

# Making of a “dental surgeon” in COVID-19 pandemic; a qualitative study exploring undergraduate dental students perspective

Gulmina Saeed Orakzai<sup>1</sup>, Munazza Gillani<sup>2</sup>, Eruj Shuja<sup>3</sup>, Anum Ashfaq<sup>4</sup>, Rohina Ali<sup>5</sup>, Sana Iqbal<sup>6</sup>

<sup>1</sup> Head of Department, Department of Oral Pathology, Watim Dental College, Rawalpindi.

<sup>2</sup> Assistant Professor, Department of Oral Pathology, Abbottabad International Medical & Dental College, Abbottabad.

<sup>3</sup> Assistant Professor, Department of Oral and Maxillofacial Surgery, Watim Dental College, Rawalpindi.

<sup>4</sup> Senior Lecturer, Department of Community Dentistry, Watim Dental College, Rawalpindi.

<sup>5</sup> Assistant Professor, Department of Community Dentistry, Watim Dental College, Rawalpindi.

<sup>6</sup> Demonstrator, Department of Pharmacology, Watim Dental College, Rawalpindi.

## Author's Contribution

<sup>1</sup> Conception of study

<sup>1,2</sup> Experimentation/Study conduction

<sup>1,3</sup> Analysis/Interpretation/Discussion

<sup>1,2,3,6</sup> Manuscript Writing

<sup>2,4,5,6</sup> Critical Review

<sup>4,5,6</sup> Facilitation and Material analysis

## Corresponding Author

Dr. Gulmina Saeed Orakzai

Head of Department,

Department of Oral Pathology,

Watim Dental College,

Rawalpindi.

Email: [gulmina\\_saeed@yahoo.com](mailto:gulmina_saeed@yahoo.com)

## Article Processing

Received: 13/03/2021

Accepted: 19/04/2021

**Cite this Article:** Orakzai, G.S., Gillani, M., Shuja, E., Ashfaq, A., Ali, R., Sana, I. Making of a “dental surgeon” in COVID-19 pandemic; a qualitative study exploring undergraduate dental students perspective. *Journal of Rawalpindi Medical College*. 31 Aug. 2021; 25 COVID-19 Supplement-1, 29-33. DOI: <https://doi.org/10.37939/jrmc.v25i1.1608>

**Conflict of Interest:** Nil

**Funding Source:** Nil

**Access Online:**



## Abstract

**Objective::** The closure of educational institutes in Pakistan due to the COVID-19 pandemic resulted in a spontaneous shift from traditional to digital teaching and learning. The present study explores the perception of undergraduate dental students regarding its advantages and limitations.

**Materials and Methods:** This qualitative study was conducted from December 2020 to February 2021. Utilizing a non-probability sampling technique 12 students from three dental colleges of Rawalpindi participated in the study. Three focus group interviews, each with four students were carried out. Data were transcribed verbatim and thematic analysis was done.

**Result:** The advantages include becoming a self-directed learner, ease, and accessibility. The online teaching was perceived well and participants agreed it saved their time and enhanced time utility. However, the challenges included technical issues, behavioral issues, and learning compromised clinical skills. Students in their preclinical years were more satisfied with online teaching as compared to those in their clinical years.

**Conclusion:** The present study supports the use of online teaching and learning. This mode of teaching allowed the continuation of medical and dental education during these uncertain times. Hence rigorous effects are made to maximize the promising potential benefits of online teaching. Reevaluating the dental curriculum, by incorporating online teaching within traditional dental education will strengthen the curricula and enable the future dentist to have an impact in the community.

