

## **Perception and Attitude of Undergraduate Medical students regarding online teaching learning method**

<sup>1</sup>Chaudhari Jaymin, Resident doctor, Department of Pharmacology, B.J. Medical College, Ahmedabad, Gujarat.

<sup>2</sup>Solanki Manish, Associate Professor, Department of Pharmacology, B.J. Medical College, Ahmedabad, Gujarat.

<sup>3</sup>Shah Megha, Assistant Professor, Department of Pharmacology, B.J. Medical College, Ahmedabad, Gujarat.

<sup>4</sup>Desai Chetna, Professor and Head, Department of Pharmacology, B.J. Medical College, Ahmedabad, Gujarat.

**Corresponding Author:** Solanki Manish, Associate Professor, Department of Pharmacology, B.J. Medical College, Ahmedabad, Gujarat.

**How to citation this article:** Chaudhari Jaymin, Solanki Manish, Shah Megha, Desai Chetna, “Perception and Attitude of Undergraduate Medical students regarding online teaching learning method”, IJMACR- July – August - 2022, Vol – 5, Issue - 4, P. No. 84 - 90.

**Copyright:** © 2022, Solanki Manish, et al. This is an open access journal and article distributed under the terms of the creative commons attribution noncommercial License 4.0. Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**Type of Publication:** Original Research Article

**Conflicts of Interest:** Nil

### **Abstract**

**Introduction:** Medical Education has been shifted from Classroom Teaching learning method (CTLTM) to Online Teaching learning method (OTLM) in Covid-19 pandemic, however data regarding perception and attitude of medical students towards this change is not adequately investigated

**Aim:** To evaluate perception and attitude of undergraduate medical students towards online learning.

**Materials and methods:** A questionnaire-based survey was conducted on perception and attitude of undergraduate medical students towards OTLM. Pre-validated questionnaire containing 12 questions (2 questions- attitude, 10 questions- perception) was sent through email. Responses obtained were analyzed in terms of effectiveness, interactivity, addressing queries and advantages of OTLM and CTLTM by descriptive method and chi-square test.

**Results:** A total of 149 out of 243 students (61.32% response rate) responded to the questionnaire. Of these, 17 (11.41%) and 3 (2.01%) students perceived that OTLM was effective for understanding the theory classes and practical classes respectively. OTLM was significantly more time saving, comfortable and had improved attendance than CTLTM ( $p < 0.05$ ,  $df = 4$ ), while CTLTM was significantly better in terms of interactivity and addressing queries than OTLM ( $p < 0.05$ ,  $df = 4$ ). Out of 149 students, 79 (53.02%) students did not prefer to continue with OTLM after the pandemic is over

**Conclusion:** Undergraduate medical students perceive that OTLM is time saving and comfortable but less interactive & less effective. They prefer CTLTM over OTLM as a teaching learning method.

**Keywords:** Attitude, CTLTM (Classroom Teaching learning method), OTLM (Online Teaching learning method), Perception, Undergraduate Medical Students

## **Introduction**

There is now evident that the SARSCoV-2 outbreak has affected the lives throughout the world. The first case of pneumonia due to SARSCoV-2 was reported on December 8, 2019 in China and identified on January 7, 2020. It has spread throughout the world and changed the way we interact with each other. Hospitals are developing screening methods and contingency plans for clinical medicine practice. But what about the education of our colleagues and our trainees during this time of uncertainty? Online learning is not a novel concept; however, for academicians like us, it is a shift away from our conventional classroom teaching model<sup>[1]</sup>.

In 2004, Drs. Cook and Dupras published an article explaining the most effective way to create an online learning platform to be used in medicine. They emphasized the importance of a user-friendly and intuitive website design that is well maintained, as well as the integration of self-assessment features to ensure that learners are properly engaging in the material<sup>[2]</sup>. Recently, Virginia Gewin described helpful tips in the transition to online learning. She notes the importance of creating much more focused lessons for online learning that highlight a few main points. She notes the utility of live-video conferencing for follow-up to the previously described self-learning module, but states that live conferencing should not be used for all educational activities due to poor connections and overuse.

New education delivery systems: A two-dimensional, a four-cell matrix can be used to categorize the educational delivery systems. The first dimension is time and the second dimension is place. The time dimension has two levels, synchronous, which is when both delivery and receipt of course material occur at the same time, and asynchronous, when delivery of the course

material precedes receipt of such material by the student. There are two levels of place: same where both the instruction and student reception of instruction occur at the same place and different where the location of the instruction and student receipt of instruction are different. These can be further described as current primary delivery (synchronous and same), distance learning (synchronous and different), on-line (asynchronous and different) and recorded (asynchronous and same).

