

COVID-19's Ripple Effect: Transforming Academic Supervision and Learning for Dental Students



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Abstract

Background: The transition to online learning during the COVID-19 pandemic presented significant challenges for both faculty members and students, particularly affecting academic supervision and student support systems. This study aimed to evaluate students' attitudes toward academic advising, assess its accessibility, and investigate the effects of student support services at King Abdulaziz University's Faculty of Dentistry (KAUFD) during the pandemic. Additionally, the study explored the pandemic's impact on student learning to devise strategies for mitigating future challenges. **Methods:** All students enrolled in the undergraduate dental program at KAUFD during the 2019–2020 academic year were invited to participate in two anonymous electronic surveys. These surveys assessed experiences with academic supervision and e-learning, satisfaction with academic advising and e-learning, availability of technical resources, and the overall impact of the pandemic on learning. The first survey focused on academic supervision (N = 977), while the second surveyed the impact of the COVID crisis on learning (N = 642). **Results:** Students responded positively to their academic advising, showing a preference for using WhatsApp to communicate with their advisors. The survey results indicated that sex, academic year, and grade point

average did not significantly influence opinions on academic advising. However, students reported several effects of the pandemic on their academic experience: 78% felt their academic assessments were affected, two-thirds noted an impact on their psychological state, and about 60% reported that their educational achievement was adversely affected. **Conclusion:** The study identified key factors that students considered important for academic advising and learning during the pandemic. Recommendations for improving the educational environment in future crises include structuring and scheduling examinations thoughtfully, utilizing instant messaging for communication, and leveraging technological advances. These measures could enhance academic support and resilience in the face of future challenges.

Keywords: COVID-19, Academic advising, Student support services, Dental education, Remote learning,

Introduction

The COVID-19 pandemic had a profound impact on healthcare education (Bartik et al., 2020; Miyah, Benjelloun, Lairini, & Lahrichi, 2022; Singer, 2020), prompting rapid uptake of online education. In March 2020, the Saudi government directed all schools and higher education institutions (HEIs) to cease in-person learning and adopt stringent SARS-CoV-2 control measures, while the Ministry of Education (MoE) in Saudi Arabia mandated a shift to online classes to ensure uninterrupted learning (Al-Kahtani, 2022). The impact on educational settings was severe, abruptly changing the ease and dynamics of personal interactions between

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students and staff. In addition to confronting the isolation arising from stay-at-home orders and social distancing mandates, all students had to adapt to this new form of education (Kumar et al., 2021). Educators quickly developed creative teaching approaches while dealing with the technological and other challenges of remote work, such as unreliable internet access and potential disturbances in educational platforms. Despite these challenges, educators continued to provide high-quality healthcare education (Nantwi & Boateng, 2020; Tarkar, 2020).

Healthcare students in medicine, dentistry, and nursing faced unique risks and difficulties during the COVID-19 pandemic. Dental students in particular experienced a high risk of infection due to direct contact with aerosols during intraoral dental procedures (Sood et al., 2022). Beyond their clinical obligations, students faced increased levels of anxiety, depression, and stress (Milošević Marković et al., 2022; Morales-Montoya et al., 2022; Ramachandran, Shayanfar, & Brondani, 2023) related to the challenges of online education, the isolation of stay-at-home restrictions, and uncertainties concerning clinical training (Tonkaboni, Razi-Avarzamani, & Sadrzadeh-Afshar, 2023).

The sudden shift to remote learning and the adoption of social distancing measures necessitated substantial transformation of academic advising and student support services (Troxel, Bridgen, Hutt, & Sullivan-Vance, 2021; Yudof, 2003). Conventional face-to-face interactions and in-person services were altered or replaced to comply with government mandates. There were concerns, however, that these abrupt changes would endanger the efficiency and availability of such essential services (Stoian, Fărcașiu, Dragomir, & Gherheș, 2022). Students might have felt unable to reach out to academic advisors and counsellors due to reduced availability, technological obstacles, or the novelty of the communication methods. The pandemic underscored the need for a strong and comprehensive support system in all HEIs, not least in dental schools (Alexander, Savitz-Romer, Nicola, Rowan-Kenyon, & Carroll, 2022).

