

THE CHALLENGES FACED BY DENTAL STUDENTS IN STUDYING ORAL PATHOLOGY ONLINE DURING COVID-19: A CROSS-SECTIONAL STUDY

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ABSTRACT

OBJECTIVES

The way of practising and teaching dentistry has changed significantly worldwide due to the COVID-19 pandemic, and the impact on dental education should not be neglected. Therefore, sharing experiences about online teaching from in-person education is essential to a better learning process during this period. This study aimed to assess the challenges faced by dental students in studying oral pathology online during covid-19: a cross-sectional study.

METHODOLOGY

It was a descriptive cross-sectional study in the Department of oral pathology at Altamash Institute of dental medicine to assess the challenges students faced during the COVID-19 pandemic. A total of 110 participants were approached, and among them, 105 participants responded. Of 105 participants, 78% were females, and 22% were males. Data were analyzed using SPSS version 23.

RESULTS

Almost 93.3% of the students felt in-person lectures are more effective than online lectures. Fourth-year students showed higher satisfaction with the number of online tutorial / practical classes taken to provide an in-depth view of the subject than 3rd year students (8.8% vs 91.2%, $p=0.045$). Fourth-year students showed significantly higher satisfaction with several online theory classes to provide an in-depth view of the subject than 3rd year students ($p=0.045$).

CONCLUSION

The present study concluded that most students prefer in person classes over virtual learning and face a lack of online interaction with the faculty.

KEYWORDS: Assessment, Covid 19, Pandemic, Oral Pathology, Virtual Learning

INTRODUCTION

The pattern of healthcare systems has been substantially affected in several ways by the emergence of the new Corona Virus called SARS-Cov-2 or COVID-19 in December 2019, later termed a pandemic in March 2020 by WHO.¹ Considerable change has taken place in the delivery and utilization of health care services due to the risk of Covid-19 transmission.² Since the virus spreads mainly through droplets of the mouth or nose during breathing, coughing and sneezing, dental services have been greatly affected. This is mainly due to the proximity of the dental practitioner or student to the patient's mouth.³ The healthcare system has focused on essential preparation to reduce the transmission of COVID-19.⁴ Dental education plays an important role in training and improving the knowledge of healthcare professionals and implementing infection control measures to curb the spread.⁵ The educational process has also been adversely affected in many ways. Due to the advancement of this disease, the World Health Organization (WHO) enforced strict regulations

impacting routines and day-to-day life, including the closure of educational institutions the world over.⁶ since most educational institutions shut down their campuses during the first and the second waves, there was a transition from physical attendance to virtual learning.⁷ In the initial stages of Covid-19, Pakistan and other countries started implementing precautionary measures like social distancing and closure of educational institutions to curb and alleviate the problem. The social distancing concept entails most education providers shifting their teaching online using various learning methods.⁸ this was put into effect. Online learning systems are web-based software for distributing, tracking and administering courses online.⁹ In Pakistan, video conferencing was made possible using online learning management systems such as Microsoft Teams, Google Meet, Zoom and Moodle. They provided features like whiteboards, chat rooms, quizzes, polls, discussion forums and surveys that facilitated teachers and students to connect online and share course content simultaneously.¹⁰ In dentistry, among the students most affected by the pandemic were those in

the third and fourth clinical years, as their learning was stunted due to limited resources. One of the subjects taught in the third year of the Bachelor in Dental Surgery program is Oral and Maxillofacial Pathology. Its speciality focuses on the clinical, radiographic and microscopic diagnosis of pathological conditions affecting the oral and maxillofacial regions. Students are uniquely trained to address the diagnosis and treatment of oral diseases, aiding the rapid critical connection between oral and systemic diseases and combining expertise in histopathological diagnosis with clinical diagnosis and treatment outcomes.¹¹ This links the training of students in basic sciences with application in clinical dentistry. The Oral Pathology department plays a significant role in training them for this unique and diverse field of dentistry. Various advancements have taken place in textbooks, internet research and conferences, but there remains a gap between understanding and interest in the subject among students, partly due to them viewing it as a non-clinical subject and therefore carrying less scope for practice.¹² Like any other department affected by COVID-19, the Oral Pathology department also faced challenges and gained experience transitioning from physical to online education learning systems. Some difficulties met along the way were lack of faculty training in online education learning systems, lapses in internet connection, limited student attendance, gaps in communication, insufficient interaction from students and dubious authenticity of results due to cheating. The present study aims to evaluate and assess the challenges faced by dental students in studying oral pathology online and to take necessary measures to improve the teaching process. It also seeks to bridge the gap between student and teacher to facilitate a conducive learning environment and provide adequate online teaching skills to make students competent graduates, members of the dental fraternity and oral pathologists.

