Perceptions of dental students and teaching faculties about online learning in India

Dr. Pavankumar R. Singh [1], Dr. Anand S. Ambekar [2], Dr.Suresh K.Kangane [3], Dr. Pravinkumar S. Marure [4], Dr. Chaitanya Khanapure [5]
[1]PG Student, [2]Professor , [3] Professor & HOD, [4, 5] Reader
Dept of Orthodontics, MIDSR Dental College, Latur.

Abstract:

Aim: This study aimed to assess the influence of online learning on dental education as perceived by dental students and teaching faculties.

Materials and methods: In an institutional review board (IRB) approved protocol; a 16-question survey was created and electronically distributed to undergraduate, postgraduate, and teaching faculties of dental colleges in India. Participation was considered voluntary, and all responses were anonymous.

Results: The survey targeted dental students and staff, of which 256 responded. Of the respondents, 166 students (64.8%) preferred traditional lecture mixed with online learning, while 60 students (23.8%) preferred only the conventional lecture style. Out of the total, 26.6% believed in replacing the traditional lecture with an online lecture, while the majorities (50%) were neutral about the opinion. The responses also indicated that 87.5% of the people gave high credibility (more than 5 out of 10) about their experience in operating online lecture platforms. The opportunity to learn from the best teachers of our faculty worldwide was the most opted advantage of online lectures and technical problem as the most common disadvantage. Online classes should also include live demonstrations is the modification needed by the majority in online lectures.

Conclusion: Students and staff gave a neutral response to replace the traditional lectures with online learning and were hopeful of engaging in online learning along with traditional lectures after improvisation in the future curriculum.

.

Keywords: Dental education, COVID-19 pandemic, traditional lecture, e-learning, online learning.

Corresponding Author: Dr. Pavankumar R. Singh, PG Student, Dept of Orthodontics, MIDSR Dental College, Latur. Email id.: pavansingh6sept@gmail.com

INTRODUCTION:

Since the last decade, the use of social media has dramatically increased and gained popularity due to the exponential use of Smart phones, the internet, and smart devices. Social media applications like Facebook, Twitter, Google+, WhatsApp have much helped dental students, teachers, and practitioners connect, collaborate, and communicate among their peer group on a global scale.[1]

The impact of the COVID-19 pandemic was evident on various walks of life throughout the world.[2-4] During the Covid-19 pandemic lockdown period, smart phones and a digital platform like ZOOM have mainly increased.[5] Though online learning (e-learning) is not a new phenomenon, the outbreak of Covid-19 and the country going under lockdown shifted the whole education system into a virtual mode. Digital platforms have played a very

significant role in resuming dental college's academic work during the country's lockdown period.[2]

India is a developing country where education in dental institutions is mostly traditional chalk and board method or PowerPoint presentation in the lecture halls as opposed to some online lectures which are a prominent part of education in universities in developed countries.[5]

Online learning is a very potent tool that transforms the traditional method of learning because it strengthens the capacity of teaching and learning.[6] It also provides a platform for interaction and active learning, which promotes collaboration and idea-sharing among students and instructors.[7] Online learning provides an opportunity to learn without restrictions due to geographical constraints and gives a good option for lifelong learning.[8] Technology creates sustainable opportunities for the academic and professional growth of people and their role as participants and beneficiaries of institutional and social activities.[9]

In the post-Covid-19 era, when the dental colleges will reopen in full form, online learning will have its value in terms of getting the best dental faculties to lecture available at our doorsteps. Rather than depending on our dental college faculties, dental students will have access to the best education possible anywhere in the world at any time from smart devices.

The purpose of this study was to assess the success of online education by getting collective information about the perception and experiences of dental students and teaching faculties about e-learning and their interest in incorporating e-learning into courses. It will also help in understanding the advantages, disadvantages of e-learning and what modifications should be brought out to support dental student education. This study hypothesized that the implementation of e-learning and virtual education improves lecture attendance and students' perception of improved academic performance.