To learn from the pandemic, it is necessary to understand how it impacted the relationships between academic advising services, student support systems, and academic well-being so that educational institutions can better recognize and identify student concerns and barriers and adjust their approaches accordingly. Such measures could include introducing focused measures and strategies that ensure that students receive proper guidance, assistance, and resources to excel academically, even in the face of external challenges such as the pandemic.

The Technology Acceptance Model (TAM) has been used as a conceptual framework to assess the impact, if any, of shifting academic advising from face-to-face to online counseling. We investigated the effects of the pandemic on academic advising and student support services at the Faculty of Dentistry at King

Abdulaziz University (KAUFD) through surveys that assessed student attitudes on the efficacy and availability of such services in the first months of the pandemic. The aim was to identify areas of concern and barriers to academic advising to propose student support alternatives that will be effective in general and in the face of future challenges.

2. Materials and Methods

2.1 Ethics statement

The Research Ethics Committee of the Faculty of Dentistry, King Abdulaziz University approved the study protocol (REC-077-08-22). Before the students were allowed to proceed with the online survey, they were required to give their informed consent electronically.

2.2 Study design

This cross-sectional survey study recruited students enrolled in the Bachelor of Dental Surgery program at KAUFD during the 2019–2020 academic year. Students were asked to complete two online questionnaires over a period of two weeks during the final month of the 2020 academic year.

2.3 Setting

The KAUFD academic supervision system typically assigns five or six students to a faculty member, who is responsible for meeting regularly with them throughout the academic year. To ensure systematic documentation of these interactions, faculty submit meeting reports using a standardized Google Form. The COVID-19 pandemic meant that traditional face-to-face meetings were replaced with online meetings.

2.4 Participant characteristics

Participants were undergraduate dental students in years two to six of their education, male or female, and aged 18 to 25 years. All were enrolled in the Bachelor of Dental Surgery Program at KAUFD during the 2019–2020 academic period.

2.5 Survey

The face and content validity of the survey were checked by two experts in dental education followed by pilot testing before distribution. Data were collected via two surveys administered online: the first concerned attitudes toward academic advising, and the second explored electronic learning (e-learning) during the COVID period. Survey 1, section I assessed demographic information of the respondent including gender, academic year, semester, and academic performance (Grade Point Average, GPA). Section II rated the academic advising system at KAUFD, including services, ease of use, and accessibility using five-point Likert scales (ranging from 1–5: “very dissatisfied” to “very satisfied”). Section III focused on rating experiences with academic advising and satisfaction with the advisors, e.g., How did the advisor approach you; What method was used for communication; How effective was this communication method; What was the ease of scheduling the

meeting using a five-point Likert scale (ranging from 1–5: “very dissatisfied” to “very satisfied”). Section IV was an open-ended item where respondents could make suggestions for enhancing the academic advising process. Cronbach’s alpha, used to assess the overall questionnaire reliability of Survey 1, was 0.811, indicating an acceptable level of internal consistency.

In Survey 2, section I asked for background information about the respondent such as sex and academic year. Section II focused on accessibility of technical resources needed for remote learning, e.g., having e-learning devices (laptop, tablet, iPad, or desktop computer) available at home and, if they did, they were asked if the device was shared with other family members. Students without an e-learning device were asked how they attended virtual classes during COVID. Students were asked whether they needed faculty support regarding provision of a device and whether they were able to attend all virtual lectures. Section III explored experiences with virtual classes asking the following: Discuss the extent of your attendance in virtual classes; explain the reasons for not being able to attend virtual lectures; describe any obstacles or challenges you faced attending virtual lectures; describe the impact of the COVID crisis had on you; and were you aware that KAUFUD offers support? A final open-ended question asked the respondents to describe any other challenges they faced during the pandemic and to make suggestions that might help students with their academic advising and may also help students who might be faced with similar situations in the future.

2.6 Statistical analyses

The Statistical Package for the Social Sciences (SPSS, version 28; IBM Statistics, Chicago, IL, USA) was used to analyze data. Absolute and relative frequencies were calculated for categorical variables. Continuous variables were summarized using means and standard deviations. Groups were compared with non-parametric tests, as each questionnaire item utilized five-point Likert scales: the Mann-Whitney U test for satisfaction according to sex across questionnaire items, and the Kruskal-Wallis test for satisfaction according to academic level. A P-value ≤ 0.05 was considered statistically significant.