METHODOLOGY

Approval from the ethical review committee was acquired before the commencement of the study (AIDM/ERC/04/2022/03). A descriptive and analytical cross-sectional study was carried out in the department of oral pathology at Altamash Institute of dental medicine, where the prepared questionnaire in the form of closed-ended questions assessing the challenges faced by students during the COVID-19 pandemic was distributed to the students of 3rd and final year of the institute. First, second-year and postgraduate students were excluded from the study. The questionnaire was drafted by consulting similar previously published studies.^{13,14} A total of 105 students formed the study

group. All participants were informed about the nature of the study, and informed consent was taken from them. The students were not obligated to fill out the questionnaire. The questionnaire comprised two segments. The first segment comprised demographic details, and the second consisted of questions focusing on understanding oral pathology theory and practice online. Data were analyzed using SPSS version 23. Frequency and percentage were reported for categorical data like gender, year of study, and challenges faced by the students. Challenges faced by the students were compared with gender and year of study using Chi-square/Fisher exact test. A $p\text{-value} \leq 0.05$ was considered statistically significant.

RESULTS

After increasing the sample size by 10% for non-responders, 110 participants were approached; 105 participants responded and completed the survey. Of 105 participants, 78% were females, and 22% were males. Most of the students from the final year participated in the survey (84.8%), and 15.2% of the students were from 3rd year.

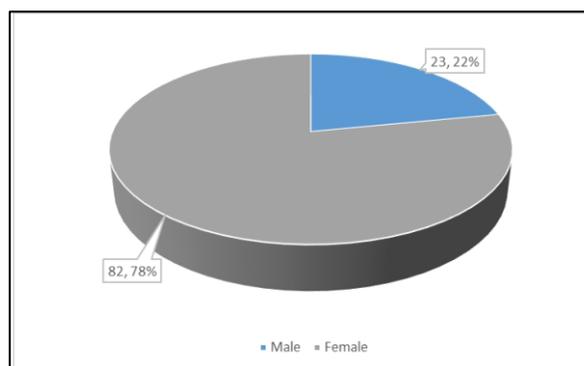


Figure 1: Frequency Distribution of gender

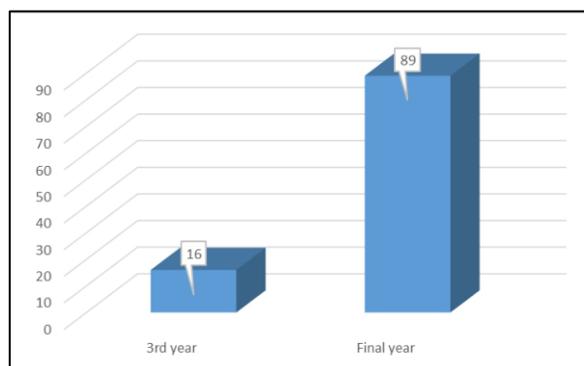


Figure 2: Frequency Distribution of Study Year

Table 1: Challenges Faced by the Students during the COVID-19 Pandemic

Challenges	n (%)
Have you attended all online theory classes in Oral Pathology to date?	72(68.6%)
Do you think the topics covered in online theory classes were difficult to understand?	73(69.5%)
Have you asked your teachers to repeat or explain the topic in case of difficulties/doubts?	84(80%)
Are you satisfied with the number of online theory classes that provide an in-depth view of the subject?	57(54.3%)
Do you think the topics covered in online theory classes sparked your interest and encouraged further reading?	39(37.1%)
Have you attended all online tutorial / practical Oral Pathology classes?	53(50.5%)
Do you read the topic before you see the pictures (clinical, radiographic, and histological)?	74(70.5%)
Are you familiar with all the pictures (clinical, radiographic, histological) shown in online tutorials / practical classes?	66(62.9%)
Do you try to identify the features in the pictures (clinical, radiographic, and histological)?	98(93.3%)
After attending the online tutorial / practical classes, have you faced any difficulty in identifying the pictures (clinical, histological, and radiographic)?	80(76.2%)
Do you use the Oral Pathology Atlas often?	40(38.1%)
Are you satisfied with the number of online tutorial / practical classes taken to provide an in-depth view of the subject?	57(54.3%)
Have you encountered difficulties during the Oral pathology OSPE exam?	67(63.8%)
Is the textbook your primary source of knowledge about the topic?	86(81.9%)
Are you satisfied with the online teaching skills of your Oral Pathology faculty members?	73(69.5%)
Do you feel that there should be more interactive sessions with the faculty members?	94(89.5%)
Do you feel the students should work more hours to increase understanding?	85(81%)
Do you feel in-person lectures are more effective than online lectures?	98(93.3%)