**Keywords:** COVID-19, Dental education, Dental students, Online teaching, Undergraduate.

## Introduction

It was the 11<sup>th</sup> of March when the World Health Organization declared the novel coronavirus (COVID-19) outbreak as a global pandemic. The world came to a standstill. Countries worldwide went into lockdown, disrupting daily activities, adopting social distancing policies, and implementing work-from-home strategies. This global lockdown had overwhelming effects on medical and dental education globally and Pakistan is no exception.<sup>1,2</sup>

In the present times, the online mode of teaching and learning has become a feasible academic alternative to classroom teaching. The dental curriculum in Pakistan equips a dental surgeon with a wide range of professional attributes, sound scientific theoretical knowledge, and exemplary clinical skills. However, this complex dental curriculum goes through constant renewal, revision, and up-gradation.<sup>3,4</sup> Although online learning provides an enormous opportunity in improving teaching dynamics still dental colleges find incorporating theoretical and clinical components into an online format very challenging. Another challenge for the dental school's administration is finding the right balance such as safeguarding the health of students, dental faculty, and patients, and at the same time adapting to local and national policies and ensuring continuity in students' education.<sup>5,6</sup>

A flipped classroom model has been widely adopted by many dental institutions, using either synchronous technology allowing live interaction between student and teacher or asynchronous using recorded videos, etc. Presently medical and dental institutions in Pakistan are using Microsoft Teams, Zoom, Google classroom, Moodle, and Endmodo as online learning management systems.<sup>7,8</sup>

Online teaching was almost unheard of before the pandemic in many Pakistan educational institutes. The dental institutes were faced with the enormous task of establishing an online teaching forum to replace the traditional face-to-face teaching system. Successfully converting a dental curriculum to being equally efficacious as conventional learning was no less than a challenge. Since students are the main stakeholders, their perception of virtual learning can help evaluate the success of an online teaching program.<sup>3,9</sup> Both local and international data in this regard have reported diverse student responses, such as complete acceptance to absolute dissatisfaction. The concept of blended learning can allow students to get the best out of these e-learning modules and help them become self-directed learners.<sup>1,10</sup>

During these uncertain times where online teaching is becoming a norm, it has become crucial to assess the effectiveness of online learning. Therefore, this study explores the perception of students with regards to the advantages, highlighting the challenges and recommendations for e-learning in Dental education. This study will help the Government to take more practical measures on a priority basis to ensure the smooth functioning of dental institutions.

## Materials and Methods

This study was conducted at 3 dental colleges, one public and two private at Rawalpindi from December 2020 to February 2021. Ethical approval was taken from the college ethical review board. Utilizing a non-probability sampling technique 12 students participated in the study. Students from all these colleges, actively using online teaching modalities such as "Zoom" and "Microsoft Teams" with vigorous online assessments during the COVID-19 pandemic were included in the study.

A comprehensive interview guide was developed taking into consideration the systematic approach using AMEE Guide No. 87 to take student's perspectives on online teaching.<sup>13</sup> The interview guide was validated by three medical educationists and piloted to check for adequate item variance, validity, and reliability. Focus group interview (n=4 in each group) from students from both basic sciences years (1st and 2nd year) and clinical years (3rd and final year) was conducted using Zoom and later transcribed verbatim. The data were thematically analyzed.

## Results

A total of 12 dental students were selected after applying the inclusion criteria. The respondents' demographic information is given in Table 1.

A total of 3 themes one for advantages and three for limitations were extrapolated from the transcribed data after qualitative analysis.

**Table 1: Demographics of study participants**

<i>Respondent</i>	<i>Age</i>	<i>Gender</i>	<i>Academic year</i>	<i>Institute</i>
1.	19	female	1 <sup>st</sup> year	Watim Dental College
2.	22	female	2 <sup>nd</sup> year	Watim Dental College

3.	23	male	3 <sup>rd</sup> year	Watim Dental College
4.	24	female	Final year	Watim Dental College
5.	18	male	1 <sup>st</sup> year	AFID
6.	20	male	2 <sup>nd</sup> year	AFID
7.	22	female	3 <sup>rd</sup> year	AFID
8.	23	female	Final year	AFID
9.	19	male	1 <sup>st</sup> year	MIHS
10.	23	female	2 <sup>nd</sup> year	MIHS
11.	23	female	3 <sup>rd</sup> year	MIHS
12.	24	female	Final year	MIHS

\*AFID (Armed Forces Institute of Dentistry) MIHS (Margalla Institute of Health Sciences)

#### Advantages:

Few excerpts from the interviews have been selected to explain the themes derived.