3. Results

3.1 Student perceptions of academic supervision

Table 1 presents respondent characteristics for Survey 1. In all, 977 students completed the questionnaire, and 88.8% were female. Students were in their second to sixth years of study, with a greater representation of students in their more senior years (13.3% second-year students and 24.0% sixth-year students). Academic supervision sessions were individual for 31.6% of respondents and group sessions for 68.4% of respondents (**Figure 1a**). Over half (58.4%) the respondents preferred to communicate with their

academic advisor using WhatsApp, while the least-preferred method was traditional SMS text messaging (2.8%) (**Figure 1b**).

Table 2 presents the five-point Likert scale scoring of items on Survey 1 section 2: How would you rate the academic advising system at KAUFUD; How easy was it to contact your advisor; and How easy was it to schedule a meeting with your advisor, and the means (range 1–5) and standard deviations for each of these items. Overall, respondents were positive (4.55 ± 0.85) about the academic advising system at KAUFUD, with the majority being “very satisfied” with aspects of the system. In general, students reported finding it easy to access their advisor (4.83 ± 0.5) and easy to schedule a meeting with their advisor (4.63 ± 0.78). They also considered communication methods during the pandemic to be effective (4.74 ± 0.61).

Sex-related differences in perceptions of the academic advising system were non-significant, except for the item “communication method,” which males found to be more effective than females (**Table 3**). Similarly, there were no significant differences (according to academic year) in advising-system perceptions (**Table 4**).

3.2 Student perceptions of e-learning

Table 5 presents respondent characteristics for Survey 2. Of the 642 students who completed the questionnaire, 54.5% were female. Students were in their second to sixth academic years of study, with a greater representation of students in their third year of study—over a quarter (27.6%)—than in the other academic years.

Nearly all (98.8%) students had access to one of the following e-learning devices: laptop, tablet, or desktop computer at home. The majority (83%) shared a device with their family members, while 17% had a device for their personal use. Very few respondents (8, 1.2%) did not own an e-learning device and relied on a mobile phone instead. In response to the item querying the need for faculty support in accessing a proper device, most replied in the affirmative.

Few respondents (30, 4.7%) could not attend all lectures virtually. Absences occurred due to poor internet connections, unavailability of an e-learning device, technical problems with an e-learning device, technical problems with the online e-learning system, difficulty concentrating and understanding, and time pressures. While nearly all respondents (95.3%) could attend all lectures virtually, over half (71%) faced at least one challenge. In addition to the above, other problems were technical issues with sound and psychological difficulties (**Figure 2**).

Over half of the respondents reported experiencing an impact of COVID on a personal level in one way or another (**Figure 3**). The majority agreed that the pandemic had affected their academic experience: 78% felt that their assessments had been affected; two-thirds, that the pandemic had affected their psychological state; and about 60% that academic achievements had been affected. Over half

the respondents (68%) were aware of the COVID support measures on offer from KAUFUD.

3.3 Student suggestions

In the open-ended question (Survey 1, section 4), students provided important suggestions on the following topics:

3.4 Questions on examinations

As examinations were electronic during lockdown, students suggested that faculty members should provide ample time for them to answer questions and allow for more time for questions that need longer answers and more concentration. Respondents also suggested that they should be allowed to move freely between exam questions (as opposed to sequentially). They also suggested that faculty members should not make the exam questions more difficult and complicated to circumvent cheating, as this would be unfair to students.

3.5 Examination scheduling

Students conveyed that departments should coordinate with each other concerning scheduling of the examinations, and they should provide sufficient notice, e.g., at least two weeks before the start of the exams. Other issues included taking into consideration both sexes, access to electronic devices, availability of a stable internet connection, their psychological state, and family pressures during this period. Suggestions were also made to exclude first-semester exam scores from the GPA and to allow communication with the course instructor during the exams in the event of a problem, such as an interruption of the internet connection or the electronic blackboard.

3.6 Teaching methods and assessments

Students suggested that grading should be altered and based not only on exams but also on assignments, research, and short tests. They felt it should be possible to repeat an online exam in the event of technical problems with the electronic blackboard during presentations. They also suggested that faculty should provide a summary of all lectures and share grades on the blackboard; continue virtual classes even after the pandemic; allow free communication with their academic advisors; and adopt a continuous evaluation system.