Material and Methods:
The survey instrument was designed to evaluate dental students' and teaching staff's perceptions of the influence of online applications and lectures on their perceived academic performance during the COVID-19 lockdown period. The exclusion criteria included those who did not consent to the survey; and those who did not complete the survey. This study targeted dental undergraduate, postgraduate students, and teaching faculties of various dental colleges in India. The study consisted of 16 questions, of which six were personal and general information about the participants which consisted of name, age, gender, degree, college, and department. The later 10 questions included: 4 multiple choices, 3 Likert scale questions with sublevels, 2 closed-ended and 1 open-ended questions. The open-ended question was to allow participants to add their suggestions for improvement needed in conventional and/or online lectures. The estimated time to complete the survey by a participant was less than 5 minutes. Institutional review board approval was obtained to conduct this survey.

The confidential and voluntary consent form and survey were accessed online through Google Forms, a web-based survey, and evaluation tool, with a link provided to the participants in a WhatsApp, Facebook, and e-mail invitation. The survey was conducted during a 2-month period from October to December 2020. Participation in the survey took place entirely online with all participants completing the survey anonymously using a device and browser of their choice, and at a time and place convenient for their schedules. No computer Internet Protocol (IP) addresses were collected. The survey's anonymity was assured that no personal information will be revealed of the participants.

Results:
The survey targeted undergraduate, postgraduate students and teaching staff of various dental colleges in India. Of which 256 participated from 36 different colleges from 11 different States in India. The majority of participants were from Maharashtra state and 14 different colleges of Maharashtra participated in the study. Out of the total participants, 64.5% were female and 35.5% were males. **[Figure 1]** The majority of participants were undergraduate students (65.2%) followed by postgraduates students (21.9%) followed by teaching staffs (12.9%). **[Figure 2]** Postgraduates and teaching staffs of Orthodontics

and Dentofacial orthopedics participated more compared to other post-graduation departments.

Two hundred and forty-three participants had attended (94.9%) the online lectures during the lockdown period and the rest thirteen participants (5.1%) did not attend any online lectures before.**[Figure 3]**

One hundred and sixty (62.5%) participants also presented online lectures out of the total **[Figure 4]** and the majority (73.9%) had rated their experience more than average. Majority of participant found online platforms as a good platform to share knowledge and has rated 5 or more out of 10 on an increasing betterment grade scale.

Regarding the advantages, disadvantages, and modifications needed in online lectures, the participants opted for all the options in the majority **[Table 1-3]**. The majority of participants (50%) were neutral about the opinion of conventional lectures by online lectures. **[Figure 5]** The majority of participants (64.8%) preferred both conventional and online lectures as the method of learning. **[Figure 6]**

One of the open-ended survey questions allowed each of the participants to freely suggest what they would like to add in conventional or online lectures to enhance their learning. Of the 256 participants, only 36 chose to comment on this. The majority of participants wanted the teachers to highlight the important points at the end of both conventional and online lectures.

Table 1: Analysis of question 11 regarding the advantages of online lectures.

Advantages	Number of responses	% of responses
Opportunity to learn from best faculties lecture all over the world	81	31.6
Students and practitioners could interact and share their knowledge and experience with their co-learner	41	16

The recorded lecture is good for revision	63	24.6
Question and answer session is helpful in learning	36	14.1
Social distancing	66	25.8
Continuation of academic progress in a situation like pandemic	68	26.6
Saves traveling time and cost	48	18.8
All of the above	158	61.7
None of the above	3	1.2
Total	**256**	**100**

Table 2: Analysis of question 12 regarding disadvantages of online lectures.

Disadvantages	Number of responses	% of responses
Technical problem	91	35.5
Internet data cost	66	25.8
Smartphone or computer requirement	50	19.5
Students may fake their attendance	61	23.8
Chances of personal information being hacked	42	16.4
Easily distracted	76	29.7
Privacy concerns	41	16
Unconducive home environment to study	49	19.1
Teachers and students lacking skills to operate digital platforms	33	12.9
All of the above	126	49.2
None of the above	7	2.7
Total	**256**	**100**

Table 3: Analysis of question 13 regarding modification needed in online lectures.

