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# The Role of Teledentistry in Postgraduate Dental Training During the Covid-19 Pandemic in Saudi Arabia

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## ABSTRACT

Despite the exceptional circumstances brought on by the coronavirus epidemic, access to dental care remains a major challenge. To solve the issue, unconventional methods like teledentistry might be useful. Measurement of postgraduate dental students' knowledge, awareness, attitudes, and teledentistry behaviors during the COVID-19 epidemic in Saudi Arabia is the goal of this study. Utilizing a valid self-administered questionnaire, 102 (69 male, 63 female) postgraduate dental students participated in a cross-sectional descriptive survey utilizing an online Google Form to evaluate their knowledge, awareness, attitudes, and practices of teledentistry. The chi-square test and frequency distribution descriptive statistics are used to evaluate the correlation between categorical variables. IBM-SPSS (Version 25, Armonk, NY, USA) was used to analyze the data. Among the 102 research participants, 79% had previously heard of teledentistry, 69% were aware of it, and 70.5% had never utilized it before the COVID-19 epidemic. The majority of responders wish to perform teledentistry soon. There was no statistical difference between gender and telemedicine questions, except for the considerably larger proportion of females than males who stated that teledentistry may be used in any dentistry (P = 0.020). Findings show that postgraduate dental citizens in Saudi Arabia had adequate knowledge and awareness about teledentistry during the COVID-19 pandemic. Similarly, there was not a significant distinction in the age and telemedicine items, with the exception that significantly higher respondents in the age group 31-36 participated in a lecture or course about teledentistry (P = 0.016). The study participants accepted that COVID-19 would allow dental education on the Internet as the best option (P = 0.034).

**Keywords:** Teledentistry, Telemedicine, Covid-19, Postgraduate, Residents

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## Introduction

After a new beta coronavirus linked to pneumonia was identified in Wuhan, China, in December 2019 [1–3], it came to be called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [4] in January 2020 and was identified as the cause of coronavirus disease 2019 (COVID-19). The World Health Organization designated the disease a Public Health Emergency of International Concern on January 30, 2020, due to its recentness and rapid national and international spread, and on March 11, 2020, COVID-19 was declared a pandemic [5].

The Saudi government announced several containment and mitigation steps to slow the spread of SARS-CoV-2. These included the suspension of activities in several government institutions, the temporary closure of colleges and universities in favor of virtual learning, and the closure of shopping centers and marketplaces. Prohibiting public meetings in parks, malls, resorts, and beaches. Only the restaurants' takeout services.

Grocery shops and pharmacies are served by government-assigned internet delivery platforms and applications. All domestic and international aircraft, as well as all buses, taxis, and trains, were halted. There was a national curfew from 7 p.m.–6 a.m [6].

Patient communication and access to healthcare issues, including dental treatment, were made difficult by the temporary suspension of all regular non-emergency general and oral healthcare due to the lockdown and social distancing efforts during the pandemic [6, 7]. Therefore, it is imperative to employ unconventional, cutting-edge information technology, including telehealth and teledentistry, to solve the issues of healthcare access while reducing direct patient-doctor interaction [8, 9].

The exchange of clinical data and pertinent imaging over long distances for consultation and treatment planning is known as teledentistry, a type of telehealth that combines dentistry with telecommunications [10]. Teledentistry has been characterized by others as the use of technology and telecommunications in distant dental treatment and education [11, 12]. In 1996, the US Army conducted the first teledentistry test at Fort Gordon, Georgia [13]. To help general dentists with their treatment plan, a sophisticated system of weekly videoconferences with orthodontic consultants was implemented; the first report on this system was published in 2001 [14].

Recent research on the usage and comprehension of teledentistry by dental professionals revealed a wide range of information, high levels of expertise, and positive attitudes about teledentistry [15, 16]. Although it wouldn't replace in-person clinical dental treatment, some people think teledentistry is a brilliant innovation that requires forward-thinking [17].

In the framework of Saudi Vision 2030, teledentistry is a crucial idea as it might greatly advance the strategic objectives of enhancing healthcare services, advancing e-government, and raising the standard of services offered to citizens [8]. A study by Almazrooa *et al*. [18] found that only half of the dentists had used teledentistry in their clinical practice, while only 33% of the dental professionals from Abha were aware of the practice, and more than half were willing to use it in the future [19]. Another study of dental students in Makkah province showed that they knew very little about teledentistry, but they were prepared to learn and use it [8].