4. Discussion

Academic supervision is an essential component of the educational process, and students value the support and academic advising provided by the advisors (González López, 2006). At KAUFUD, the academic advising process assigns five to seven students to each academic advisor, with regular communication ensured through mandatory group meetings each semester. Advisors document discussions and student queries using electronic forms. To gauge student experiences and satisfaction, advisors must complete electronic feedback forms and an academic advising report at the end of each semester. Students play a vital role in improving the

quality of the academic advising system by evaluating their advisors. This structured approach ensures that students receive the necessary support throughout their academic journey, but the COVID-19 pandemic required the academic advising process to adapt to new challenges and changes in communication channels.

To investigate the impact of the changes in academic advising at KAUFUD that were made in response to the COVID-19 crisis, this study created two online surveys to identify the specific challenges faced by students. In addition, we aimed to identify factors that increased the effectiveness of academic advising, such as utilization of various tools for communication. In doing so, this study sought to generate valuable insights and knowledge that would improve academic advising practices, the delivery of teaching, and student learning in general, and in possible future crisis situations.

Most students responding to our survey on academic advising (Survey 1) were female and in the later years of study. Despite the challenges of the pandemic, students did well academically, posting mean GPAs of 4.0 and above for their year. This can be seen as a reflection of KAUFUD's resilience and support of their dental students. A previous comparative and longitudinal study conducted in Mexico collected survey data from 341 college students and found that gender and age had an impact on academic performance during the quarantine period. Most students actually improved their academic averages, with females who had no failed subjects achieving the highest GPAs (Vargas-Ramos et al., 2021).

Our data analysis revealed interesting patterns in the academic advising process. The majority of academic advising meetings were in groups. Individual meetings were reserved for students with lower grades, students who requested a meeting, and students with whom the academic advising unit had asked for a meeting. WhatsApp emerged as the preferred platform for communication between students and academic advisors (58.4%), highlighting its user-friendly interface, while traditional text messaging was the least-favored option (2.8%). In a study on the use of WhatsApp in a university setting by undergraduate dental students in Brazil, WhatsApp was considered a useful tool for communicating with and motivating students, especially during times of social isolation (Sette-de-Souza, 2020). Martins et al. reviewed nine studies published between 2016 and 2020 that used WhatsApp in dental education to facilitate communication and improve learning (Martins, de Lima, Cartaxo, & Sette-de-Souza, 2022). WhatsApp is also considered a simple, accessible digital communication tool that can be used for direct and effective interaction between advisors and students and for collaboration and interaction between students.

This study also examined student perceptions and satisfaction with the academic advising system at KAUFUD. Students reported generally positive experiences and expressed high levels of satisfaction with the system. They valued its easy access to advisors

Table 1. Characteristics of the participating undergraduate students (n = 997)

Variable		n	%
Sex	Male	109	11.2
	Female	868	88.8
Academic year	2nd	130	13.3
	3rd	170	17.4
	4th	213	21.8
	5th	230	23.5
	6th	234	24.0
Semester	1st	380	38.9
	2nd	597	61.1
GPA	Mean (SD)	4.48 (0.38)	
Type of meeting	Group	668	68.4
	Individual	309	31.6
Preferred means of communication	WhatsApp	571	58.4
	Telephone	115	11.8
	In person	114	11.7
	Email	101	10.3
	Others	42	4.3
	Text message	27	2.8
	Missing	7	0.7

GPA, grade point average, range 0–5

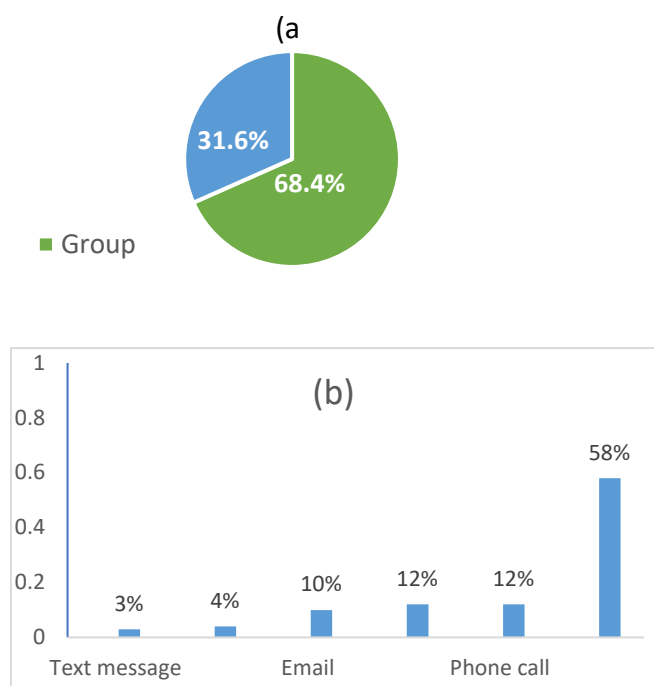


Figure 1. Distribution of advising approaches: (a) group versus individual, (b) communication platform used.

