Perception of MBBS Students on Online versus Offline Education: A Cross Sectional Study

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Abstract:

Introduction: The COVID-19 pandemic has resulted in shifting of medical education onto a virtual platform. This has provided us with an opportunity to assess and analyze the students perception of these virtual classes which otherwise did not form a significant part of the traditional medical education. During pandemic situation the study objective was to find out the association among socioeconomic status of the students with their virtual classes.

Methodology: The cross sectional study was conducted from 1st September 2021 to 25th January 2022 among 110 third year undergraduate students of VIMSAR, Burla. It was conducted by an online survey over Google form and circulated through WhatsApp. Response of each participant was collected using linked survey and result was obtained using Microsoft excel.

Result: 109 (99.1%) students were found to have an easy access to smart phone and 105(95.5%) students have regular access to internet. Quality of learning and interaction was found to be better in offline classes, but accessibility to the class was found more in online classes. A significant association were found among socioeconomic status with regular access to internet like upper class (p=0.032) and upper middle class (p=0.021) at p<0.05.

Statistical analysis: The data were expressed in frequency and proportion for categorical variables and analyzed using Z score and Chi square test. The p-value <0.05 was considered to be significant.

Conclusion: Better internet connectivity along with accessibility to recorded classes and increased student teacher interaction could enhance the learning experience of the students in the virtual platform.

Keywords: Online classes, Off line classes, Medical education, E-learning.

Introduction

Now digital information is universally available to almost everyone. In this era of information technology, medical education is now confronted with narrative challenges in the world. According to the Indian Constitution Article -45 education is an elementary and primary need or thing for the children's up to fourteen years of age. The developed technologies give us a new way to gain skills and enhance our knowledge. [1] Online learning is a unique type of education system where, students use their devices like computers, laptops and mobile phones with the help of net connectivity. We all should thank our developing technologies and the internet, which is helping us to boost our knowledge and skills by opening a wide range of learning options for us. E-learning is providing benefits to both learners and employers. [2] Now a day the traditional method of learning is changing and developing; thus, online education became the new skill and has managed to keep education alive in these difficult times but it cannot completely replace it. Online learning can be conducted practically or virtually from anywhere across the world. [3, 4] Online learning is increasing at a rapid rate of 60 to 70%. in 2020 we all have seen the pandemic period which has affected our education sector badly and has raised fear for completing the course for the learners as well as trainers, as schools and colleges were asked to be closed temporarily.[5-7] According to Various schools, colleges, and universities across India have started conducting online classes and have partnered with some third-

party platforms to provide online learning to their students, which is a virtual learning with a wide range of functions and disciplines to get academic degrees and are managed by the hind system of that dealer and push on the faculties of the institutions. Some of the third-party vendors are Code Tantra, Google Meet, Microsoft Teams, EdTech, zoom etc. were greater role during that pandemic situation not only in education system but also in all field of communication. [8-11]

Objectives

[1] To assess perception of MBBS students between online and offline learning method.
[2] To find out the association between sociodemographic variables and effect of online classes in the education system of medical college.

Materials and Methods

This institutional based cross sectional study conducted by taking 110 respondents using Google form through WhatsApp between September 2021 to January 2022 at VIMSAR, Burla. Pre-designed, pretested questionnaires were prepared and sent to the all the third year students those are easily assessable and residing in hostel

Inclusion Criteria: Those who gave the consent for this study and residing in the hostel

Exclusion Criteria: Those unwilling to give consent.

Statistical analysis: Collected data were entered, completed checked and analyzed using SPSS version 21.0 (SPSS IBM corporation, Armonk. New York). Results were expressed in frequency and proportion for categorical variables and analyzed using Chi square test. The p-value <0.05 was considered to be significant.

Ethical Approval: This study was approved by Institutional Ethics Committee, VIMSAR, Burla (195-2022/I-F-O/97/Dt.05.08.2022).

