

“Break The Chain” to Embrace New Possibilities in Dental Education

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Abstract

COVID-19 is enforcing all professions to make decisions to alter their routine traditional method of patientcare converted into telemedicine treatment to all patient except emergency cases. Even, dental teaching to students also updated with online teaching as well as exams are being converted into typodonts based assessment and the Dental Licensure Objective Structured Clinical Exam (DL-OSCE). It is high time for all of us to upgrade in electronic mode education through apps. One silver lining from the current pandemic situation thought us, we can move toward a more modern and ethical approach to dental licensure.

Keywords: Dental Education, COVID -19, problems and solutions, E- learning, Dental Licensure

Introduction

Dental institutions all over the world are reeling from the consequences of the novel SARS-Co V2 corona virus. As a dentist, we always treat the patients with precautions to prevent infection spread through aerosol transmission, but we are now grappling with the unknown facts regarding COVID-19. Ways to educate students and treat patients during the pandemic of this era has to be ruled out. Hence, this paper will be dealing with the difficulties faced by students, faculties of the education institutions and patients, during the current pandemic. There are few solutions and infection control remedies to tackle the situation to persuade dental education and practice/emergency treatment. We will also discuss on boons and banes of both e-learning and patient treatment. ¹

Students Dilemma

The lockdown enforced sudden shutdown of all colleges and therefore, students had to move to their hometown despite the interstate and inter-district travel restrictions. The situation made increased anxiety among students and their parents to a greater extent. Many students could not carry all their text books and reading material to their native place. There was a lot of miscommunication issues between college authority and students was arose great extent at that time concern.

Post-graduates had to stop many ongoing research writing or studies or work. Ongoing exams came to temporary halt and postponed time table was not made. Some of them especially who completed their course could not move out of institution since paper works got pending. Some of post graduate students cannot participate front line health defence nor can they persuade their further studies like PhD.

In few colleges, house surgeons were asked to complete their paper works and leave although their postings were not end. This will reduce the quality of the work and knowledge of that particular batch because internship students get to practice with true sense of learning. But few students made them to complete their quota in urgency during pandemic disease. Therefore,

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there was a loss of experience and knowledge sharing or learning during internship.

Among undergraduate students, the remain topics were incomplete and it was a greater issue for all the students to adapt to the new way of teaching through online. There were incomplete clinical/practical postings which created chaos among students. Final year students did not learn completely how to handle patients and treat the patients in few departments. But now, it was a greater challenge to students how to handle patients after such a long break or during normal working time. Lack of clarity in case of final years examination time table which is increasing the stress among students.²

Way to solve students' issues by various solution:

- First and foremost, the communication between college authorities and students should be increase. More discussions is required between teachers and students through group calls or chats which will help to know the problems faced by students and solution for it

- There should be continuous student counselling sessions can be given for those students who need help.

- The study materials or the preferred textbooks can be made available in PDF format in the online website of the colleges, so that those students who do not have their texts can easily learn using them.

- Postgraduates or interns who have completed their paperwork through online and given their e-certificates, which can be downloaded and printed by the students themselves so that if not in college they can try to work or persuade their studies being in their hometown.

- Interns who would like to complete their postings shall be given in a crash period in those departments where they want to work with all precaution of infection control measures after the reopening of institutions.

- Conduct of theory exams through online using apps like WebEx, Google meet, zoom etc. to monitor the students while writing down their answers in an A4 sheet. Later, student should scan the answers sheet and submit for correction.

- The Clinical practical exams for final year students are kept pending and viva can be conducted using

the above-mentioned apps. The non-clinical practical exams can be conduct through these applications by giving a case scenario/ Images of slide or object to the student, who can then write a case history or identify with drawing and later scan it to submit for evaluation.

- Students who needs to improve their marks can always apply for a re-examination once colleges reopen.

Faculties/ Dentists Dilemma:

First and foremost, teaching and non-teaching faculties of the institution and local practitioners are more prone to infection from direct contact with COVID-19 patients. The teaching providers subsequently break off from their daily face-to-face teaching, hands-on laboratory training, and clinical training under supervision. Online teaching platform for teaching faculties was made struggle to learn new mode of teaching and also confused to how well the students are understanding or learning through online teaching platforms. Since many ages, all teaching methodologies were requiring direct interaction with the students but this pandemic situation was made no longer valid.²

The number of patients has reduced immensely in both colleges and in their private clinics. All patients should be treated with infection control safety measures. Children may be too un-cooperative or anxious to accept dental treatment due to doctors wearing a PPE kit. This has caused financial issues and high cost of maintenance in both colleges and clinics. Treating Covid-high risk patients [old people, children etc.] and then getting back home, is a concern as there are high chance of spread of infection to the rest of family members.^{2,3}

Patients Dilemma:

Most of the dental institution and clinics are only dealing with emergency cases during this situation and the patients who need treatment doesn't know how to categories their issues into emergency or normal. On the other hand, patients who have serious dental problems are afraid to get treatment from any clinics/ hospitals on threat of COVID-19, these make still worsen the issues and gets more complicated. Few patients who need monthly check-up are facing difficulty to visit the hospitals due to various restrictions on roads and their areas. Children are scared to get treatment by doctors

due to wearing of personal protective equipment (PPE kit).³ Community camps for dental treatment have no options to organized during this period. Economically backward communities might not be able to pay for dental treatment and is left with no option for treatment.⁴

Much of the information and communication are available through social media which make people to undergo stress and other psychological problems. But older individuals may not have access to a smart phone or computer/iPad and they are most vulnerable to the situation which needs extra care.³

Way to solve patient and faculty/ dentists’ issues by various solution:

We should be thought about patient safety as well as practitioners/clinician before handling of patient for any treatment.¹

- Staffs should be given training about online teaching through online applications and utilize more safety measures to treat patients and to educate students as well patients.