Table 2. Student perceptions of academic supervisions and their supervisors (n = 997 respondents, survey 1)

Statement	Level of Satisfaction (n, %)						Mean (SD)
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	No response	
Quality of academic supervision system	13 (1.3)	23 (2.4)	87 (8.9)	146 (14.9)	702 (71.9)	6 (0.6)	4.55 (0.85)
Ease of access to supervisor	4 (0.4)	1 (0.1)	31 (3.2)	82 (8.4)	855 (87.5)	4 (0.4)	4.83 (0.5)
Ease of scheduling a meeting with the supervisor	13 (1.3)	9 (0.9)	77 (7.9)	126 (12.9)	744 (76.2)	8 (0.8)	4.63 (0.78)
Effectiveness of communication	2 (0.2)	6 (0.6)	42 (4.3)	126 (12.9)	799 (80.5)	14 (1.4)	4.74 (0.74)

Table 3. Student perceptions of academic advising and their advisors according to sex (Mann-Whitney test).

Statement	Sex				P-value
	Female		Male		
	n	Mean (SD)	n	Mean (SD)	
Quality of academic supervision system	852	4.54 (0.030)	106	4.65 (0.073)	0.212
Ease of access to supervisor	852	4.84 (0.018)	106	4.82 (0.046)	0.572
Ease of finding the best time to setting meeting	852	4.62 (0.027)	106	4.73 (0.065)	0.220
Effectiveness of communication method	852	4.71 (0.022)	106	5.00 (0.000)	0.000

Table 4. Student perceptions of the academic advising system and their advisors according to the academic year of the student in 2019–2020 (Kruskal-Wallis test).

Statement	Academic year					P-value
	Mean (SD)					
	2 nd (n = 126)	3 rd (n = 167)	4 th (n = 205)	5 th (n = 227)	6 th (n = 233)	
How would you rate the academic supervision system at KAUFU?	4.63 (0.068)	4.60 (0.062)	4.53 (0.062)	4.57 (0.053)	4.47 (0.062)	0.674
How easy was it to reach your supervisor?	4.83 (0.053)	4.85 (0.038)	4.81 (0.038)	4.84 (0.030)	4.84 (0.032)	0.968
How easy was it to schedule a meeting with your supervisor?	4.64 (0.066)	4.68 (0.060)	4.57 (0.060)	4.62 (0.053)	4.64 (0.047)	0.760
How effective was the above-mentioned communication method?	4.72 (0.055)	4.78 (0.047)	4.73 (0.047)	4.78 (0.034)	4.70 (0.042)	0.384

Table 5. Characteristics of respondents to survey 2.

Characteristic	n (%)
Sex	
Male	292 (45.5)
Female	350 (54.5)
Academic year	
2nd	121 (18.8)
3rd	177 (27.6)
4th	111 (17.3)
5th	10 (16.7)
6th	126 (19.6)

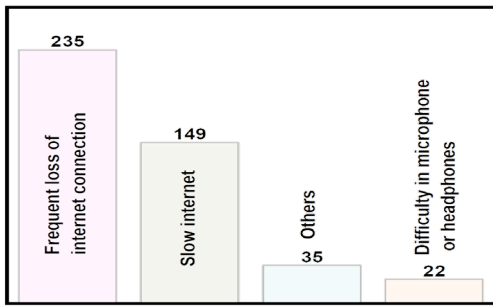


Figure 2. Challenges faced by students during remote education.