Based in Riyadh, Saudi Arabia, Riyadh Elm University (REU) is a privately financed and operated university that offers some health sciences academic programs through its many faculties. Undergraduate, graduate, and Saudi Board residency programs are offered by the dental college. REU temporarily ceased all on-campus operations and transitioned to an online learning environment because of the COVID-19 epidemic and the abrupt notification of lockdowns. Previous research investigations on teledentistry mostly concentrated on dental practitioners, undergraduate dental students, or dental faculties from Saudi Arabia. However, to the best of our experience, no study was undertaken to examine the levels of knowledge, awareness, attitudes, and practices of teledentistry among postgraduate and Saudi board residents in Saudi Arabia.

To evaluate the present knowledge, awareness, attitudes, and teledentistry practices of postgraduate students and Saudi board residents from a private institution in Riyadh, Saudi Arabia, this study was conducted.

## Materials and Methods

*Study design and participants*

Students in a private university in Riyadh, Saudi Arabia, who were postgraduate students and Saudi Board residents in all specialties of dentistry participated in the descriptive cross-sectional survey.

*Inclusion and exclusion criteria*

Students in a private university in Riyadh, Saudi Arabia, who were postgraduate students and Saudi Board citizens in all specialties of dentistry, participated in the analytic cross-sectional questionnaire.

*Ethical approval and informed consent*

Following the submission of the study protocol to the REU research center, the institutional review board granted ethical permission (FPGRP/2020/496/262/255), and the residents gave their informed consent to participate in the investigation.

*Questionnaire design, development, and administration*

Based on the previously available research on teledentistry, a systematic, closed-ended, self-administered questionnaire was created [20]. Six questions about the research participants' demographics (age, gender, dental program, dental specialty, residency level, and primary workplace) were included in the 21-question questionnaire. The following fifteen questions assessed teledentistry knowledge, attitudes, and behaviors. By forwarding the questionnaire to the teledentistry expert academician (DA), the face validity of the survey was confirmed. Furthermore, the reliability of the questionnaire was

found to be good (Cronbach's alfa = 0.852).

Google Forms was used to construct an electronic version of the questionnaire, which was then made available to the participants via a link. 130 residents enrolled in postgraduate and Saudi Board programs at REU received an email outlining the study's objectives and included a link to the questionnaire. The research was carried out between August 17 and October 1. Following the study time, the replies from the participants were downloaded into a Microsoft Excel sheet and analyzed further.

*Statistical analysis*

All data were analyzed utilizing IBM-SPSS (Version 25, Armonk, NY: USA), and a value of $P < 0.05$ is regarded as significant for all statistical purposes. The research participants' characteristics and questionnaire items were subjected to descriptive statistics of frequency distribution and percentages, and the connection between each factor was evaluated using the Chi-square test and Fisher's exact tests.

**Results and Discussion**

Of the 130 people asked to take part in the research, 102 completed the online questionnaire. This results in a response rate of 78.5%. Demographic data revealed that the majority of respondents were males (61.8%) rather than females (38.2%), aged 31-36 years (59.8%), followed by 25-30 years (25.5%) and gt; 36 years (14.7%). The majority of study participants (82.4%) were in the master's program, whereas just 17.6% were in the Saudi board program. The survey included a sizable proportion of endodontic (22.5%) residents, followed by orthodontic (15.7%), pedodontic (15.7%), AEGD (15.7%), restorative (12.7%), periodontic (9.8%), and prosthodontic (7.8%). Approximately 37.3% of the inhabitants were in R2. Respondents were categorized as either Riyadh (62.7%) or outside Riyadh (37.3%) based on their major place of employment, even though they were from all around Saudi Arabia. In **Table 1**, the demographic details of the research participants are shown.

**Table 1.** Characteristics of the study participants

| Characteristics | | N | % |
|---|---|---|---|
| Gender | Female | 39 | 38.2 |
| | Male | 63 | 61.8 |
| | Total | 102 | 100.0 |
| Age (Years) | 25-30 | 26 | 25.5 |
| | 31-36 | 61 | 59.8 |
| | > 36 | 15 | 14.7 |
| | Total | 102 | 100.0 |
| Dental program | Saudi Board | 18 | 17.6 |
| | Master | 84 | 82.4 |
| | Total | 102 | 100.0 |
| Dental specialty | Orthodontics | 16 | 15.7 |
| | Prosthodontics | 8 | 7.8 |
| | Pedodontics | 16 | 15.7 |
| | Periodontics | 10 | 9.8 |
| | AEGD | 16 | 15.7 |
| | Endodontics | 23 | 22.5 |
| | Restorative dentistry | 13 | 12.7 |
| | Total | 102 | 100.0 |
| Residency level | R1 | 32 | 31.4 |
| | R2 | 38 | 37.3 |
| | R3 | 21 | 20.6 |
| | R4 | 6 | 5.9 |
| | R5 | 5 | 4.9 |
| | Total | 102 | 100.0 |
| Main workplace | Riyadh | 64 | 62.7 |
| | Outside Riyadh | 38 | 37.3 |
| | Total | 102 | 100.0 |