#### Self-directed adult learner:

Online teaching was preferred by some students as they were able to continue their education in these unprecedented times of a pandemic. Not just that online teaching modalities helped them stay connected to their friends and teachers, overcome social isolation and anxiety. Online teaching is flexible, saves time and money spent in travelling, and helps students learn at their own pace.

*"I was able to continue my studies in Gilgit, I became a more confident student I could easily ask questions in online classes as compared to our usual face-to-face classes. It also helped break the monotonous routine of the pandemic"*

*"I was very satisfied with this new method, I always found it hard to get ready and travel long distances to get to college, but now I was able to learn better in a relaxed environment of my home. Pharmacology, dental materials and pathology never seemed so easy to grasp".*

*"Lectures were well prepared by our teachers, so we understood well. However, the dental procedures like giving local anesthesia taught through online is not easy to learn."*

#### Limitations:

The dental students identified barriers and challenges of knowledge acquisition through online teaching. Experiences of students from basic and clinical years also differed. They are discussed under three themes:

#### Technical issues:

*"I would get really exhausted, as there were many lectures scheduled per day. After lockdown I had to go back to my village in remote area of Punjab, there were prolonged power outages and internet speed issues as I mostly relied on mobile data. This was a big setback for me as I would sometimes miss the whole day of online classes"*

*"Some teachers were not comfortable with online teaching also as they left many of my queries unanswered and it was difficult for me to follow along. Not only students the faculty also faced technical issues, like slow internet speed and software problems."*

*"If the mikes of students were kept unmuted, there would be too much noise, if all kept muted it didn't give an impression of classroom. Some teachers didn't use others tools of software to enhance our learning".*

#### Behavioral issues:

*"I have always studied in group with my class fellows, it was very difficult for me to find an appropriate place at home for my online classes and study in isolation"*

*"Online learning has made me a very lazy learner and a procrastinator, I am not liking much this mode of teaching, if it continues it will badly effect my performance."*

*"There was no eye contact, I missed the physical presence of my instructors as it was more of listening to some YouTube videos"*

#### Learning compromised Clinical skills:

The students gave a mixed response, the basic years i.e. 1<sup>st</sup> and 2<sup>nd</sup> year dental students were more satisfied with the online teaching whereas the clinical years such as 3<sup>rd</sup> and final year BDS had major concerns when it came to learning clinical skills.

*"I was not happy with the online learning, especially when learning clinical skills like giving local anesthesia intra-orally and tooth extraction. Our teacher would share very good videos but it wasn't easy to learn a skill unless you perform it practically."*

*"I had attended half of my clinical rotations before lockdown and I could confidently say online was no match to the actual learning in clinical set up. It might go well for theory but not for learning clinical skills".*

## Discussion

This qualitative study explored the undergraduate dental students' perspectives regarding online teaching during the COVID-19 pandemic. Online mode of teaching is not a routinely practiced teaching modality in medical and dental institutions of Pakistan. The study showed that online teaching is an effective and flexible mode of teaching. Students can master the content in less time as compared to face-to-face learning. It helped them to become active self-directed learners, empowering them to cater to their educational needs constructively. This has been observed in other studies as well.<sup>7,14</sup>

Online teaching provided an opportunity for the students to use time more productively. Students were satisfied despite the unusual times; they were able to spend quality time with their families. Nonetheless,

few students found managing their time in their home routine a little challenging. In this study overall, the student seemed satisfied with online teaching modalities which were consistent with the work done in Saudi Arabia.<sup>1</sup>

In addition to that, it was observed that the practical utility of online teaching was dependent on the particular subject being taught. Preclinical students showed higher satisfaction as compared to clinical students. Interacting with a live patient in the practice of medicine and dentistry is of utmost importance. However upgrading virtual simulation technologies and use phantom heads, computer-based models can all provide controlled safe learning opportunities for students. Also sharing recorded videos of clinical skills demonstration and laboratory procedures can be of help in online teaching.<sup>1</sup>

