



Investigation of Dentist and Dental Specialists' Clinical Attitudes During the COVID-19 Pandemic: A Survey Study

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Abstract

Objective: The aim of this study is to investigate whether Turkish dentists have made any changes in their dental practices and working situations according to their specialties during the coronavirus disease (COVID-19) pandemic.

Methods: An online cross-sectional questionnaire survey was conducted among dental practitioners of Turkey. Age, gender, education level, working status, dentistry specialty, working situations in the filiation team, professional experience, and income status were the demographic variables recorded. The clinical attitudes of the participants during the COVID-19 pandemic were evaluated according to their dentistry specialties. Data were analyzed with chi-square tests. Results were reported as statistically significant at $P < .05$.

Results: A total of 145 dentists, 30.3% male and 69.7% female, participated in the study. According to the statistical analyzes, when the dentists' clinical attitudes are evaluated for emergency treatment, routine treatment, or not performing treatment during the COVID-19 pandemic, it is seen that most of the participants perform routine dental treatments ($P < .05$). In aesthetic applications, nonaerosol applications, and preventive dental applications, the option selected with the least percentage is "only emergency treatment" in all specialties ($P < .05$).

Conclusion: Our results provide clear insight into how Turkish dental specialists behaved during the COVID-19 pandemic and will be of use in future emerging outbreak management.

Keywords: Attitudes, COVID-19, dentist, pandemics

INTRODUCTION

The outbreak of coronavirus disease (COVID-19) first appeared in Wuhan, China, and then became an important public health problem of concern to other countries of the world. The World Health Organization (WHO) declared COVID-19 a pandemic on March 11, 2020.^{1,2}

On January 7, 2020, a novel coronavirus was isolated, and influenza virus, avian influenza virus, adenovirus, severe acute respiratory syndrome coronavirus (SARS-CoV), and Middle East respiratory syndrome coronavirus (MERS-CoV) were ruled out as the causative agent of COVID-19.³

The new type of virus that caused this disease was initially called the "novel coronavirus" (nCoV), and finally, this pathogen was named SARS-CoV-2.⁴

The transmission routes of SARS-CoV-2 are air/aerosol and direct contact.⁵⁻⁷ Saliva plays a critical role in the spread of infection through air and direct contact.⁷ Therefore, dental treatment procedures carry a high risk of COVID-19 infection. In addition, frequent contamination with saliva, blood, and other body fluids during dental treatments as well as the use

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of sharp and high-speed rotary instruments increases the risk of infection.^{8,9}

Effective infection control protocols were needed for dental practices and hospitals in countries/regions affected by COVID-19. Guidelines have been issued by the Centers for Disease Control and Prevention (CDC), the American Dental Association (ADA), and the WHO for dentists and dental staff to control the spread of COVID-19.^{1,10}

It has been reported that nonemergency dental treatments should be suspended in areas where COVID-19 has spread.¹¹

In dentistry, emergency situations during the COVID-19 pandemic period are defined as oral diseases that occur rapidly and develop in a short time and require urgent treatment, such as toothache, infection, dental trauma, temporomandibular joint dislocation, and oral and maxillofacial trauma.^{12,13}

Nowadays, when the world struggles with the COVID-19 pandemic, dentists have to change their routine clinical attitudes and behaviors. The aim of this study was to investigate whether Turkish dentists who are actively performing their duties have made any possible changes in their attitudes and behaviors toward COVID-19 at their dental clinics before or during routine dental procedures and to raise awareness about the importance of such changes.

METHODS

The present cross-sectional study was conducted using an online survey questionnaire. The study design and protocol were approved by the Research Ethics Committee of Istanbul University-Cerrahpaşa, Faculty of Medicine (No:E-59491012-604.01.02-24038). In addition, the Ministry of Health's COVID-19 Study approval was received.

The survey was distributed via an online form, and informed consent was obtained through the questionnaire's home page before data were collected from the dentists. The criteria for dentists to be able to participate in the study were having graduated and accepting to contribute to the research.

The questionnaire developed by the researchers was used to assess dentists' clinical attitudes and behaviors toward dental treatment procedures during the COVID-19 pandemic and provided information about dentists' demographic characteristics.

Data Measurements

Dentists' Demographic Data

The demographic information included dentists' gender, age, specialty, years in practice, working place, and additional income status.

Dentists and Dental Specialists' Clinical Attitudes During the COVID-19 Pandemic

The following 5-item scale to assess participants' clinical attitudes during COVID-19 pandemic was designed. The items included the following: (1) Did you work in filiation team?; (2) Have you taken a break from your job due to COVID-19?; (3) Which dental treatments do you continue to do?; (4) What applications do you perform within the scope of emergency treatment? a) Orthodontic applications, b) Restorative applications, c) Prosthodontic applications, d) Endodontic applications, e) Surgical applications, f) Aesthetic applications, g) Nonaerosol applications, h) Preventive applications; and (5) What applications do you perform within the scope of routine treatment? a) Orthodontic applications, b) Restorative applications, c) Prosthodontic applications, d) Endodontic applications, e) Surgical applications, f) Aesthetic applications, g) Nonaerosol applications, h) Preventive applications.