A majority of the people (78.4%) had heard of the word "teledentistry," and 68.6% knew what it was. The percentage of respondents who said they used teledentistry before and during the COVID-19 epidemic was just 29.4% and 49%, respectively. Over half (54.9%) of those who took part in the survey used their smartphone's camera to consult with a patient. The majority (43.1%) did not attend a teledentistry lecture or course. Teledentistry was defined by around 87.3% of locals as the use of computers, the Internet, and other technology to diagnose and treat patients remotely. Internet-based dentistry education is the greatest alternative for COVID-19, according to almost three-quarters (72.5%) of participants. Nearly all participants (62.7%) said that teledentistry may be used in any area of dentistry. Moreover, three-fourths (75.5%) of those surveyed concurred that teledentistry aids in patient oral health monitoring. However, only 36.3% of participants agreed that dental exams conducted on computers are accurate, and 58.8% of the residents believed that teledentistry made dental exams simpler. Nearly three-fourths (74.5%) of the locals concurred that teledentistry may lower dental offices' expenses. Over three-fourths (77.5%) of the population would prefer to perform teledentistry in the future, and over 60.8% would rely on the operation of teledentistry tools **(Table 2)**.

**Table 2.** Teledentistry item responses based on gender, age, and dental program of the study participants (n = 102)

| Questionnaire items/Responses | | Gender | | | Age (Years) | | | | Dental program | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Female | Male | P | 25-30 | 31-36 | > 36 | P | SBD | Master | P |
| | | % | % | | % | % | % | | % | % | |
| Have you heard about teledentistry? | Yes | 79.5 | 77.8 | 0.838 | 65.4 | 82.0 | 86.7 | 0.160 | 88.9 | 76.2 | 0.235 |
| | No | 20.5 | 22.2 | | 34.6 | 18.0 | 13.3 | | 11.1 | 23.8 | |
| Do you know what teledentistry is? | Yes | 74.4 | 65.1 | 0.326 | 53.8 | 72.1 | 80.0 | 0.143 | 77.8 | 66.7 | 0.357 |
| | No | 25.6 | 34.9 | | 46.2 | 27.9 | 20.0 | | 22.2 | 33.3 | |
| Have you ever used a teledentistry system before the COVID-19 pandemic? | Yes | 28.2 | 30.2 | 0.833 | 23.1 | 29.5 | 40.0 | 0.519 | 44.4 | 26.2 | 0.123 |
| | No | 71.8 | 69.8 | | 76.9 | 70.5 | 60.0 | | 55.6 | 73.8 | |
| 10/ Have you ever used teledentistry during the COVID-19 pandemic? | Yes | 53.8 | 46.0 | 0.443 | 34.6 | 57.4 | 40.0 | 0.114 | 66.7 | 45.2 | 0.099 |
| | No | 46.2 | 54.0 | | 65.4 | 42.6 | 60.0 | | 33.3 | 54.8 | |
| Have you ever had a consultation with a patient using a smartphone and its camera? | Yes | 64.1 | 49.2 | 0.142 | 46.2 | 60.7 | 46.7 | 0.362 | 72.2 | 51.2 | 0.104 |
| | No | 35.9 | 50.8 | | 53.8 | 39.3 | 53.3 | | 27.8 | 48.8 | |
| Have you attended a lecture /course about teledentistry? | Yes | 41.0 | 44.4 | 0.735 | 19.2 | 52.5 | 46.7 | **0.016*** | 55.6 | 40.5 | 0.241 |
| | No | 59.0 | 55.6 | | 80.8 | 47.5 | 53.3 | | 44.4 | 59.5 | |