DISCUSSION

The crisis related to the COVID-19 pandemic is ever-growing because it is highly contagious, novel and has psychological effects.¹⁵ Consequently, various countries have taken important steps to control disease transmission. The transmission has impacted the educational process at all levels, including dental education. Dental students face numerous challenges, adversely affecting their education, conduct, teamwork and mental health.¹⁶ Distinct Studies highlight that dental students in a typical setting will face much stress throughout their education, primarily from workload, clinical requirements, assessments and grades.^{17,18} The purpose of our study is to assess the challenges faced by dental students in studying Oral Pathology online. The base of a dental graduate is built upon the knowledge and understanding of pathological diseases at a microscopic level. This makes it imperative that the

students develop an interest in the subject. Our study evaluates challenges encountered by the students attending online Oral Pathology lectures and practicals, the outcome of which is then compared with gender and year of study. The female response percentage was higher than the male (figure 1) since more female students are in the institute. Regarding the year of study, fourth-year students responded more than third-year students (figure 2) because the former experienced greater challenges in learning. They were concerned about applying knowledge from previous years about their clinical skills. One of the challenges of online learning is to grasp the student's attention and hold their interest in understanding the topic. This is less troublesome than the traditional way of teaching. Many teachers believe online education is more time consuming and reduces students' engagement, leading to less favourable academic success than conventional face-to-face instruction (Lederman, 2018).¹⁹ One of the findings of our study regarding student satisfaction with the number of online classes and an in-depth understanding of the topic was that female students were significantly more satisfied than male students ($p=0.034$). The fourth-year students showed significantly higher satisfaction with the number of online theory and practical classes than third-year students ($p=0.045$). This, a related survey indicates that many students think that asynchronous video lectures are a good alternative to traditional lectures. Synchronous lectures on, e.g. Zoom are less desirable among the students. That being said, most students felt in-person lectures were more effective than online lectures ($p=0.035$) and that there should be more interactive sessions with the faculty members.²⁰ This is consistent with the study that shows more students disagree that distance learning offers similar learning compared to a classroom (Amir et al.2020).²¹ As discussed by (Martins et al. 2020), online learning is not the same as transferring the traditional lecture to a web-based platform.²² A major concern during the pandemic was how well the students would perform in their academic examinations. For Oral Pathology, students generally faced difficulty identifying the clinical and histological pictures in the OSPE exam. The outturn of our study shows that after attending the online Oral Pathology lectures and practicals, the female students faced more difficulty identifying pictures (clinical, histological, and radiographic) than the male students ($p=0.013$). They also encountered more problems during Oral Pathology OSPE exams ($p=0.002$). This could be due to an examination of a stress-related factor in females that has an effect on their performance which is compatible with the study that overall performance challenges perceived by females are significantly higher ($p < 0.05$)

than by males (Hammad et al. 2022).²³ Moreover, Mekhemar et al. show that dental students experienced mild anxiety, stress and depression during the pandemic, and women were significantly more affected than men.²⁴ In future, the research could focus on designing effective online lectures and improving the quality and dynamic of online content. Future research could also highlight blended learning rather than online or traditional face-to-face learning. The recommendations from students about improving online education should also be incorporated into future research.

LIMITATIONS

Concerning the limitations of our study, our research represents only dental students at one institute in Karachi. Perspectives from other institutes could help establish a clear picture of the stressors of the COVID-19 pandemic, as perceived by dental students regarding oral pathology. Additionally, a limited number of questions were asked to measure the impact of COVID-19 on students, which could also be considered a limitation. Moreover, the questions of this study relied on a self-administration survey; consequently, the interpretations and analyses may have led to a bias compared to face-to-face interviews.

CONCLUSIONS

The present study discovered that the students were well versed on the whole about Oral Pathology. They encountered difficulties during the Covid-19 pandemic, but those can be handled and overcome considerably if proper measures are taken. Along with the students, faculty members also experienced the effects of the pandemic on their performance, output and teamwork. To remedy this, students and faculty should be aware of the changing trends in teaching. These trends should be incorporated routinely to enhance academic performance.