Online teaching was a great help in lockdown but cannot replace completely the in-person live teaching. The study participants came across many barriers such as technical deficiencies, unavailability of the internet, power outages, and lack of basic computer skills of teachers and students. The themes in our study complemented various other studies.<sup>1,7</sup> Higher education Commission (HEC) of Pakistan has given a six-point preparedness agenda, therefore the high-yielding technological use in medical and dental education depends primarily on faculty, technology, and university readiness. Therefore training faculty is in this skill demands commitment and devotion. It has become evident now that faculty training in educational technology should be catered for on a priority basis for the enhancement of medical universities. The Government of Pakistan should take measures to ensure the availability of the internet across the country.<sup>3</sup>

The students also pointed out their shortcomings, their readiness for online learning, their learning styles, and engagement level during online classes.<sup>7</sup> Collaborative efforts of all departments and stakeholders can formulate a well-regulated and efficient system, which will enable the implementation of structured methodologies by faculty in online teaching.

The students "missed being in class", the non-verbal communication such as eye contact, gestures, and postures was a missing link in online teaching. According to research non-verbal communication convey messages beyond real meanings and helps student develop a better understanding.<sup>16</sup>

The present times have timely pointed out the advantages and limitations of online teaching facilities in dental colleges worldwide. We cannot circumvent

the hard stuff we can't go over it, we can't go under it, we have to go through it, and therefore the current pandemic situation calls for harmonized, collective and collaborative efforts for formulating effective policies for online pedagogy approach. Pakistan's education system was not prepared for online teaching, however many colleges and faculty made tremendous efforts to continue the education despite the odds.

## Conclusion

The present study supports online teaching and learning in various dental colleges. However, where it is well perceived as being the promoter of student-centered learning, flexible approach, and ease of delivery it has some shortcomings as well. It is worth mentioning that E-learning in Pakistan is its budding stage even then considerable efforts have been made to regulate online teaching and give maximum benefits to the students. It only started as an emergency way of remote learning but with consistent efforts and investment, the limitations can be overcome. Dental colleges should re-evaluate and reprioritize the protocols, invest in technology to improve learning psychomotor skills. Incorporating online teaching within traditional dental education will strengthen the curricula and enable the future dentist to have an impact in the community and play their role in such a crisis. Catering for the technical issues, working on students' behavioral traits, managing college teaching methodologies barriers, and training faculty on the use of online teaching modalities we can develop an effective online teaching platform for the students.

## Limitations

Participants were from the 3 dental colleges of Rawalpindi, hence the findings of the study cannot be generalized. Such study should be conducted across the country. Several themes and sub-themes emerged, however, there must be other potential strengths and weaknesses which the authors are well aware of.

## References

1. Khalil R, Mansour AE, Fadda WA, Almisnid K, Aldamegh M, Al-Nafeesah A, et al. The sudden transition to synchronized online learning during the COVID-19 pandemic in Saudi Arabia: a qualitative study exploring medical students' perspectives. *BMC medical education*. 2020;20(1):1-10.