| Is teledentistry about the practice of use of computers, the Internet, and technologies to | Yes | 87.2 | 87.3 | 0.986 | 80.8 | 86.9 | 100.0 | 0.204 | 94.4 | 85.7 | 0.313 |
| | No | 12.8 | 12.7 | | 19.2 | 13.1 | 0.0 | | 5.6 | 14.3 | |
| Do you think that COVID-19 makes dental education over the Internet the best option? | Yes | 79.5 | 68.3 | 0.217 | 57.7 | 82.0 | 60.0 | **0.034*** | 83.3 | 70.2 | 0.259 |
| | No | 20.5 | 31.7 | | 42.3 | 18.0 | 40.0 | | 16.7 | 29.8 | |
| 15/can teledentistry be applied in any branch of dentistry? | Yes | 76.9 | 54.0 | **0.020*** | 73.1 | 60.7 | 53.3 | 0.393 | 66.7 | 61.9 | 0.705 |
| | No | 23.1 | 46.0 | | 26.9 | 39.3 | 46.7 | | 33.3 | 38.1 | |
| Do you think that teledentistry helps to monitor the patient's oral health? | Yes | 66.7 | 81.0 | 0.103 | 65.4 | 80.3 | 73.3 | 0.326 | 94.4 | 71.4 | 0.066 |
| | No | 33.3 | 19.0 | | 34.6 | 19.7 | 26.7 | | 5.6 | 28.6 | |
| Do you think that dental examinations are accurate via computers | Yes | 35.9 | 36.5 | 0.950 | 30.8 | 41.0 | 26.7 | 0.466 | 38.9 | 35.7 | 0.799 |
| | No | 64.1 | 63.5 | | 69.2 | 59.0 | 73.3 | | 61.1 | 64.3 | |
| Do you think that teledentistry makes dental examination easier? | Yes | 61.5 | 57.1 | 0.661 | 50.0 | 63.9 | 53.3 | 0.432 | 72.2 | 56.0 | 0.203 |
| | No | 38.5 | 42.9 | | 50.0 | 36.1 | 46.7 | | 27.8 | 44.0 | |
| Does teledentistry help in reducing costs for dental practices? | Yes | 74.4 | 74.6 | 0.978 | 76.9 | 72.1 | 80.0 | 0.779 | 88.9 | 71.4 | 0.123 |
| | No | 25.6 | 25.4 | | 23.1 | 27.9 | 20.0 | | 11.1 | 28.6 | |
| Do you trust teledentistry equipment to work? | Yes | 61.5 | 60.3 | 0.902 | 61.5 | 62.3 | 53.3 | 0.813 | 72.2 | 58.3 | 0.273 |
| | No | 38.5 | 39.7 | | 38.5 | 37.7 | 46.7 | | 27.8 | 41.7 | |
| In the future, will you practice teledentistry? | Yes | 84.6 | 73.0 | 0.173 | 73.1 | 83.6 | 60.0 | 0.121 | 88.9 | 75.0 | 0.201 |
| | No | 15.4 | 27.0 | | 26.9 | 16.4 | 40.0 | | 11.1 | 25.0 | |

Except for the considerably high proportion of female respondents who thought that teledentistry may be used in any specialty of dentistry (P = 0.020), there was no discernible difference between the genders or their levels of expertise about the application of teledentistry. Significantly more respondents in the 31–36 age range attended teledentistry lectures and courses (P = 0.016), and they believed that online dental education was the best choice during the COVID-19 epidemic (P = 0.034). Additionally, varying residency levels revealed a statistically significant difference in teledentistry awareness (P = 0.020), teledentistry usage before (P = 0.049), and teledentistry use during (P = 0.038) the COVID-19 pandemic. When it comes to monitoring the patient's dental health (P = 0.034) and consulting with them via a smartphone and its camera (P = 0.008), the residency level was also shown to differ considerably. Attendance at the teledentistry lecture or course is substantially more probable among Riyadh residents (P = 0.026) **(Table 3)**.