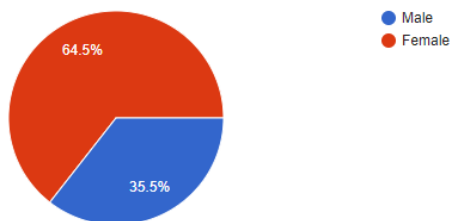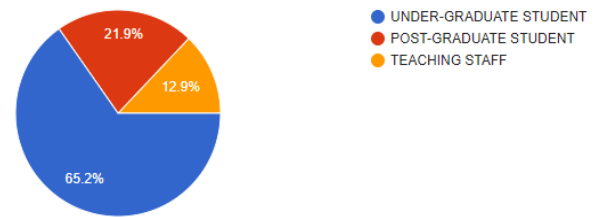| Modifications	Number of responses	% of responses
Short breaks should be included in a very long session lecture	60	23.4
Specific day or weekend should be allotted for doubt solving and discussion	53	20.7
A short exam of objective type question should be conducted after completion of a particular topic or session	53	20.7
Online lectures should also include live demonstrations	68	26.6
A special online platform should be created for lectures and discussions for dental students at the state and country level	48	18.8
Financial assistance from the government to very poor students for buying smartphones	40	15.6
All of the above	146	57
None of the above	5	2
Total	**256**	**100**

Figure 2: Designation of the participants

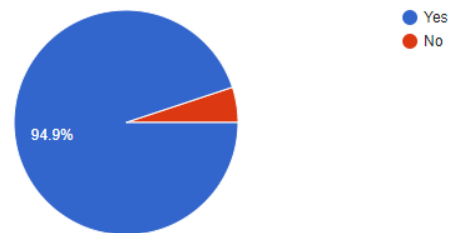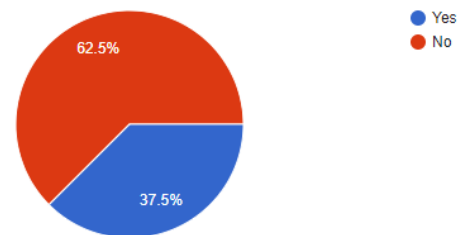**Figure 3: Participants attended an online lecture**

Figure 5: Response of question regarding replacement of tradition lecture by online lecture
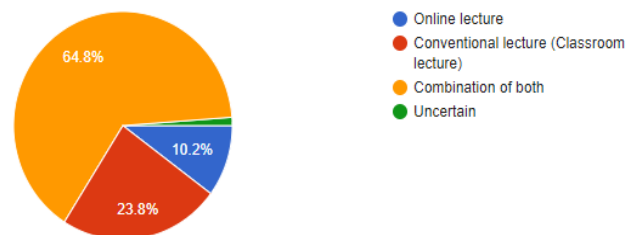

Figure 6: Response of question regarding the preference of method of learning

Figure 1: Gender of the participants

DISCUSSION

Digital technology always has the potential to boost education, but it had not been used to its full potential in dental education in our country.[5] The unprecedented measures and strict enforcement of lockdown during the COVID-19 pandemic led to the closure of all the colleges' throughout the country and forced the dental colleges to use online learning as a tool for education. From this study, we come to know various advantages, disadvantages, and modification that is needed to bring out in online lectures. The growing popularity of this technology-based learning and its importance in the post-COVID-19 era when all dental colleges will reopen in full form was obvious from this study.

The majority of students and staff have attended and presented lectures during the COVID-19 pandemic lockdown and the majority of them found operating online platforms easy to operate. They found it a very effective means of sharing knowledge, especially in such pandemic times. It allows learning from the best faculties throughout the world is one of the major advantages considered by the majority of participants. It also has various other advantages like, on these digital platforms students and practitioners can interact and share their knowledge and experience with their co-learners and juniors. Recorded lectures are good for revision purposes. Recorded lectures can be heard anytime and anywhere feasible. It also helps to continue our education and learning by maintaining social distancing in such pandemic times. It saves traveling time and cost for students and staff and is also cost-effective for dental colleges.