Results

Out of all MBBS students, only 110 students were residing in hostel during the pandemic period. In this present study (table-1) depicted the social and demographic variables majority were of male participants (68.2%). Among responders 93.6 % students were Hindu. Muslim and Christian were 3.6% and 2.7% respectively. The socioeconomic status shows, majority of students (32.7%) belonged to upper class, upper middle as 22.7%, lower middle 20.7% and rest lower economic class was 6.1%.

Table 1: Sociodemographic Variables of Study Participants

		N= 110
Age	18-22years	91(82.7%)
	23-26years	18(16.3%)
	27-30years	1(1.0%)
Sex	Male	75(68.2%)
	Female	35(31.8%)
Religion	Hindu	102(93.6%)
	Muslim	4(3.6%)
	Christian	3(2.7%)
	Others	1(0.9%)
Socio-economic status	Upper class	36(32.7%)
	Upper middle	25(22.7%)
	Lower middle	22(20.7%)
	Upper lower	19(17.8%)
	Lower	8(6.1%)

The effect of online classes depicted in table-2 shows 99.1% students have easy access to Smart phone on regular basis,95.5% have regular access to internet, 55.5% students like to read in smart phone, maximum students 60.9% like to use online applications such as Google meet and zoom for online learning. 8.2% students use Smart phone more than 12hr per day.

Table 2: Effect of Online classes on the Study participants

Questions	Yes	No
Do you have a Smart phone or have easy access to Smart phone on regular basis?	109(99.1%)	1(0.9%)
Do you regular to access internet?	105(95.5%)	5(4.5%)
Do you enjoy reading on smart phone?	61(55.5%)	49(44.5%)
Do you like use of app e.g.:- (Google meet, zoom) for online learning?	67(60.9%)	43(39.1%)
Use of smart phone> 12 hr in a day?	9(8.2%)	101(92%)

Table -3 The last part of the questionnaire comprised of 8 questions to evaluate the effectiveness of online learning as compared to offline class room teaching. Majority of students (80.90%) favored offline classroom teaching for better learning and understanding. Most of the students (84.54%) preferred offline mode of teaching for acquisition of practical skills. and 65.45% students considered classroom teaching to be more interactive as compared to online learning. Regarding doubts clear 81.81% students preferred offline mode of learning. A statistically significant difference (p-value<0.05) was observed in the view of students when online learning was compared with offline learning.

Table3: Comparative effectiveness of Online learning vs. Offline learning (n=110)

Sl no.	Question	Online learning (N %)	Offline learning (N %)	Z score	P-value
1	Which mode of teaching is convenient?	35(31.81%)	75(68.18%)	-6.213	<0.0001
2	Which mode of teaching helps in better learning and understanding?	21(19.09%)	89(80.90%)	-16.243	<0.0001
3	Which mode of teaching helps in acquiring practical skills?	17(15.45%)	93(84.54%)	-11.823	<0.0001
4	Which mode of teaching saves time?	98(89.09%)	12(10.90%)	3.312	<0.0001
5	Which mode of teaching is more interactive with teachers and peers?	28(25.45%)	72(65.45%)	-8.293	<0.0001
6	Which mode of teaching clears doubts?	20(18.18%)	90(81.81%)	-10.293	<0.0001
7	Which mode of teaching is better for assignment submission?	102(92.72%)	08(7.27%)	5.234	<0.0001
8	Which mode of teaching will you prefer in future?	24(21.81%)	86(78.18%)	-11.693	<0.0001

*Significant at p-value <0.05

Table 4: Association between socio demographic status with regular access to internet

Socioeconomic Status	Regular access to internet		Chi square	P-Value
	Yes	No		
Upper Class	35	1	0.385	0.032
Upper middle	25	0	1.54	0.021
Lower middle	20	2	0.705	0.398
Upper lower	18	1	0.027	0.868
Lower	7	1	1.258	0.258
*Significant at p-value <0.05	Total=105	Total=5		