**Table 3.** Teledentistry item responses based on residency level and main workplace (n = 102)

| Questionnaire items/Responses | | Residency level | | | | | Main workplace | | |
|---|---|---|---|---|---|---|---|---|---|
| | | R1 | R2 | R3 | R4 & R5 | p | Riyadh | Outside Riyadh | P |
| | | % | % | % | % | | % | % | |
| Have you heard about teledentistry? | Yes | 75.0 | 73.7 | 81.0 | 100.0 | 0.280 | 76.6 | 81.6 | 0.551 |
| | No | 25.0 | 26.3 | 19.0 | 0.0 | | 23.4 | 18.4 | |
| Do you know what teledentistry is? | Yes | 65.6 | 55.3 | 81.0 | 100.0 | **0.020*** | 64.1 | 76.3 | 0.197 |
| | No | 34.4 | 44.7 | 19.0 | 0.0 | | 35.9 | 23.7 | |
| Have you ever used a teledentistry system before the COVID-19 Pandemic? | Yes | 31.3 | 21.1 | 23.8 | 63.6 | **0.049*** | 34.4 | 21.1 | 0.153 |
| | No | 68.8 | 78.9 | 76.2 | 36.4 | | 65.6 | 78.9 | |
| Have you ever used teledentistry during the COVID-19 pandemic? | Yes | 40.6 | 39.5 | 61.9 | 81.8 | **0.038*** | 53.1 | 42.1 | 0.282 |
| | No | 59.4 | 60.5 | 38.1 | 18.2 | | 46.9 | 57.9 | |
| Have you ever had a consultation with a patient using a smartphone and its camera? | Yes | 40.6 | 55.3 | 52.4 | 100.0 | **0.008*** | 59.4 | 47.4 | 0.239 |
| | No | 59.4 | 44.7 | 47.6 | 0.0 | | 40.6 | 52.6 | |
| Have you attended a lecture /course about teledentistry? | Yes | 34.4 | 44.7 | 38.1 | 72.7 | 0.159 | 51.6 | 28.9 | **0.026*** |
| | No | 65.6 | 55.3 | 61.9 | 27.3 | | 48.4 | 71.1 | |
| Is teledentistry about the practice of use of computers, the internet, and technologies to | Yes | 93.8 | 76.3 | 90.5 | 100.0 | 0.069 | 85.9 | 89.5 | 0 .605 |
| | No | 6.3 | 23.7 | 9.5 | 0.0 | | 14.1 | 10.5 | |
| Do you think that COVID-19 makes dental education over the Internet the best option? | Yes | 71.9 | 73.7 | 66.7 | 81.8 | 0.832 | 75.0 | 68.4 | 0.472 |
| | No | 28.1 | 26.3 | 33.3 | 18.2 | | 25.0 | 31.6 | |
| Can teledentistry be applied in any branch of dentistry? | Yes | 65.6 | 57.9 | 61.9 | 72.7 | 0.808 | 67.2 | 55.3 | 0.228 |
| | No | 34.4 | 42.1 | 38.1 | 27.3 | | 32.8 | 44.7 | |
| Do you think that teledentistry helps to monitor the patients' oral health? | Yes | 78.1 | 60.5 | 90.5 | 90.9 | **0.034*** | 81.3 | 65.8 | 0.079 |
| | No | 21.9 | 39.5 | 9.5 | 9.1 | | 18.8 | 34.2 | |
| Do you think that dental examinations are accurate via computers | Yes | 46.9 | 39.5 | 19.0 | 27.3 | 0.187 | 37.5 | 34.2 | 0.738 |
| | No | 53.1 | 60.5 | 81.0 | 72.7 | | 62.5 | 65.8 | |
| Do you think that teledentistry makes dental examination easier? | Yes | 65.6 | 47.4 | 66.7 | 63.6 | 0.346 | 64.1 | 50.0 | 0.163 |
| | No | 34.4 | 52.6 | 33.3 | 36.4 | | 35.9 | 50.0 | |
| Does teledentistry help in reducing costs for dental practices? | Yes | 75.0 | 68.4 | 71.4 | 100.0 | 0.202 | 79.7 | 65.8 | 0.119 |
| | No | 25.0 | 31.6 | 28.6 | 0.0 | | 20.3 | 34.2 | |
| Do you trust teledentistry equipment to work? | Yes | 59.4 | 60.5 | 57.1 | 72.7 | 0.202 | 65.6 | 52.6 | 0.194 |
| | No | 40.6 | 39.5 | 42.9 | 27.3 | | 34.4 | 47.4 | |
| In the future, will you practice teledentistry? | Yes | 75.0 | 78.9 | 71.4 | 90.9 | 0.629 | 81.3 | 71.1 | 0.233 |
| | No | 25.0 | 21.1 | 28.6 | 9.1 | | 18.8 | 28.9 | |

Lack of dental and medical facilities, low population density, remoteness from big cities, and other issues make it difficult for many places in the globe to provide access to dental treatment. It has an impact on the amount and caliber of dental treatment given; for these reasons, teledentistry is offered to patients in remote locations to avoid direct patient dentistry during pandemics. Additionally, it facilitates communication among various professionals, which aids in more effective treatment planning [15]. As a result, teledentistry has gained widespread acceptance in dental teaching, public awareness campaigns, and research endeavors across several dental specialties [10]. To the best of our knowledge, this is the first study

to examine teledentistry from the viewpoint of a postgraduate resident at a private Saudi university.