There are also difficulties faced by the students and staffs during online lectures and the majority of participants considered technical problems, internet data cost, Smartphone or computer requirement, student faking their attendance, hacking of personal information, easy distraction, privacy concerns, unconducive home environment to study, teachers and students lacking skills as its disadvantages.

To tackle these problems students and staff wanted some modifications to be carried out like a short break should be included in between the long-duration online lectures for their mind refreshment. The teachers should a specific day or probably a weekend for doubt solving and discussion among the students of the same year and department. The lecturer should conduct a short test of objective type question after completion of a particular topic or session, which would help in assessing the quality of learning by the students and would point out the key concepts about the session. They also wanted that online lectures should be followed by a live demonstration on the patients the next day, which would further clarify the concepts and knowledge. A special online platform should be created by our government for all the dental students of our country on which best faculties throughout the country will give lectures. Renowned international lecturers should also be invited on this platform to deliver lectures. This will help the student to not only rely on their college teachers but also help them to receive the best education possible anywhere in the world sitting at their home. Government should also provide some financial assistance to very poor students especially in the rural areas in buying smart phones or computers. An innovative and effective solution for unstable internet connectivity would be the development of e-learning software that functions smoothly even at low bandwidths.[10]

Even though e-learning has various advantages but the majority of participants were neutral about the decision to replacement of traditional lectures with online lectures. They preferred the combination of traditional and online lectures as the method of teaching in dental colleges.

This onset of the pandemic has brought to light various difficulties faced in academic fields and possible changes that needed to be brought out in the method of teaching in both medical and dental fields while facing such calamity. Online learning should be imbibed in the future curriculum of learning. The problems faced by both the learners and the faculty should be kept in mind to plan e-lectures where the drawbacks can be limited and will be of maximum benefit for students.

CONCLUSION

Students are equally inclined toward traditional teaching and online teaching. Government, administration, and faculty members should take necessary measures for improving online teaching

quality to help with better learning of students and making it a part of the future curriculum. We should be well prepared for any similar calamities or pandemics like COVID-19 in the future and take necessary steps so that education does not suffer.

REFERENCE

1. Turkyilmaz I, Hariri NH, Jahangiri L. Student's Perception of the Impact of E-learning on Dental Education. J. Contemp. Dent. Pract. 2019 May 1;20:616-21.
2. Vitoria L, Mislinawati M, Nurmasyitah N. Students' perceptions on the implementation of e-learning: Helpful or unhelpful? J Physics Conf Ser 2018; 1088:012058.
3. Dhawan S. Online learning: A panacea in the time of COVID-19 crisis. Journal of Educational Technology Systems 2020; 49:5-22.
4. Chang TY, Hong G, Paganelli C, Phantumvanit P, Chang WJ, Shieh YS, et al. Innovation of dental education during COVID-19 pandemic. J Dent Sci 2021;16:15-20.
5. Samra RK, Nirola A, Verma A, Nagpal A, Thakur M. Dental students' Perception on the impact of E-learning in continuing dental education during the current pandemic scenario. Indian J Dent Sci 2021;13:61-72.
6. Alfraih M, Alanezi S. Accounting students' perceptions of effective faculty attributes. J Int Educ Bus 2016; 9:123-42.
7. AlsabawyA, Cater-SteelA, Soar J. Determinants of perceived usefulness of e-learning systems. Comput Hum Behav 2016; 64:843-58.
8. Arasaratnam SL, Northcote M. Community in online higher education: Challenges and opportunities. Electron J Elearn 2017; 15:188-98.
9. Schmitt U. Redefining knowledge management education with the support of personal knowledge management devices. In: Smart Education and E-Learning. Cham: Springer; 2016. p. 515-25.
10. Rotas EE, Cahapay MB. Difficulties in Remote Learning: Voices of Philippine University Students in the Wake of COVID-19 Crisis. Asian Journal of Distance Education 2020; 15:147-58.