- Faculty should conduct regular online meetings to reprioritize goals, reorganize course materials, and obtain training on remote teaching.

- Special considerations should be given for female faculty/staffs with young children at home due to higher risk for COVID-19

- To reduce the risk of spread of COVID-19, online pre-booking for consultation should be made compulsory with a minimal number of appointments. So, it reduces the exposure to viral load for the clinician.

- Appointment for patient should be given exact time for their treatment which reduces the flow of patient and their contact with other patients in hospitals.

- Domiciliary care shall be given for cases that require less attention and consultation through telecommunication can also help.

- Less invasive techniques like use of excavators to remove caries, hand scaling, etc. can be used which produces aerosol production.

- Patients who call up for nonemergency treatment should be educated and can prescribe telemedicine through telecommunication.

The following sign and symptoms of cases are broadly classified as dental emergency/ urgent care/ routine care:¹

Dental emergency	Urgent care	Routine/ Non routine care
<ul style="list-style-type: none"> · Uncontrolled bleeding · Cellulitis or diffuse soft tissue bacterial infection with extraoral or intraoral swelling · Trauma involving facial bone 	<ul style="list-style-type: none"> · Severe dental pain from pulpal inflammation · Pericoronitis · Surgical postoperative osteitis or dry socket · Abscess · Tooth fracture · Dental trauma with avulsion/ luxation · Restoration lost or extensive caries denture adjustment or orthodontic wire adjustment 	<ul style="list-style-type: none"> · Initial or periodic oral examination · Routine dental cleaning and preventive therapies · Orthodontic procedure · Extraction with asymptomatic teeth · Restorative dentistry · Aesthetic dental procedure

“E-LEARNING” AN INNEVITABLE FUTURE

Internet is a powerful resource for reaching millions of people in different geographical regions of the world and serves as an engine to continue education, research,

and treatment.²

In an era of mandatory continuing professional development, the possibility of using new technologies has to be considered and evaluated carefully. Such new

technologies offer the potential for enhancing learning and delivering education in a more convenient and cost-effective manner. Although dentistry is a very handy profession the current pandemic has shown us that we need to improve on technologies for continuation of our education and treatment.³

Potential of Adding An “E” to Learning Process

Improvement in hand-eye coordination, fine motor skills, and reflective skills for the students, is particularly proven in the very early stages of skill acquisition and leads to a conservative preparation approach and better retention of skills. It can therefore be suggested that VR (virtual reality) simulation technology is a valuable resource to traditional dental training methods to be considered during the COVID-19 pandemic to enable distance learning. Web-based learning platforms like zoom, WebEx, google meet etc. enable classes through video conferencing, and allows insertion of videos for better understanding.⁵ Problem-Based Learning (PBL) designed for e learning demands a high level of communication and interaction among students.^{2,5}

ADVANTAGES OF E-LEARNING

From current scenario its evident that technology is very important in dental education. It enables to widen participation, extend possibilities, innovation, and modernization. It increases the level of understanding in students through attractive videos and with the latest 3D imaging with virtual reality-based classes. Its cost efficient and research suggests that technology-mediated learning environments may improve students’ achievement, their attitudes toward learning, and their evaluation of the learning experience. It enhances the self-learning capacity of students. Also, it increases the attendance percentage since students can access it from any part of the world.

DRAWBACKS OF E-LEARNING

From the current methodologies followed its very difficult to incorporate e-learning to all parts of our country since many might not adapt, or some might find it difficult to learn how to use these technologies.⁶

· Technology can never replace face- face learning experiences, it can just aid education.

· Distraction is a major disadvantage of e-learning. While classes are happening students might get notifications or messages that distract their attention.

· Although different clinical dental care stimulators have been developed and yielded satisfying results, they are scarce in educational institutions, some might not be portable and might not incorporate all areas of dentistry.

· It can reduce the communication skills of students in public as well.

LOOKING TO THE FUTURE

Education is evolving day by day. For the complex learning process, the 21st century skills using technology is inevitable. Abundance of information and significant changes brought about by technology is needed. There is a paradigm shift from e-learning being seen as a narrow set of isolated learning activities, unsuitable for many learners and many learning situations, to a new vision of e-learning as a 35-broad approach to learning in the digital age, encompassing rich and dynamic possibilities, engaging learners and looking to the future.

The “e” in learning will remain for many years to come and to play a significant role as dental educators the need to adapt the changes are essential. In a world that values for time and money technology plays an inevitable role.^{5,7}

Conclusion

The COVID-19 outbreaks make providing clinical dentistry and education within the field a herculean task. However, dental educators now have the capabilities and technologies to modernize their approaches of teaching by adopting new digital concepts to amplify communication online. For a country to develop, education is the treasure path, and hence improving education is the key to development.

From the current pandemic situation, we need to understood the limitations that we have in our system, and this situation may once again happen. Hence, we need to change our methods to be useful in all kind of situations.

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