Table 5: Association between sociodemographic status with enjoy reading on smart phone

Socio economic Status	Enjoy reading on Smartphone		Chi square	P-Value
	Yes	No		
Upper Class	22	14	0.6931	0.042
Upper middle	12	13	0.7278	0.39
Lower middle	11	11	0.3312	0.563
Upper lower	9	10	0.6079	0.433
Lower	7	1	3.5865	0.063
	Total=61	Total=49		

*Significant at p-value <0.05

Table 6: Association between sociodemographic status and use of online applications

Socioeconomic Status	Do you like use of Applications like Zoom & Google meet?		Chi square	P-Value
	Yes	No		
Upper Class	22	14	1.1726	0.003
Upper middle	17	08	0.6832	0.405
Lower middle	12	10	0.4677	0.491
Upper lower	11	08	0.0876	0.766
Lower	05	03	0.0091	0.924
	Total=67	Total=43		

*Significant at p-value <0.05

The association of different socioeconomic status with regular use of internet was shown in Table -4 and it was found a significantly association among upper class (p=0.032) and upper middle class students (p=0.021) at p<0.05. But in Table-5 and 6, a significant association was only found among upper class and enjoying reading on smart phone (p= 0.042 at p<0.05) and using different online applications I.e. (p= 0.003 at p<0.05).

Discussion

The expand of covid-19 pandemic and the guidelines issued by the government to cancel regular offline teaching posed the great challenge to students and the faculties of the medical colleges. As the shift to online mode of teaching was done it became vital for the faculty to collect feedback from the students to seem to be benefits and the limitations to the virtual mode of teaching. From the above study, we found that 95.5% of the students have regular access to internet and 55.45% students enjoy reading on smart phone, similar results was found by Alhumaid et al 2020 in West Bengal, they found 91.2% of the students have regular access to internet.[10] 55.5% students enjoy reading on smart phone. Mukhtar et al conducted a study on online learning during COVID-19 pandemic in Pakistanin 2020 and found that 63.7% students enjoy reading on Smartphone. [3]

In our study, 60.9% MBBS students like use of applications (Google meet, zoom) for online learning. In the year 2020 Zhang et al., conducted a study on evaluation of online course of traditional Chinese medicine for MBBS international students during the COVID-19 pandemic. They found 74.6% MBBS students like the use of applications like Google meet, zoom for online learning. [8] The effectiveness of offline learning method (81.81%) was better than online (18.18%) learning probably due to easy asses of doubt clearing. Kaur et al 2020 found that interaction was (47. 3%) in offline learning method. [12] Effectiveness of exams was compaired between online and offline method and it was found that 43.6% students gave moderate score to online learning method and 47.3% students gave very high score to offline method.

A similar study done by Dhawan in 2020 in Gujarat depicted offline exams is more effective than online exams. [13] In our study practical learning can be better in offline classes as 84.54% students gave very high score. In Japan, a similar study was done by Hong et al where 72.5% students preferred offline method over online method in case of practic al learning.[5] Few studies reviled that students do not prefer online learning due to lack of discipline, adequate learning resources and favorable learning environment [12,14 and 15].Student-teacher interaction is very useful not only for social development of the student by means of discussions, debate and conversation but also helps in the construction of doctor-patient relationship which is an essential for the medical profession [16] Our study was consistent to a similar study done by Elfaki et al 2019 in USA and found that students concentration was less on online classes i.e. 32.7%. Concentration of students was found moderate to high (45.5%) in offline classes. [17]

Conclusion

Teachers and students were highly satisfied with the implementation of online live broadcast courses in that pandemic period, and also armed the role of online live-streaming courses in improving the quality of teaching. However, we know that in education system it is believed that online teaching methods are a good supplement form of offline classroom teaching. So adequate and appropriate way of using online platform may help to improve the teaching processes but it is impossible to replace the traditional classrooms teaching processes, as teachers will inspired by this live- streaming lesson and believed that online teaching is an arrangement of teaching that might be encouraging the education system in future. Hence, teachers should plan to bear up the online teaching along with offline, in-class and out-of-the class.

