

Assessing the Obstacles Encountered by Dental College Faculty in Punjab During Online Instructive Sessions

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ABSTRACT

Objectives: This study aimed to assess the challenges faced by faculty of different institutes in Punjab while they were delivering content online during COVID-19.

Materials and Methods: This multicenter cross-sectional study was conducted in different Dental Colleges of Punjab and spanned over 3 months. Ethical approval was sought from ERB at Dental College HITEC-IMS. A validated questionnaire was formed using the FROCT Scale and was checked for its content and face validity. A pilot study was conducted, and reliability was checked using the test re-test method.

Results: The majority of the faculty found it difficult to plan, design, and conduct these online sessions as a mode of information transfer. As low as 38% of faculty members faced no problem related to online teaching. 33% were already familiar with this mode and only 35% more were willing to learn these e-teaching techniques. Internet connectivity, student, engagement, and their response to assignments were found to be major issues.

Conclusion: This study concluded that the faculty of dental colleges in Punjab is neither equipped with the knowledge of e-teaching nor they are ready to adapt to the changes in medical education. COVID-19 has altered the way that we learn and forced us to adjust to these more modern methods. Additionally, to keep up with the world, development, and coordination with the IT sector are now essential.

Keywords: COVID-19 Pandemic, Developing Countries, Distance Education, Emergency Online Teaching

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INTRODUCTION

The COVID-19 pandemic affected the financial, social, and educational activities of more than 200 countries of the world.^{1,2} This health crisis, caused by coronavirus SARS-CoV-2, emerged in late 2019 in China and spread rapidly worldwide profoundly affecting the society and daily life. The constant shift in the global dynamic during the lockdown had a significant impact on the educational sector of third-world countries and compelled teachers and educators to adopt online teaching from a traditional instructional approach.³⁻⁷ The pandemic led to the closure of institutions and the collapse of the educational system.^{2,8-10}

For developed countries this situation was not that bad and challenging as they were running several online courses but for underdeveloped countries like Pakistan resources were not appropriate to run medical program effectively via online platform.^{2,11-13} Medical teachers never thought of educating medical students through an online approach. They lacked the necessary expertise and formal technology training to successfully run an online learning program.^{1,11,14} Although deficient in institutional support for e-learning, various medical institutes were obligated by HEC to adopt this mode during lockdown.² As medical curriculum is quite complex and not only deals with the knowledge component, but also has other outcomes and objectives to serve the community. For this, the medical students must acquire several clinical competencies and skills to be good medical and dental professionals with hands-on experience and patient dealing.¹⁵

Numerous other educational fields are already conducting E-learning programs and their faculty is experienced in online teaching, but this mode is newer for medical and dental colleges.¹ Hence, the faculty encountered difficulties as a result of this abrupt change in tactics because the majority of them lacked knowledge of how to use online programs and applications. Some found it difficult to gain students attention and conduct reliable assessments.³ They also found this mode unsuitable for conducting practical and teaching skills. As a result, a review of online teaching was required to determine the challenges faced by teachers during online teaching and assessment.

Pakistan's medical and dental schools also had a lot of difficulties carrying out efficient online instructions due

to the nation's underdeveloped status.¹⁶ The aim of this study was to assess the readiness of dental college faculty of Punjab to adopt online instructive mode of teaching using the FROCT scale. This evaluation allowed us to identify the problems faced by the faculty and plan strategies for teachers' professional development that could improve instructions in the online environment in dental colleges of Punjab, Pakistan.

MATERIALS AND METHOD

This was an online survey-based cross-sectional, multicenter quantitative study on a validated questionnaire to identify the challenges faced by faculty during online teaching during COVID-19. The Ethical Review Board of Dental College HITEC Institute of Medical Sciences granted ethical approval for this study. (Approval number: Dental/HITEC/IRB/21). Informed consent was obtained from all participants at the start of the study.

A close-ended questionnaire for online assessment evaluation was prepared using the Faculty Readiness for Online Crisis Teaching (FROCT) scale.^{17,18} A 13-item questionnaire was constructed to evaluate the challenges faced by the faculty of medical and dental colleges.⁸ The questionnaire was checked for its face and content validity by experienced medical educationists. A pilot study was conducted on 15 participants to check the feasibility and acceptability of the questionnaire. The test-retest method was administered to check the reliability of the questionnaire.