Statistical Analysis

Statistical analysis was performed using the Statistical Package for the Social Sciences version 21 (IBM SPSS Corp., Armonk, NY, USA) software. Data were analyzed using frequency counts, percentages, and chi-square tests. The level of significance was assessed at $P \leq .05$.

RESULTS

A total of 145 dentists, 30.3% male and 69.7% female, participated in the study. Of them, 2.1% were 18-25 years old; 35.2% were 26-35; 39.3% were in the age range of 36-50; and 23.4% were in the age range of 51-65. A total of 33.1% of the participants were married, and 66.9% of them were single.

Information on the participants' employment status, type of employment, institution, areas of expertise, and professional experience are shown in Table 1. A majority of the participants (97.9%) were working. The majority of working participants (75.2%) stated their working type as full-time. A total of 33.7% of the participants worked in private practice, and 38.6% worked in a university hospital (38.6%). When the professional experience of the participants was evaluated, it was seen that dentists with 10-20 years of professional experience (27.6%) were in the majority, followed by dentists with 20-30 years of professional experience (23.4%). More than half of the participants (66.3%) had an area of expertise. The specialties of oral surgery (8.3%), restorative dentistry (9%), and pedodontics (24.1%) accounted for the highest number of participants. During the pandemic period, 4.8% of the participants worked in filiation team. A total of 75.2% of the participants took a break from the dentistry profession because of the pandemic. Currently, 86.2% of them continue to work actively. However, it is seen that 12.8% of them still have not returned to working life (Table 1).

Table 1. Distribution of demographic data

		N	%
Gender	Female	101	69.7
	Male	44	30.3
Age (Years)	18-25	3	2.1
	26-35	51	35.2
	36-50	57	39.3
	51-65	34	23.4
Marital status	Single	48	33.1
	Married	97	66.9
Working status	Active work	142	97.9
	Not working	3	2.1
Employment	Full-time	109	75.2
	Part-time	36	24.8
Workplace	Private Practice	49	33.7
	Polyclinic	26	17.9
	State Hospital	9	6.2
	Private Hospital	5	3.4
	University Hospital	56	38.6
Do you have dental specialty?	Yes	96	66.3
	No	49	33.7
Which dental specialty do you have?	Oral Surgery	12	8.3
	Oral Radiology	3	2.1
	Pedodontics	35	24.1
	Restorative Dentistry	13	9
	Endodontics	7	4.8
	Periodontology	10	6.9
	Prosthodontics	9	6.2
	Orthodontics	7	4.8
Did you work in filiation team?	Yes	7	4.8
	No	138	95.2
Working time in years	0-3	10	6.9
	3-5	9	6.2
	5-10	30	20.7
	10-20	40	27.6
	20-30	34	23.4
	30+	22	15.2
Do you have an additional source of income other than dentistry?	Yes	20	13.8
	No	125	86.2
Have you taken a break from your job due to Covid-19?	Yes	109	75.2
	No	36	24.8
Are you currently working actively?	Yes	125	86.2
	No	20	13.8

Considering the only emergency treatment, routine treatment, or not performing treatment status of the dentists in the COVID-19 pandemic situation, it is seen that most of the participants perform routine dental treatments (Figure 1).

In Figure 2, dental treatment practices and the specialties of dentists were compared, and a statistically significant difference was found between them. "Not performing treatment" option was selected by nonspecialist dentists with the highest percentage in orthodontic applications. This option