In India, colleges and schools have been closed since March due to Covid19 Pandemic. Many institutions had to adopt online teaching-learning method to maintain social distancing<sup>[3]</sup>. Though online teaching-learning have been in existence for many years, its role in medical education had been limited in application. So, this sudden shift to Online teaching-learning method necessitates to evaluate the application of online teaching learning method in medical education<sup>[4]</sup>. This study has been carried out with the aim to evaluate perception and attitude of undergraduate medical students towards online learning.

## **Materials and Methods**

It was a cross sectional, questionnaire-based study conducted at department of pharmacology, B.J. Medical college Ahmedabad over a period of 1 month. All 2nd year MBBS students from B.J. Medical College, Ahmedabad, who were willing to participate were included in this study. After taking prior approval from the institutional ethics committee a questionnaire-based survey was conducted on perception and attitude of undergraduate medical students towards online teaching learning method.

The questionnaire was constructed through google form and was circulated among second year MBBS students through email. The email address of the students was obtained from the official records. The questionnaire was formed after discussion with educators and validated. The google form contained two sections. Section 1 contained information regarding personal data like name, academic year, contact details and consent to participate in the study. Only after completion of Section 1, the students were allowed to proceed to Section 2. Section 2 contained questions regarding perception and attitude of students towards online learning and conventional classroom learning. The questionnaire contained 12 multiple choice questions. Out of total 12 questions, 2 questions were regarding attitude and 10 questions were regarding perception.

Questionnaire was sent through email simultaneously to all the participants. One week was provided to send their responses. Two reminders (one at the end of first week and the next one at the end of second week) were sent to those participants who have not submitted their responses. By the end of third week, all the responses obtained were analyzed.

### Statistical analysis

The data analysis was conducted using Microsoft excel 2019. Descriptive statistics (mean, standard deviation, ratio) were used to describe continuous variables. Frequency statistics (number and percentage) were used to describe categorical variables and statistical significance were analyzed by using chi square test. *p* value of <0.05 was considered statistically significant.

### Results

Questionnaire was sent to 243 students out of which 149 (61.32%) students participated in the study and all of

them have attended all the questions. The results of the study are as follows:

### Demographic Details

Out of 149 students, majority of students, 88 (59.06%) were 20 years of age, 30 (20.13%) students were of 21 years, 29 (19.46%) were 19 years of age and 2 (0.01%) students were 22 years of age. The mean age of the students was found to be 20.03±1.32 years. Out of 149 students, 109 (73.15%) were males and 40 (26.84%) were females. The male: female ratio was found to be 2.7:1. Out of 149 students, 119 (79.86%) students were from urban area, while 30 (20.13%) students were from rural area. The urban: rural area ratio was found to be 3.96:1

### Questions

The questionnaire contained 12 questions in which out of first 8 questions 2 questions were about attitude and 6 questions were about perception of undergraduate medical students regarding online teaching learning method (Table-1). Question 9 to 12 were about advantages and disadvantages of OTLM and CTLM (Table-2).

Table 1: Perception and attitude of undergraduate medical student regarding OTLM and CTLM

Sr. No	Questions	Online teaching learning method (OTLM)	Classroom teaching learning method (CTLM)	Both
1	Which method of learning is more effective in terms of understanding the theory classes?	17 (11.41%)	76 (51.01%)	56 (37.58%)
2	Which method of learning is more effective for practical classes?	3 (2.01%)	142 (95.30%)	4 (2.68%)
3	Which learning method works well with your daily schedule?	55 (36.91%)	60 (40.27%)	34 (22.82%)
4	Which method of learning is more effective in terms of completion of study/course?	54 (36.24%)	71 (47.65%)	24 (16.11%)
5	Would you like to continue with Online Teaching Learning Method even after the pandemic is over?	36 (24.16%)	79 (53.02%)	34 (22.82%)
6	Which learning method is able to solve your doubts more effectively post-session?	20 (13.49%)	79 (53.02%)	50 (33.56%)
7	Which method would you prefer more for routine teaching during an academic year?	18 (12.08%)	91 (61.07%)	40 (26.85%)
8	Which method is more interactive and engaging?	26 (17.45%)	102 (68.46%)	21 (14.09%)

Out of 149 students who participated in the study, majority of students, 76 (51.01%) found CTLM effective, while 17 (11.41%) students found OTLM

effective for understanding of theory classes and 56 (37.58%) students found both methods equally effective. Similarly, majority of the students, 142 (95.30%) found CTLM effective for understanding of practical classes, while only 3 (2.01%) found OTLM effective and 4 (2.68%) students found both methods equally effective (Table 1).