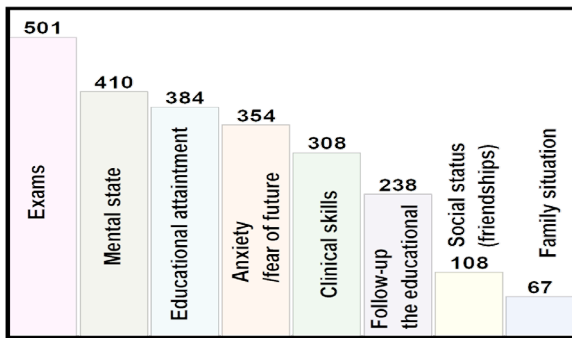


Figure 3. Student perceptions of the impact of the COVID crisis.

and found the scheduling process to be smooth. Survey 1 respondents reported a satisfaction level of 4 or 5 (satisfied) for the communication methods used by advisors, indicating that student-advisor interactions were effective. These findings provide strong evidence of students' positive perceptions and satisfaction with KAUFU's academic advising system, highlighting the importance of prioritizing student well-being and success in today's educational landscape. There were no significant differences in student perceptions of academic advising based on their academic year, indicating that academic advising was of a consistent quality and effectiveness across all years. Furthermore, student GPAs were not correlated with the different components of the educational advising and counseling system. As seen from the results, academic advising benefited students, and a selection of tools for communication was needed to increase the effectiveness of the academic advising system. Further studies are recommended to investigate the effects of different factors on the outcomes of advising (Al-Ansari, El Tantawi, AbdelSalam, & Al-Harbi, 2015). Survey 2 provided empirical evidence on the availability of e-learning devices among students and uncovered a need to address technological disparities to ensure equitable access to remote education. A lack of reliable internet connectivity and technical issues, device availability, concentration difficulties, and scheduling pressures affected student engagement in virtual classes. Student recommendations for improvement included ensuring open communication with instructors, providing devices and technical support, implementing strategies to aid concentration and comprehension, offering flexible scheduling options, and acknowledging students' psychological well-being. In summary, the students' suggestions offered valuable insights into how assessment methods, examinations, and teaching and learning processes could be enhanced. Implementing these recommendations could promote a fairer, more flexible, and supportive educational environment. Educational institutions should carefully consider these suggestions to enhance students' overall learning experience and be better prepared for future situations.

This study has several limitations. As the number of male students responding to Survey 1 was very low, this may have introduced bias, and the results may need to be interpreted with caution. Furthermore, given that this was a survey study, there may have been selection bias in students responding to the email request to complete the questionnaire. The study was also conducted at only one dental school, so generalizability of the results may be limited.

5. Conclusion

This study evaluated student attitudes toward academic advising to identify areas of concern and potential gaps in student support systems during the first month of the COVID pandemic, including access to advisors, technological barriers, and the increased demand

for mental health support at King Abdulaziz University's Faculty of Dentistry (KAUFD). The findings provide significant insights into the current state of academic advising and student support at KAUFU, allowing us to make recommendations on how to improve such services to ensure the continued success and well-being of dental students. The study highlighted the importance of rapidly adapting existing support systems to meet the unique needs of dental students in the context of the COVID-19 pandemic or other future challenges. In the future, training supervisors and equipping them with the necessary tools to support students will be important to improve the confidence of the students, their ability to navigate challenges, and their overall academic performance (Al-Ansari et al., 2015). These findings are helpful for guiding dental educators about factors valued by students before and during the assessment period, helping them to develop strategies that are aligned with student preferences and decrease anxiety, thus creating an inclusive learning environment (Bladt et al., 2022). Consistent with previous research, this study emphasized the importance of academic guidance in education (McGill, 2016).

The COVID-19 pandemic was the driving force for dental institutions worldwide to capitalize on the technology and innovation necessary to ensure a high level of satisfaction while delivering the best possible education to future dentists. Institutes, healthcare faculties, and educators must be aware of the importance of academic advising and student support systems in order to enhance communication and increase the active participation of students to establish a just, adaptable, and encouraging educational environment (Iurcov, Pop, & Iorga, 2021). This study found an increased prevalence of mental health issues among students during the COVID-19 pandemic; two-thirds felt that the pandemic affected their psychological state. Addressing the mental health burden among dental students will prevent future academic and personal concerns (Alghamdi et al., 2022). After thorough evaluation, educational institutions should consider adapting and integrating these suggestions to improve the overall learning experience for students.

Author contributions

A.M.S. conceived the study, developed the hypothesis, performed data analysis, and wrote the manuscript, including the introduction, methods, results, and discussion. A.M.S. also collected the data, conducted the literature review, and carried out the final revision. A.M.S. read and approved the final manuscript.

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Competing financial interests

The authors have no conflict of interest.

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