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Original Research Article

Perception Regarding Online Teaching among Undergraduate Students of a Peripheral Medical College of West Bengal: A descriptive cross-sectional study.

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Key words

Online class,
Pandemic,
Remote teaching,
Virtual learning.

Abstract

Background: COVID 19 pandemic has severely impacted medical education and residency training all over the world. Tele-teaching via online platforms became an apt solution as a result. This study was conducted on MBBS undergraduate students of Bankura Sammilani Medical College to describe their perception regarding e-learning. **Materials and methods:** All the students of 4th and 6th semester MBBS of Bankura Sammilani Medical College were given a pre-designed, pre-tested Google form questionnaire and their responses were collected. **Results:** 73.12% students were satisfied or very satisfied in live lecture class compared to only 28.46% in live practical class. However, for theory classes, majority felt traditional class as superior than online modes with respect to understanding of content (85.77%), less distraction during class (58.10%), interaction with faculty (88.54%), interaction with peers (86.96%), clearing of doubts (83.79%). Virtual mode gained superiority in recording of information (66.40%), flexibility of class timing (64.03%) and flexibility of continuation of class (51.78%). For practical classes, majority thought that traditional modality is better than virtual modes with respect to all the parameters. **Conclusion:** Majority of students considered traditional teaching as a better mode of teaching than virtual mode of class.

1. Introduction

The COVID 19 pandemic has impacted significantly on all the countries in view of loss of life, physical impairment, financial loss and psychological distress.¹ COVID 19 pandemic has affected all aspects of human life including medical education all over the world. With principles of

social distancing and lockdown being enforced, all theory and practical classes were suspended. With the advancement of information technology, plethora of medical knowledge is available online. Whilst not ideal, tele-teaching may prove to be an apt solution in the current scenario.²

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Rather than leaving students to their own devices, online teaching guides student learning and places content within the overall context of their curriculum.² A new competency based medical education curriculum is being implemented in all medical colleges in India since August 2019 for first year undergraduates' batch.³ In this scenario, adapting to virtual teaching modalities pose a challenge to medical educators. Bankura Sammilani Medical College started online teaching for all semesters of MBBS students since early April 2020. We conducted a cross-sectional study on 4th and 6th semester students to gauge their response to online teaching in comparison to the traditional teaching from their one-year experience i.e., 1st April 2020- 31st March 2021.

Objectives:

- To estimate the level of satisfaction of students in online classes.
- To assess the preference of online teaching over traditional teaching.

2. Materials and Methods:

- **Study type and design:** Descriptive, cross-sectional study.
- **Study settings and study period:** The study was conducted in Bankura Sammilani Medical College from August'20 to November'20.
- **Study population:** All the 300 MBBS students of 4th and 6th semester of Bankura Sammilani Medical College were included in this study.
- Ethical approval was obtained from institutional Ethics Committee of Bankura Sammilani Medical College. Informed consent was obtained from all participants in the study.
- **Sample size & sampling technique-** 253 out of 300 students submitted their response. Complete enumeration method was used.
- **Tools, Techniques, Data collection and analysis:** The participants were given a pre-designed and pre-tested Google form questionnaire for this study. Their responses were entered in an excel sheet and checked twice to detect any erroneous entry. Data were organised and presented in the forms of tables and diagrams. Principles of descriptive statistics were used.

3. Results

3.1 Demography of the sample population

There were total 253 students out of which male students were 135 (53.36%) and female students

were 118(46.64%). Among them 115(45.45%) students were from 4th semester and 138(54.55%) students were from 6th semester. Mean age of students were 21.4 years, SD 1.18 years. 76 (30.04%) students belonged from rural area and 177(69.96%) students belonged from urban area. In Higher Secondary level, 96(37.94%) students studied in Bengali medium, 150(59.29%) students studied in English medium, 6(2.37%) students studied in Hindi medium and 1 (0.4%) student studied in Urdu medium. Among the students, number of day scholars were 56(22.13%), whereas 194(76.68%) were hostelite and 3(1.19%) students stayed as paying guest.