In terms of the learning method which works well with their daily schedule, out of 149 students, 60 (40.27%) students opted for classroom method, 55 (36.91%) students opted for online teaching learning method, and 34 (22.82%) students opted for both (Table 1). When they were asked about effectiveness of online and classroom teaching learning methods in terms of completion of study course, out of 149 students, 71 (47.65%) students perceived that CTLM is effective, 54 (36.24%) students perceived that OTLM is effective, while 24 (16.11%) students perceived that both are equally effective (Table 1).

Out of 149 students, only 36 (24.16%) students were willing to continue with online teaching learning method even after the pandemic is over, while 79 (53.02%) students were not willing to continue with online teaching learning method, whereas 34 (22.82%) students opted can't say (Table 1). Out of 149 students who participated in the study, 79 (53.02%) students were in favour of classroom teaching learning method, 20 (13.42%) students were in favour of online teaching learning method, 50 (33.56%) students were in favour of both, regarding the learning method which is able to solve students' queries more effectively post session (Table 1).

Regarding the teaching learning method that they would prefer for routine teaching during an academic year, out of 149 students, 91 (61.07%) students preferred

classroom teaching learning method, 18 (12.08%) students preferred online teaching learning method, 40 (26.85%) students preferred both (Table 1). In terms of the teaching learning method which is more interactive and engaging, out of 149 students who were enrolled in the study, 102 students were in favour of classroom teaching learning method, 26 students were in favour of online teaching learning method, and 21 students were in favour of both (Table 1).

Table 2: Advantages and disadvantages of OTLM and CTLM

	Online Teaching Learning Method (OTLM)	Classroom Teaching Learning Method (CTLM)
<b>Advantages</b>		
Time Saving	106(71.1%)	13(8.7%)
Comfortable	108(72.5%)	45(30.2%)
Improved attendance	79(53%)	51(34.2%)
Better interactivity	23(15.4%)	109(73.2%)
Addressing queries	22(14.8%)	76(51%)
<b>Disadvantages</b>		
Time Consuming	6(4%)	92(61.7%)
Poor interaction	91(61.1%)	22(14.8%)
Poor Attendance	20(13.4%)	41(27.5%)
Uncomfortable	14(9.4%)	53(35.6%)
Technical difficulties	111(74.5%)	-
Easy distractibility	89(59.7%)	-

When the students were asked about the advantages of OTLM, majority of students believed that OTLM is time saving, comfortable and it improves the attendance,

while students considered technical difficulties, poor interaction and easy distractibility to be the main disadvantages of OTLM (Table 1). When it comes to the advantages of CTLM, better interactivity and addressing queries are the main advantages according to the students. Regarding the disadvantages of CTLM, majority of the students were of the opinion that CTLM is more time consuming (Table 2).

OTLM was significantly more time saving, comfortable and had improved attendance than CTLM ( $\chi^2$  test,  $p < 0.05$ ,  $df = 4$ ), while CTLM was significantly better in terms of interactivity and addressing queries than OTLM ( $\chi^2$  test,  $p < 0.05$ ,  $df = 4$ )

Out of 12 questions, 2 questions (Question 5 and 7) were about attitude and majority of students were in favour of conventional classroom learning. 6 questions (Questions 1 to 4, 6 and 8) were about perception, and majority of students were in favour of conventional classroom learning (Table 1).

### Discussion

Novel coronavirus (SARSCoV-2) outbreak causing the disease known as COVID-19 has affected lives throughout the world. Medical Education has been shifted from Classroom Teaching learning method (CTLM) to Online Teaching learning method (OTLM) in Covid-19 pandemic. Therefore, we have conducted this study to evaluate perception and attitude of undergraduate medical students towards online learning. This study will help the educators to adopt appropriate teaching learning method and to make the teaching learning method more effective for the benefits of students.

Present study was a cross sectional, questionnaire-based study conducted at department of pharmacology of a tertiary care teaching hospital situated in western region

of India over a period of 1 month to all the 2nd year MBBS students from B.J. Medical College, Ahmedabad. In our study, questionnaire was sent to 243 students out of which 149 (61.32%) students participated in the study. Response rate in our study was higher compared to other similar studies by Al Qahtani A et al.<sup>[5]</sup> in Saudi Arabia and by Motte-Signoret E et al.<sup>[6]</sup> in medical school of Paris which was 41.77% and 41.2% respectively. This may be due to number of reminders sent to the participants in our study. In present study, out of 149 students, majority of students, 88 (59.06%) were 20 years old, 30 (20.13%) students were 21 years old, 29 (19.46%) were 19 years old and 2 (0.01%) students were 22 years old. In other similar study by Al Qahtani A et al.<sup>[5]</sup> conducted in Saudi Arabia, mean age of the study population was  $22.9 \pm 2.34$  years which was similar to our study.