CONFLICT OF INTEREST: None

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REFERENCES

- Chan HF, Brumpton M, Macintyre A, Arapoc J, Savage DA, Skali A, Stadelmann D, Torgler B. How confidence in health care systems affects mobility and compliance during the COVID-19 pandemic. *PLoS one*. 2020 Oct 15;15(10):e0240644.
- Taylor CB, Fitzsimmons-Craft EE, Graham AK. Digital technology can revolutionize mental health services delivery: The COVID-19 crisis as a catalyst for change. *International Journal of Eating Disorders*. 2020 Jul;53(7):1155-7.
- Shahin SY, Bugshan AS, Almulhim KS, AlSharief MS, Al-Dulaijan YA, Siddiqui I, Al-Qarni FD. Knowledge of dentists, dental auxiliaries, and students regarding the COVID-19 pandemic in Saudi Arabia: a cross-sectional survey. *BMC Oral Health*. 2020 Dec;20(1):1-8.
- Wong J, Goh QY, Tan Z, Lie SA, Tay YC, Ng SY, Soh CR. Preparing for a COVID-19 pandemic: a review of operating room outbreak response measures in a large tertiary hospital in Singapore. *Canadian Journal of Anesthesia/Journal canadien d'anesthésie*. 2020 Jun;67(6):732-45.
- Deery C. The COVID-19 pandemic: implications for dental education. *Evidence-based dentistry*. 2020 Jun;21(2):46-7.
- World Health Organization. Transmission of SARS-CoV-2: implications for infection prevention precautions: scientific brief, 09 July 2020. World Health Organization; 2020.
- Hassan MG. Dental education in the time of COVID-19 pandemic: Challenges and recommendations. *Frontiers in Medicine*. 2021; 8:817.
- Chen E, Kaczmarek K, Ohyama H. Student perceptions of distance learning strategies during COVID-19. *Journal of dental education*. 2020 Jul 19.
- Gupta R, Singh N, Kumar R. Longitudinal predictive validity of emotional intelligence on first year medical students perceived stress. *BMC medical education*. 2017 Dec;17(1):1-6.
- Barbera E, Clarà M. Time in e-Learning Research: A Qualitative Review of the Empirical Consideration of Time in Research into e-learning. *International Scholarly Research Notices*. 2012;2012.
- Ali S, Farooq I, Abdelsalam M, AlHumaid J. Current clinical dental practice guidelines and the financial impact of COVID-19 on dental care providers. *European Journal of Dentistry*. 2020 Dec;14(S 01):S140-5.
- Binmadi NO, Almazrooa SA. The use of oral and maxillofacial pathology services by general pathologists and their attitude towards it in Saudi Arabia. *Saudi Medical Journal*. 2017 Aug;38(8):857.
- Saawarn S, Gupta A, Jain M, Saawarn N, Ashok S, Ashok KP, Jain M, Pardhe N. Assessing difficulties encountered by dental students studying oral pathology and addressing their concerns. *Journal of Clinical and Diagnostic Research: JCDR*. 2016 Nov;10(11):ZC55.
- Latoo SH, Gupta S, Dar MS. Assessment of Dental Students about the Problems Faced in Studying Oral Pathology: A Cross-Sectional Study. *Annals of International Medical and Dental Research*.;5(4):67
- AlHumaid J, Ali S, Farooq I. The psychological effects of the COVID-19 pandemic and coping with them in Saudi Arabia. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2020 Jul;12(5):505.
- Hakami Z, Khanagar SB, Vishwanathaiah S, Hakami A, Bokhari AM, Jabali AH, Alasmari D, Aldrees AM. Psychological impact of the coronavirus disease 2019 (COVID-19) pandemic on dental students: a nationwide study. *Journal of dental education*. 2021 Apr;85(4):494-503.
- Basudan S, Binanzan N, Alhassan A. Depression, anxiety and stress in dental students. *International journal of medical education*. 2017;8:179.
- Pylińska-Dąbrowska D, Starzyńska A, Cudała WJ, Ragin K, Alterio D, Jereczek-Fossa BA. Psychological functioning of patients undergoing oral surgery procedures during the regime related with SARS-CoV-2 pandemic. *Journal of clinical medicine*. 2020 Oct;9(10):3344.
- Lederman D. Conflicted views of technology: A survey of faculty attitudes. *Inside Higher Ed*. 2018.
- Solberg E, Hovdhaugen E, Gulbrandsen M, Scordato L, Svartefoss SM, Eide T. Et akademisk annerledesår: Konsekvenser og håndtering av koronapandemien ved norske universiteter og høyskoler.

21. Amir LR, Tanti I, Maharani DA, Wimardhani YS, Julia V, Sulijaya B, Puspitawati R. Student perspective of classroom and distance learning during COVID-19 pandemic in the undergraduate dental study program Universitas Indonesia. BMC medical education. 2020 Dec;20(1):1-8.
22. Martins MD, Carrard VC, Dos Santos CM, Hugo FN. COVID-19-Are telehealth and tele-education the answers to keep the ball rolling in Dentistry?. Oral diseases. 2020 Jul 2.
23. Hamad HA, Sunni ZA, AlMohsin F, AlMaimouni Y, Khabeer A, Nazir MA, Farooq I. An Assessment of Various Challenges Perceived by Dental Students amidst the COVID-19 Pandemic: A Digital Questionnaire Study. Behavioral Sciences. 2022 Feb 4;12(2):36.
24. Mekhemar M, Attia S, Dörfer C, Conrad J. Dental students in Germany throughout the COVID-19 pandemic: a psychological assessment and cross-sectional survey. Biology. 2021 Jul 1;10(7):611.

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