The questionnaire was prepared on Google Forms and WhatsApp was used for dissemination to the faculty of different dental institutes of Punjab.⁸ Google Docs data was retrieved in Microsoft Excel sheets for further analysis through SPSS version 26. The respondents were selected through a total enumeration technique (census). Selection criteria included group members who were Assistant Professors and above from various medical and dental colleges of Punjab and were involved in conducting online sessions during the COVID-19 pandemic for more than one year. The third criteria were their willingness to participate in the study. We selected this group as they have extensive experience and understanding ability to provide a better insight about the difficulties to respond to this study. Junior faculty and faculty with no experience or less

than one year of online teaching experience were excluded from the study.

RESULTS

Out of 230 total respondents, the response rate was 83%. The majority of the faculty who took part in the study were female (90%). Equal participation of senior and junior faculty was seen. 45% of faculty held CHPE and 7% did MHPE in the past.

When faculty were asked about their experience of planning and ease in designing online sessions, the majority (77% and 58%) answered in negative. Only 38% of faculty members reported that they were able to manage interactions during lectures successfully via online mode of teaching. 61% of the educators reported that they managed to respond whenever students asked

for guidance through online modes but at the same time, they did not feel this exercise comfortable (62%). As low as 33% of instructors were familiar with the online teaching platforms and only 35% were willing to learn these methods along with the online assessment tools. Out of the 230 participants, 66% believed that conducting assessment through online platforms does not provide true insight of students' learning and understanding. 70 % faculty reported that online assessments are difficult to conduct as preparing them is a time-consuming task. Only 20% of educators deemed Internet connectivity questionable but 63% thought students' engagement in online mode was unsatisfactory. 78% of teachers thought students' responses to assignments were unfair.

Table 1: Issues faced by the faculty of medical colleges in conducting successful online teaching

S.No	Questionnaire	Yes (%)	No (%)
1.	Prior experience of an online session	23%	77%
2.	Ease of designing the online interactive session	42%	58%
3.	Easy manageability of interactive learning activities	38%	62%
5.	Comfortability in communicating through online modes	41%	59%
6.	Eager to respond to communication requests from students and colleagues on time.	61%	39%
7.	Familiarity with at least one synchronous online teaching platform.	33%	67%
8.	Willing to use the learning management system or other online assessment tools to evaluate student performance.	35%	65%
9.	Online assessments were difficult and time-consuming	70%	30%
10.	Online assessment gives an insight of students' knowledge	44%	66%
11.	Unsatisfactory Internet connectivity of students	20%	80%
12.	Unsatisfactory students' engagement in online mode	63%	37%
13.	Student's unfair responses to assignments	78%	22%

DISCUSSION

COVID-19 was a unique circumstance that arose out of the blue.¹⁹ To maintain the online education system, Pakistani educational institutions had to incorporate e-learning technology. The pandemic has forced many institutes to shift from traditional face-to-face

instruction to online teaching.²⁰ The beneficial influence of information technology on various aspects of our lives today has massive consequences, and society cannot deny the role of advanced technologies. Its growing popularity and use in the educational sector cannot be dismissed.

When confronted with the new technology, students and instructors may either adopt it or ignore it.²¹ Thus, technical skills can be a barrier making it more difficult for the medical faculty to maintain their digital literacy.

This study adds to the scant body of knowledge on dental teachers' readiness for online learning, particularly in the setting of a low-tech nation like Pakistan. In our literature search, we found a bulk of research literature studying the challenges faced by dental students during the COVID-19 period across Pakistan.²² However, this study highlights the perspectives of the faculty regarding the challenges faced. Therefore, this study forms a basic foundation for future research based on methods to overcome these challenges such as hybrid teaching methodologies and institutional support. This study's multicentric design is one of its advantages. Various institutes of Punjab were included for generalizability.