In present study, out of 149 students, 109 (73.15%) were males and 40 (26.84%) were females. The male: female ratio was found to be 2.7:1. Likewise, in previous study by Al Qahtani A et al.,<sup>[5]</sup> 86.4% male and 13.6% female participated in the study. But in contrast, study of polish medical students by Bączek M et al,<sup>[7]</sup> showed 71% participation by female and 29% participation by males. Higher number of male students in our study may be due to higher male to female ratio of MBBS students during admission in the study institution.

In our study, 17 (11.04%) students perceived that OTLM is more effective than CTLM in terms of understanding theory class, while, as per study conducted at medical schools in the Riyadh region of Saudi Arabia by Al Qahtani A et al.,<sup>[5]</sup> 54.8% students perceived that OTLM offers better understanding compared to CTLM. Thus, in our study students favoured CTLM over OTLM in terms of understanding in contrast to the study by Al

Qahtani A et al. <sup>[5]</sup> in Saudi Arabia. According to our study, 35 (23.48 %) students out of 149 students would like to continue with OTLM even after the pandemic is over. Similar finding was seen in cross sectional survey conducted at medical school of Paris <sup>[8]</sup> where 28% students thought that online teaching should continue after the Covid 19 crisis is over as the students perceived that OTLM is more time saving and comfortable. More students are in favour of CTLM compared to OTLM may be due to fact that CTLM offers better understanding and solve queries effectively and no barrier of technical difficulties as student can communicate better in face-to-face conversation than online. Furthermore, OTLM is newer so it may be difficult for students to adopt this new way of teaching-learning.

According to our study, OTLM has significant advantage over CTLM in terms of time saving, comfortable and improved attendance, while ability to stay at home (69%), and comfortable surroundings (54%) were the major advantages of OTLM as per polish survey study of medical students. As per our study, poor interactivity and technical difficulties were the main disadvantages of the OTLM which were also the major disadvantages of OTLM according to polish survey study of medical students.

Students found OTLM comfortable and times saving because in OTLM, they don't have to travel and physically join the class as they can join classes from home or other places.

There were few limitations in our study like sample size was small and only second professional year MBBS students were included while other professional year students were not included.

However, strength of our study was the sufficient exposure of study population to both the teaching learning method i.e., OTLM and CTLM. Furthermore, the questionnaire used in our study was simple, less time consuming and validated.

### **Conclusion**

Undergraduate medical students perceive that OTLM is time saving and comfortable but less interactive & less effective. They prefer CTLM over OTLM as a teaching learning method.

Future research with special emphasis on comparison of various teaching learning methods (OTLM, CTLM, etc.) in large sample size is recommended.

### **Conflict of interest**

The authors declare that there is no conflict of interest.

### **References**

1. Shaurya S. Schools, Colleges to Remain Shut, But it Won't Be 'Zero Academic Year' | Here's How. 2020Aug11
2. Cook DA, Dupras DM. A practical guide to developing effective web-based learning. *J Gen Intern Med.* 2004;19(6):698–707.
3. Gewin V. Five tips for moving teaching online as COVID-19 takes hold. *Nature.* 2020; 580:295–296
4. John O'Malley. [Internet]. Students Perceptions of Distance Learning, Online Learning and the Traditional Classroom. 1999 [cited 2020Oct27]
5. Al Qahtani A, Al Swedan N, Almulhim A, AL Adwan R, Alessa Y, Al Qahtani K, Albogami M, Altwairqi K, Alotaibi F, AlHadlaq A, Aldhafian O. Online versus classroom teaching for medical students during COVID-19: measuring effectiveness and satisfaction. *BMC medical education.* 2021 Dec;21(1):1-7.

6. Motte-Signoret E, Labbé A, Benoist G, Linglart A, Gajdos V, Lapillonne A. Perception of medical education by learners and teachers during the COVID-19 pandemic: a cross-sectional survey of online teaching. *Medical education online*. 2021 Jan 1;26(1):1919042.
7. Bączek M, Zagańczyk-Bączek M, Szpringer M, Jaroszyński A, Woźakowska-Kapłon B. Students' perception of online learning during the COVID-19 pandemic: a survey study of Polish medical students. *Medicine*. 2021 Feb 19;100(7).
8. Schneider, S.L., Council, M.L. Distance learning in the era of COVID-19. *Arch Dermatol Res* 313, 389–390 (2021)