2. Dost S, Hossain A, Shehab M, Abdelwahed A, Al-Nusair L. Perceptions of medical students towards online teaching during the COVID-19 pandemic: a national cross-sectional survey of 2721 UK medical students. *BMJ open*. 2020;10(11):e042378.
3. Sarwar H, Akhtar H, Naeem MM, Khan JA, Waraich K, Shabbir S, et al. Self-reported effectiveness of e-Learning classes during COVID-19 pandemic: A nation-wide survey of Pakistani undergraduate dentistry students. *European Journal of Dentistry*. 2020.
4. Meng L, Hua F, Bian Z. Coronavirus disease 2019 (COVID-19): emerging and future challenges for dental and oral medicine. *Journal of dental research*. 2020;99(5):481-7.
5. Iyer P, Aziz K, Ojcius DM. Impact of COVID-19 on dental education in the United States. *Journal of dental education*. 2020;84(6):718-22.
6. Iqbal S, Shafiq A, Iqbal N. Perceptions of undergraduate dental students towards e-Learning in Lahore Medical and Dental College. *Pak J Med Heal Sci*. 2016;10(4):1191-3.
7. 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.
8. Williams DE. The future of medical education: flipping the classroom and education technology. *Ochsner Journal*; 2016.
9. Schwartz AM, Wilson JM, Boden SD, Moore Jr TJ, Bradbury Jr TL, Fletcher ND. Managing resident workforce and education during the COVID-19 pandemic: evolving strategies and lessons learned. *JBJS Open Access*. 2020;5(2).
10. Tanveer M, Bhaumik A, Hassan S, Ul Haq I. Covid-19 pandemic, outbreak educational sector and students online learning in Saudi Arabia. *Journal of Entrepreneurship Education*. 2020;23(3):1-14.
11. Dyrbye L, Cumyn A, Day H, Heflin M. A qualitative study of physicians' experiences with online learning in a masters degree program: Benefits, challenges, and proposed solutions. *Medical teacher*. 2009;31(2):e40-e6.
12. Bradbury NA. Attention span during lectures: 8 seconds, 10 minutes, or more? *Advances in physiology education*. 2016;40(4):509-13.
13. Artino Jr AR, La Rochelle JS, Dezee KJ, Gehlbach H. Developing questionnaires for educational research: AMEE Guide No. 87. *Medical teacher*. 2014;36(6):463-74.
14. Sethi A, Wajid A, Khan A. eLEARNING. *The Professional Medical Journal*. 2019;26(04):632-8.
15. Wu DT, Wu KY, Nguyen TT, Tran SD. The impact of COVID-19 on dental education in North America—Where do we go next? *European Journal of Dental Education*. 2020;24(4):825-7.
16. Manusov V. A history of research on nonverbal communication: Our divergent pasts and their contemporary legacies. 2016.
17. Kim K-J, Jang HW. Changes in medical students' motivation and self-regulated learning: a preliminary study. *International journal of medical education*. 2015;6:213.
18. Kiger ME, Varpio L. Thematic analysis of qualitative data: AMEE Guide No. 131. *Medical teacher*. 2020;42(8):846-54.
19. Abbasi S, Ayoob T, Malik A, Memon SI. Perceptions of students regarding E-learning during Covid-19 at a private medical college. *Pakistan Journal of Medical Sciences*. 2020;36(COVID19-S4):S57.
20. Baig QA, Zaidi SJA, Alam BF. Perceptions of dental faculty and students of E-learning and its application in a public sector Dental College in Karachi, Pakistan. *JPMA*. 2019.
21. Suner A, Yilmaz Y, Fişkin B. Mobile learning in dentistry: usage habits, attitudes and perceptions of undergraduate students. *PeerJ*. 2019;7:e7391.
22. Memon AR, Rathore FA. Moodle and Online Learning in Pakistani Medical Universities: An opportunity worth exploring in higher education and research. *J Pak Med Assoc*. 2018;68(7):1076-8.
23. Ahmed MA, Jouhar R, Ahmed N, Adnan S, Aftab M, Zafar MS, et al. Fear and practice modifications among dentists to combat novel coronavirus disease (COVID-19) outbreak. *International journal of environmental research and public health*. 2020;17(8):2821.
24. Keis O, Grab C, Schneider A, Öchsner W. Online or face-to-face instruction? A qualitative study on the electrocardiogram course at the University of Ulm to examine why students choose a particular format. *BMC medical education*. 2017;17(1):1-8.
25. August JN, Boyd LD, Giblin-Scanlon L. Bridging the theory-practice gap with dental hygiene instrumentation videos. *Journal of dental education*. 2018;82(9):961-7.
26. Crawford J, Butler-Henderson K, Rudolph J, Malkawi B, Glowatz M, Burton R, et al. COVID-19: 20 countries' higher education intra-period digital pedagogy responses. *Journal of Applied Learning & Teaching*. 2020;3(1):1-20.