Acknowledgement:

References

1. Pei L, Wu H. Does online learning work better than offline learning in undergraduate medical education? A systematic review and meta-analysis. Medical education online. 2019; 1; 24(1):1666538.
2. Tang B, CoretA, Qureshi A, Barron H, Ayala AP, Law M. Online lectures in undergraduate medical education: scoping review. JMIR medical education. 2018; 10; 4(1):e9091.
3. Mukhtar K, Javed K, Arooj M, Sethi A. Advantages, Limitations and Recommendations for online learning during COVID-19 pandemic era. Pakistan journal of medical sciences. 2020; 36 (COVID19-S4):S27.
4. Kemp N, Grieve R. Face-to-face or face-to-screen? Undergraduates' opinions and test performance in classroom vs. online learning. Frontiers in psychology. 2014; 12; 5:116971.
5. Hong Y, Li X, Lin Y, Xie J, Yan X, Lin Z. A comparative study of online education and traditional offline education during COVID-19.
6. Magas CP, Gruppen LD, Barrett M, Dedhia PH, Sandhu G. Intraoperative questioning to

advance higher-order thinking. The American Journal of Surgery. 2017; 1; 213(2):222-6.

7. Lin XL, Liu SQ. Live Broadcast Teaching Strategies for Cultivating Higher-order Thinking Skills. Mod Educ Technol. 2019; 29(3):99-105.

8. Zhang Q, He YJ, Zhu YH, Dai MC, Pan MM, Wu JQ, Zhang X, Gu YE, Wang FF, Xu XR, Qu F. The evaluation of online course of Traditional Chinese Medicine for Medical Bachelor, Bachelor of Surgery international students during the COVID-19 epidemic period. Integrative Medicine Research. 2020; 1; 9 (3):100449.

9. Adnan M, Anwar K. Online learning amid the COVID-19 pandemic: Students' perspectives. Online Submission. 2020; 2(1):45-51.

10. Alhumaid K, Ali S, Waheed A, Zahid E, Habes M. COVID-19 & e-learning: Perceptions & attitudes of teachers towards E-learning acceptance in the developing countries. Multicultural Education. 2020; 30; 6(2):100-15.

11. Baig MA. A critical study of effectiveness of online learning on student's achievement. I-Manager's Journal of Educational Technology, 2011; 7 (4), 28–34.

12. Kaur N, Dwivedi D, Arora J, Gandhi A. Study of the effectiveness of E-learning to conventional teaching in medical undergraduates amid COVID-19 pandemic. National Journal of Physiology, Pharmacy and Pharmacology. 2020; 30; 10(7):563-7.

13. Dhawan S. Online learning: A panacea in the time of COVID-19 crisis. Journal of educational technology systems. 2020; 49(1):5-22.

14. Shetty S, Shilpa C, Dey D, Kavya S. Academic crisis during COVID 19: online classes, a panacea for imminent doctors. Indian J Otolaryngol Head Neck Surg. 2020;1-5.

15. Abbasi S, Ayoob T, Malik A, Memon SI. Perceptions of students regarding E-learning during COVID-19 at a private medical college. Pak J Med Sci. 2020; 36(COVID19-S4): COVID -S57-S61.

16. Badhe P, Badhe Y, Patil K. Comparison of distance learning with traditional classroom in medical college students in COVID-19 lockdown period in India. Future of Medical Education Journal. 2020;10(4):42-45.

17. Elfaki NK, Abdulraheem I, Abdulrahim R. Impact of E-learning vs. Traditional Learning on Student's Performance and Attitude. International Medical Journal. 2019; 24(03):225-33.