In our study, a very low percentage of participants were comfortable with using the e-learning management systems. A study also seconds our findings stating that their faculty expressed their concern on lack with of skills of using gadgets during online teaching.²⁶ Our nation is lagging in many aspects of life, one of which is the formation and implementation of medical educational strategies to improve the quality of education and uplift this deteriorating sector.²³ Most studies back this up, citing difficulties caused by a lack of faculty training, internet connectivity, and faculty familiarity with online teaching platforms such as Zoom and Microsoft.^{8,24} A study conducted in Philippines supported the concerns that were expressed by the faculty of our study regarding technology issues.²⁶ Our study revealed faculty disdain for using online evaluation modes to assess student performance. Institutes using primordial modes to assess learning in students are now changing, though at a slow pace. Approx 60% of our faculty faced problems in designing online sessions and managing interactions during the online sessions. A study conducted in Algeria also stated that their faculty found it quite challenging to plan appropriate strategies to keep student engaged during interactive session which supported our finding.²⁴ Similar to this study, our study results also show 63% of our faculty found it challenging to engage students during online teaching.

Our study showed that faculty faced difficulty in

managing time to respond to students request and guidance. Similar findings were reported in a study published by T. Abid et al. stating that their faculty found it difficult to maintain work life balance during online teaching.¹¹

Our 67 % faculty reported that they were not familiar with at least one synchronous online teaching platform that could be a reason for the difficulty they were facing in engaging and assessing student. 59 % of our faculty was uncomfortable in communicating through online modes and 65% was not willing to use the learning management system or other online assessment tools to evaluate student performance. Similar challenges were reported in a study conducted at Ziauddin University stating that their faculty had reservation in using online platform as they were unfamiliar of this online platform of teaching.² Our results showed around 60% to 70% of the faculty does not find online platform appropriate for evaluating students learning as it was difficult to decide which tool is appropriate and preparing online assessment was quite challenging and time-consuming effort for them. A study by Saleh on online assessment also state the same concerns in their study regarding removing dishonesty during assessments and showing requirement of improved innovative strategies that can reflect true insight of students learning.²⁴

One of the challenges faculty reported in our study was unsatisfactory internet connectivity of students. 80% of our faculty faced this connectivity issue while conducting online session. A study conducted Farooq has also reported internet connectivity to be one of the biggest challenges during online teaching in an underdeveloped country like Pakistan.⁸ Another study conducted in Bangladesh showed internet connectivity as a major issue faced by teacher and students for successful conduction of online teaching sessions.⁷

Since the transition to online education, many challenges and barriers have been identified, for students, trainers, and institutions. According to our literature review, one of the key limitations found in the literature is the barriers to maintaining academic integrity during online sessions.²¹ Teachers especially could not maintain the standards of teaching as they normally do in face-to-face sessions.²⁵ To overcome these challenges, various needs and necessities are discussed in the literature, such as the need for innovative medical education after the COVID-19

epidemic. For instance, the use of pedagogical innovations, simulation-based training, and the integration of technology with traditional teaching modalities.¹⁷ Other relevant studies have similar findings regarding justifications for the use of e-learning in medical education.²³ Since teachers currently perceive online learning to be uncomfortable, current literature justifies the need for future research on ways to make it more effective.¹⁶ The COVID-19 pandemic has led to a shake-up in medical school norms that, while disruptive, may expose institutions to cutting-edge teaching and assessment methods that could ultimately enhance medical education in the future. A promising area for further research is how the faculty's impressions of online learning during COVID-19 are influenced by negative psychological elements including stress, worry, and uncertainty.

Pakistani medical educators must get additional training and support to make them more prepared for online instruction to address these issues. This might entail having access to online learning resources and teaching tools, as well as having the chance to interact with other medical educators to exchange best practices and teaching methods. Furthermore, it would be interesting to study how familiarization with e-learning software and the promotion of their regular use may improve teacher's comfort level with e-learning. Limited sample size is not generalizable to a large population therefore a nationwide survey is required. Finally, differences between the faculty with previous MHPE and CHPE can affect the results and can be studied in detail for future studies.

CONCLUSION

Since the transition to online education, there has been observed a sense of discomfort with online teaching in dental institutes. The nature of teaching makes it even more challenging. Moreover, online education was first introduced as "emergency remote learning" and in Pakistan, it is still in its infancy, especially in dental colleges. Faculty needs to be trained on how to use online modalities and create lesson plans with more interactivity and less cognitive strain. A change in culture through improvement in online teaching would not only help with improving the current state of perceived discomfort of teachers with online learning, but also it may increase student engagement.

DISCLAIMER

None.

CONFLICT OF INTEREST

None to declare.

ETHICAL STATEMENT

The Ethical Review Board of Dental College HITEC Institute of Medical Sciences granted ethical approval for this study. (Approval number: Dental/HITEC/IRB/21)

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