3.2 Devices and media used by the students to participate in online class.

Table no.1 shows different gadgets used by the students to participate in online classes. Majority of the students used mobile phones as gadget for online classes.

Table 1: Distribution of number of students according to devices used by them: (n=253)

Devices	Number of students (%)
Mobiles only	218(86.16)
Mobile + Desktop	4(1.58)
Mobile + Desktop +Laptop	1(0.4)
Mobile + Laptop	22(8.7)
Mobile + Laptop + Tablets	4(1.58)
Mobile + Tablets	4(1.58)
Total	253(100)

168 (66.4%) students used Earphone as audio device whereas 82(32.41%) students used speaker of device as audio device. Only 3(1.19%) students use standalone speakers. Zoom App and Google Meet were mainly used to conduct the live classes. Coordination of classes was done through Whatsapp and through Google Classroom. Material upload was done in YouTube, through WhatsApp and through Google classroom. Doubts were clarified in live class over voice in 126(49.8%) students and later by messages/mails in 127(50.2%) students.

3.3 Opinion of students regarding online classes

Table 2: Distribution of number of students according to satisfaction level in virtual live lecture class: (n=253)

Satisfaction level	Number of students (%)
Very Unsatisfied	7(2.77)
Unsatisfied	25(9.88)
Undecided	36(14.23)
Satisfied	147(58.10)
Very Satisfied	38(15.02)
Total	253(100.00)

Table 3: Distribution of number of students according to satisfaction level in virtual live practical class: (n=253)

Satisfaction level	Number of students (%)
Very Unsatisfied	87(34.39)
Unsatisfied	52(20.55)
Undecided	42(16.60)
Satisfied	44(17.39)
Very Satisfied	28(11.07)
Total	253(100.00)

Table No. 2 & 3 respectively shows satisfaction level in virtual live lecture class and live practical class. Majority of students (73.12%) were satisfied or very satisfied in live lecture class but that percentage was significantly lower (28.46%) in live practical class. **Table 4** shows that for theory classes, traditional face to face class is superior than online

Table 4: Distribution of number of students according to their preferred mode of theory class and different parameters of perception: (n=253).

Parameters	Face to Face No (%)	Virtual No (%)	Total No (%)
Understanding of Content	217(85.77)	36(14.23)	253(100.00)
Less distraction during class	147(58.10)	106(41.90)	253(100.00)
Recording of Information	85(33.60)	168(66.40)	253(100.00)
Flexibility of class timing	91(35.97)	162(64.03)	253(100.00)
Flexibility of continuation of class	122(48.22)	131(51.78)	253(100.00)
Interaction with faculty	224(88.54)	29(11.46)	253(100.00)
Interaction with peers	220(86.96)	33(13.04)	253(100.00)
Clearing of doubts	212(83.79)	41(16.21)	253(100.00)

Table 5: distribution of students according to their preferred mode of practical class and different parameters of perception: (n=253).

Parameters	Face to Face No (%)	Virtual No (%)	Total No (%)
Understanding of Content	236(93.28)	17(6.72)	253(100.00)
Less distraction during class	183(72.33)	70(27.67)	253(100.00)
Recording of Information	155(61.26)	98(38.74)	253(100.00)
Flexibility of class timing	139(54.94)	114(45.06)	253(100.00)
Flexibility of continuation of class	166(65.61)	87(34.39)	253(100.00)
Interaction with faculty	232(91.70)	21(8.30)	253(100.00)
Interaction with peers	232(91.70)	21(8.30)	253(100.00)
Clearing of doubts	234(92.49)	19(7.51)	253(100.00)