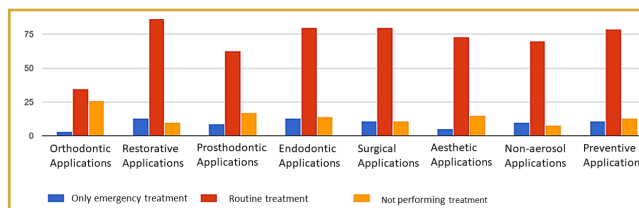


Figure 1. Distribution of dental applications

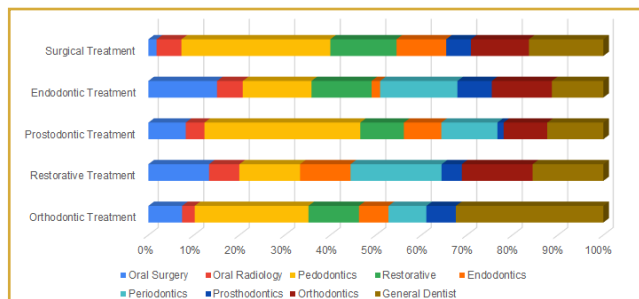


Figure 2. Distribution of not performing treatment option by specialization

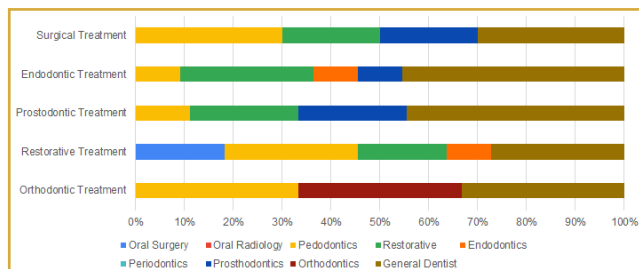


Figure 3. Distribution of only emergency treatment option by specialization

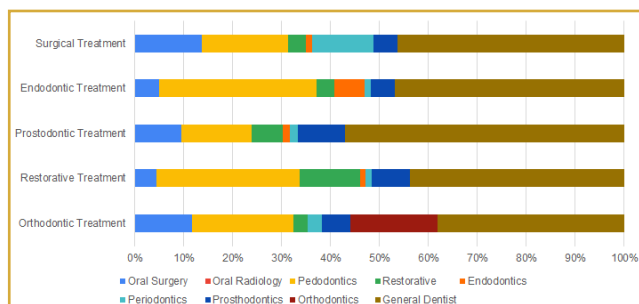


Figure 4. Distribution of routine treatment option by specialization

was marked with the highest percentage of periodontology specialists in restorative applications, pedodontists with the highest percentage in prosthodontic applications, periodontists with the highest percentage in endodontic applications, and pedodontists with the highest percentage in surgical applications ($P < .05$) (Figure 2).

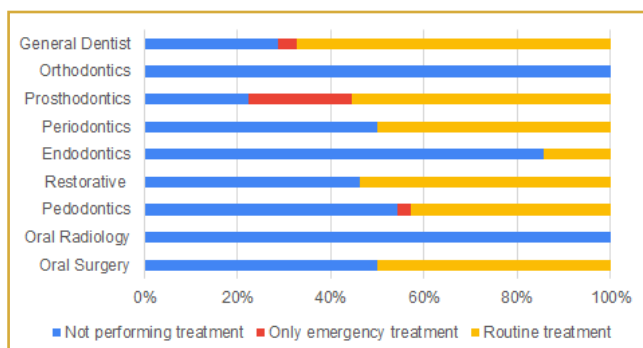


Figure 5. Distribution of aesthetic applications according to treatment options and areas of specialization

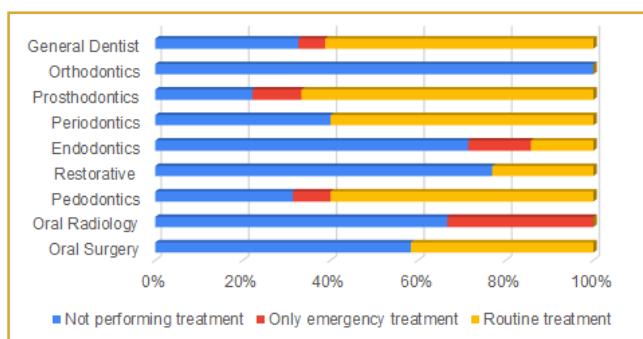


Figure 6. Distribution of nonaerosol applications according to treatment options and areas of specialization

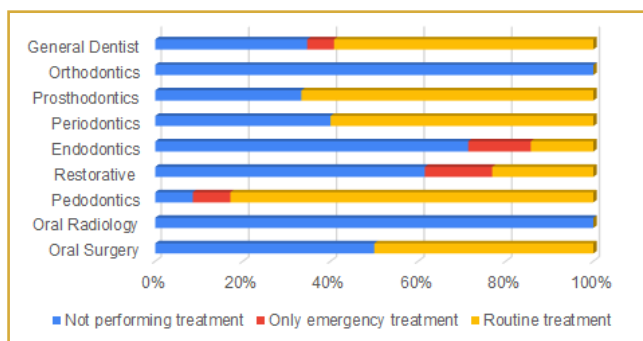


Figure 7. Distribution of preventive applications according to treatment options and areas of specialization

In the survey questions, the highest percentage of those who selected "only emergency treatment option" and "routine treatment option" for orthodontic, restorative, prosthodontic, endodontic, and surgical applications was nonspecialist dentists ($P < .05$) (Figure 3, 4).