According to the current study, postgraduate residents from a private Saudi Arabian institution have sufficient knowledge and awareness of teledentistry. 68.6% of the population knew about teledentistry, and almost 78.4% had heard of it. This conclusion is comparable to the Indian research that found 74.4% of postgraduate students were aware of teledentistry [20]. Nonetheless, our study's results are better than those of other research conducted among dental interns and students from various parts of Saudi Arabia [8, 19]. In contrast to those who work outside of Riyadh, the majority of residents work in Riyadh city, where knowledge regarding technology breakthroughs is easily accessible. The fact that the younger people in the research are more accustomed to dental technology advancements may also be a reason [18].

Teledentistry employment rose from 29.4-49% before and during the COVID-19 epidemic, according to data. It might be related to the total online switchover of postgraduate education during the COVID-19 pandemic shutdown. It has been stated that teledentistry can at least enhance the existing accepted dental system during the present epidemic [21].

The most common type of teledentistry is teleconsultation, in which patients ask dental professionals for assistance via telecommunications [22]. People with mental and psychological disabilities, as well as those in prisons and assisted living facilities, found it helpful [23, 24]. During the current COVID-19 epidemic, teleconsultations may help patients continue their treatment while under quarantine and lockout [21]. The fact that over 50% of the participants in our survey used their cell phone cameras to conduct dental consultations is noteworthy. The study by Aboalshamat [8] found that 56.05% of dentists used a smartphone and camera to consult with patients. This finding is comparable to that study. An information gap about the possible advantages of teledentistry's deployment in enhancing dental services was shown by a prior study among Saudi Arabian dental students. The fact that just 17.52% of students had ever attended a lecture regarding teledentistry was indicative of this. 43.1% of the residents in our survey had taken teledentistry-related lectures or courses. It might be linked to the rise in smartphone and social media use in both their personal and professional lives, as well as postgraduate dental students engaging in teledentistry as part of their digital transition.

However, Aboalshamat *et al*. [25] raised several issues about the absence of appropriate patient privacy guidelines for smartphone use. Consequently, it could be essential to expand the number of teledentistry training programs that meet the necessary standards for professional communication and privacy. Students at private dental schools were found to use cell phones significantly more frequently for patient appointments than those at Government College. They were also more inclined to participate in teledentistry workshops. It illustrates how the curricula of various colleges differ in terms of contemporary trends.

Face-to-face classroom education events for undergraduate and postgraduate dentistry students were nearly disrupted globally in the aftermath of the COVID-19 pandemic. Teachers have noticed it is difficult to adapt to social distances; the quarantine and social isolation period is unclear, and certain simulated solutions are being used to start teaching practices [26]. In our research, 72.5% of the respondents said that COVID-19 made dental education the best option via the Internet, which is higher than that suggested by an Indian study [27].

While 58.8% of locals believed that teledentistry made dental examinations simple, about 62.7% of people thought that teledentistry could be used in any specialty of dentistry, and 63.7% questioned the accuracy of dental examinations conducted via computers. Conversely, Estai *et al.* [28] have demonstrated a satisfactory degree of accuracy in teledentistry diagnosis of dental caries.

The cost of regulating teledentistry is yet another factor to take into account. Theoretically, teledentistry might reduce costs, according to half of the selected participants in the latest research by Alsharif and Al-harbi [29], and two-thirds of them said it would lessen unnecessary hospital visit expenses. According to this survey, around three-quarters of the participants believe that teledentistry can lower the expenses associated with dental practices. 60% of Indian dentists, however, believed that teledentistry was unable to lower healthcare costs [27].

In keeping with other research, 77.5% of the residents in our investigation agreed to perform teledentistry in the future, and about 60.8% of them relied on teledentistry technology [8, 20].

We suggest more research on teledentistry by taking into account a nationally representative sample of dental residents from both government and private universities in KSA. The current research did not address non-technological, organizational, or political challenges connected to teledentistry. A convenient sample of residents from a single private university may have limited external validity of the research.

**Conclusion**

This study shows that Saudi Arabian postgraduate dental students have a sufficient understanding and awareness of teledentistry; however, since technological advancement will shape the future, postgraduate dental residents in Saudi Arabia need to be further educated on teledentistry. Teledentistry has the potential to usher in a new era in dentistry, which can be accomplished through ongoing dental education programs and awareness campaigns/programs that benefit different levels of the profession.

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**Conflict of Interest:** None

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