4. Discussion:

There were total 253 students out of which male students were 53.36% and female students were 46.64%. Mean age of students were 21.4 years, SD 1.18 years. Similarly, in a study by Uma et al⁴ there were 50.3% females and 49.7% males where mean age of the respondents was 21.5 years. Daroedono et al⁵ and Surana et al⁶ reported mean age of their respondents as 21.2 and 21.7 years respectively. Majority (86.16%) of the students in our study used only mobile phone as gadget. Uma et al. found that 90% students preferred mobile for e-learning.

modes with respect to understanding of content (85.77%), less distraction during class (58.10%), interaction with faculty (88.54%), interaction with peers (86.96%), clearing of doubts (83.79%). Virtual mode of class is superior with respect to recording of information (66.40%), Flexibility of class timing (64.03%) & flexibility of continuation of class (51.78%).

Table 5 shows that for Practical classes, traditional modality is superior than virtual modes with respect to understanding of content (93.28%), less distraction during class (72.33%), interaction with faculty (91.70%), interaction with peers (91.70%), clearing of doubts (92.49%), recording of information (61.26%), flexibility of class timing (54.94%) & flexibility of continuation of class (65.61%).

Majority of students (73.12%) were satisfied or very satisfied in live lecture class but that percentage is significantly lower (28.46%) in live practical class in our study. Uma et al. found that 50% students seemed to be satisfied with online teaching, and 20.9% were dissatisfied. Baczek et al⁷ observed acceptance of e-learning in 73% respondents who rated e-learning as enjoyable, of these, 15% found it extremely enjoyable, 29% found it very enjoyable & 27% students did not enjoy online learning. In our study traditional face to face lecture class is superior than online modes with respect to understanding of

content (85.77%), less distraction during class (58.10%), interaction with faculty (88.54%), interaction with peers (86.96%), clearing of doubts (83.79%). Baczek M et al⁷ showed e-learning was considered less effective than face-to-face learning in terms of increasing skills ($P<.001$) and social competences ($P<.001$), students assessed that they were less active during online classes compared with traditional classes ($P<.001$).

We found virtual mode of lecture class was superior with respect to recording of information (66.40%), flexibility of class timing (64.03%) & flexibility of continuation of class (51.78%). Similarly, Singh KV et al⁸ showed majority of the students perceived that time flexibility (58.5%) and location flexibility (62.0%) in online learning as beneficial, also approximately half (49.4%) of the students agreed that there is no need to get ready/dress up for attending online classes.

This study was focused on the students' perspective on the usefulness and applicability of online teaching in medical education. However, a better and more statistically appropriate result could be obtained by doing the study on all undergraduate students of multiple medical colleges. But due to logistical constraints we have focused on two semesters of our medical college.

COVID-19 pandemic created tough challenges for all educational systems⁹ and had affected educational system worldwide.^{10,11} At the same time, there is a strong opportunity for us to adopt newer online technique that is more suitable for the present generation learners.^{12,13}

5. Conclusions

Teaching and learning are two mutually dependent intertwined processes which has undergone a paradigm shift in recent years. Medical education in India after remaining stagnant for decades finally has started to change with times. With the implementation of new competency-based curriculum (CBME), there are major changes in undergraduate teaching-learning pattern.¹⁴

Teachers are encouraged to change themselves into Facilitators and traditional one directional teaching has been transformed into learner centric two directional teaching and learning. But this transformation process has faced its biggest challenge in the form of Covid 19 pandemic. Physical classrooms with teacher and students facing each

other transformed overnight into virtual classrooms where teacher and students are sitting in their respective drawing rooms and participating in teaching learning activities virtually using various methods. This virtual teaching is new to medical educators in our country and remote learning is also a novel experience for undergraduate medical students of our country. So, there are few initial teething problems.

Most participants in our study liked online teaching methods for their flexibility and use of multimedia but lack of interaction remained disadvantage for virtual teaching learning methods. We hope that more similar studies will be done in near future to uncover different factors affecting virtual learning experience of students and then appropriate steps should be taken by both government and private stakeholders to ensure development of a better online medical education infrastructure in our country.

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