"Not performing treatment" option in aesthetic applications is mostly selected by orthodontics and oral radiology specialists. Compared with other dentists, prosthodontists selected "only do emergency treatment" option more in aesthetic applications ($P < .05$) (Figure 5). The orthodontists selected

"not performing treatment" option; oral radiologists selected "only emergency treatment" option, and prosthodontists selected "routine treatment" option with a higher percentage for non-aerosol-generating procedures ($P < .05$) (Figure 6). For preventive dental applications, orthodontists selected "not performing treatment" option; restorative specialists selected "only emergency treatment" option, and pedodontists selected "routine treatment" option with a higher percentage ($P < .05$) (Figure 7). In aesthetic applications, non-aerosol-applications, and preventive dental applications, the option selected with the least percentage was "only emergency treatment" in all specialties ($P < .05$) (Figure 1).

DISCUSSION

COVID-19 has become a global pandemic and has also caused a worldwide crisis. The whole world has been affected in many ways, primarily in the field of health. Physicians, dentists, assistant physicians, and other health care workers have restricted the services they provide and have taken additional precautions. Especially because the working areas of dentists carry a higher risk of transmission of infection compared with other health professionals, those who serve in the field of dentistry are under great stress. For this reason, some dentists closed their clinics for a certain period of time, while others revised their treatment services according to the recommended guidelines, meeting only their urgent treatment needs. The idea that COVID-19 infection may spread high by disease-carrying individuals coming to dentistry clinics has also been reported in many studies.¹⁴⁻¹⁷

In addition, it has been reported that most of the dentists agree that the infection can easily spread in dental clinics by disease carrier individuals, and it has been stated that dentists see COVID-19 as a dangerous infection.^{18,19} However, in a study by Khader et al.¹⁸, contrary to these data, only one-third of Jordanian dentists reported that they saw COVID-19 as a serious infection. The attitudes and behaviors of dentists in the COVID-19 pandemic are related to their level of knowledge and the sustainability of information. There are many studies in the literature examining the knowledge, attitudes, and behaviors of dentists about COVID-19. However, there are very few studies on dentists with expertise in dentistry and the COVID-19 pandemic.¹⁴⁻¹⁷ Koc et al.²⁰ reported that 96% of pedodontists reduced their working hours during the pandemic period. Bekes et al.²¹ stated that most of the dentists performed only emergency treatments at the beginning of the pandemic in a study they conducted with pedodontists. Isiekwe et al.²² reported that there was a decrease in orthodontic patients and that there would be a change in dental practices in the field of orthodontics in the future in their study with orthodontists.

Our study also evaluated the information on dental practices in the COVID-19 pandemic according to all dentist specialties. Dentists, assistants, and patients are at high risk for transmission of COVID-19 infection owing to aerosol gener-

ation and close working distance during dental treatment. Alwazzan et al.²³ reported that all dental services are limited to emergency or emergency care and stated that 84% of dentists were aware of this emergency protocol in their study. In addition, the majority of dentists in the study had a positive attitude toward providing emergency dental care to patients diagnosed with COVID-19 and agreed to postpone routine/elective dental treatment and procedures for all patients. Similarly, a very high percentage of dentists in the study had a positive attitude in referring the non-emergency patient to clinics if they sneezed or coughed, while more than a quarter of dentists agreed to treat patients. Alwazzan et al.'s²³ study findings were higher than the findings in the study of Khader et al.^{18,23}

In Turkey, on the advice of the health science board, non-emergency treatments have been postponed to reduce the risk of spreading COVID-19 during the epidemic.²⁴ It was reported that 71.2% of the physicians working in Europe did not provide treatment services at the beginning of the pandemic, but with the decrease in the number of COVID-19 cases, 66% of the physicians reported that they would return to treatment services.^{16,25}

Tysiac-Mista et al.²⁵ reported that 71.2% of dentists decided not to practice dentistry during the pandemic period. Ahmed et al.¹⁶ showed that 66% of the participants paused their dental practices until the COVID-19 cases began to decrease in their study with 650 dentists from 30 countries. A total of 75.2% of the dentists participating in our study took a break from their work because of COVID-19; this finding is similar to the findings of these studies. In addition, 12.8% of the participants who took a break from the work still do not actively care for patients. This situation can be explained by the high average age of the dentists who interrupted their work.

In our study, when the dental treatment applications made according to the fields of specialization were evaluated, the percentage of routine treatment applications was found to be higher than the emergency treatment applications, contrary to the previous studies. This can be explained by the fact that dentists think that personal protective equipment and vaccines are very effective in preventing disease transmission.

COVID-19 had a significant impact in oral health care in Turkey. Dentistry has adapted to the varied challenges raised by the pandemic. Our results provide clear insight into how Turkish dental specialists behaved during the COVID-19 pandemic and will be of use in future emerging outbreak management.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of İstanbul University-Cerrahpaşa (Date: February 5, 2021; No: 24038).

Informed Consent: Written informed consent was obtained from dentist who participated in this study.

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