study was that the data was obtained from students studying in medical colleges located only in one city in Andhra Pradesh. Thus the results cannot be generalized to the entire nation's Higher Education System. Also, the parameters included in the questionnaire could be self limiting as the faculty involved in designing of questionnaire had very less previous experience of e learning. Due to lack of data pertaining to feedback about e learning and one time cross sectional design of the study, comparison of data before and after the start of e learning could not be made.

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