



Evaluation of the Measures Taken in the Private Dental Practice during the COVID-19 Pandemic Period in Turkey

Rasul Guliyev¹, Selman Yılmaz Çicek¹, Zehra Turun², Ersin Ülker^{2*},
Tuğrul Kirtiloğlu¹ and Sennur Dabak³

¹Department of Periodontology, Faculty of Dentistry, Ondokuz Mayıs University, Samsun, Turkey.

²Independence Researcher, Periodontology Specialist, Istanbul, Turkey.

³Department of Public Health, Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Objectives: Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), previously known as 2019 novel Coronavirus (2019-nCoV), emerged in December 2019 and causes Coronavirus Disease 2019 (Covid-19). Due to the nature of the dental practice, most treatment procedures produce significant amounts of droplets and aerosols that pose infection risks. Aim of this study to evaluate the precaution measures taken by Turkish dentists during dental procedures to avoid Covid-19 infection pandemic and their attitudes against the pandemic.

Methods: The survey form of the study was prepared in Google surveys (Alphabet, Mountain View, KA, USA) and consists of 32 questions. The survey was shared to dentists working in private practice in Turkey between July 22 – August 10, 2020.

Results: Seven hundred seventy seven dentists aged between 23-73 years were included in the study. Of the 770 dentists, 124 dentists were with chronic disease and 53 of these dentists limited

their practice to only emergency dental treatments, 45 dentists stopped their practice and 26 dentists continued working as usual after 10 March when the first COVID 19 case was detected. The most common date range for dentists (25.7%) stopping and (31.8%) restricting their work is between April 9 – April 22. Two hundred and ten (27.3%) dentists received training on Covid-19.

Conclusions: The most important challenges dentists in Turkey faced in this period can be listed as, the necessary protective equipment is expensive and the difficulty of transportation of equipment. The results of study showed that dentists must improve the measures and get more training on Covid-19 pandemic.

Keywords: Covid-19; dentists; dental practice; protective measures.

1. INTRODUCTION

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) emerged in Wuhan, China and became a public health problem not just in China but also all over the World [1]. Human respiratory epithelial cells were used to isolate a novel coronavirus called 2019-nCoV [2]. Based on genetic and epidemiological research, it appears that the Covid-19 outbreak started with a single animal-to-human transmission and then continued with a steady human-to-human spread [3].

On March 11, 2020, the World Health Organization (WHO) approved Covid-19 as a pandemic [4].

Covid-19 infection is associated with significant morbidity, especially with chronic medical conditions. Case mortality among the inpatients is more than 10%. Rapidly progressing fever, cough and problem of breathing are seen in most cases of Covid-19 [2].

Researches showed that SARS-Cov-2 virus uses angiotensin-converting enzyme II (ACE2) receptors in its pathway to the body [5]. When a person is in close contact (within 1 m) with someone with respiratory symptoms (eg, coughing or sneezing), their mucosa (oral and nasal) or conjunctiva is potentially exposed to infective respiratory droplets. Transmission can also occur through fomites in the immediate environment around the infected person [6].

Therefore, transmission of the Covid-19 virus can occur through direct contact with infected people and indirect contact with nearby surfaces or objects used on the infected person [7].

In the oral cavity, some cells in the tongue, buccal mucosa, gingiva and especially salivary gland ducts can express ACE2, and a study showed that the relevant virus can be isolated in

saliva [8,9]. Due to the nature of the dental practice, most treatment procedures produce significant amounts of droplets and aerosols that pose infection risks. Since aerosols can hang in the air for up to several hours, they can be inhaled by patients and dentists [10]. It has been estimated that the relatively prolonged incubation period of the Covid-19 virus is 1-5 days or until 14 days before any symptoms appear and standard protection measures in daily clinic work are not effective in preventing the transmission of virus [11]. It gets complicated to recognize the symptoms of virus by healthcare professionals in these incubation periods. Therefore, dentists must maintain a high level of awareness to deal with the disease and be able to control and manage its spread [12]. The aim of this study is to evaluate the preventive measures taken by Turkish dentists for maintaining dental operations during Covid-19 pandemic and their attitudes against the pandemic.

2. METHODOLOGY

In our study random dentists regardless of gender difference working in private dental clinics in the Republic of Turkey are included. The number of self-employed dentists in the Republic of Turkey according to the Turkish Dentists Association of records for 2018 was reported to be 17 884 [13].

The survey form of the study consists of 32 questions. While preparing the survey questions, the guide published by the Turkish Dentists Association regarding the preventive measures that dentists should follow [14] and other guides in the literature were used [15,16]. In the survey, questions were asked about the personal information of dentists (excluding identity information), their working status during the Covid-19 period, the personal protective equipment (PPE) they used, the measures they took in the clinic during dental treatment, the problems they encountered and the date range

they took the measures. The survey form in our study was prepared in Google surveys (Alphabet, Mountain View, CA, USA). The survey was shared to dentists working in private practice in Turkey via social media and e-mail addresses registered with dentists' chambers and Turkish Dentists Association. When the number of answers reached 830, survey was ended. Sixty participants who participated in the survey more than once were excluded from the study and the responses of 770 participants were evaluated. With the data obtained the protections taken by Turkish dentists for maintaining dental operations during Covid-19 pandemic and their attitudes against the pandemic was evaluated.

2.1 Statistical Analyses

According to the results obtained from a similar study [12] when the power of the study is 80% and Type I error is 5%; With the Minitab 16 program, 770 people were reached by adding the margin of loss/error to the sample size calculated as 747.

The data obtained during survey transferred to the computer in SPSS (Version 22 for Windows, SPSS Inc, Chicago, IL, USA) package program and analyzed. The data are expressed in numbers and percentages (%). Chi-Square Test was used to compare the categorical data. Statistical significance level was accepted as 0.05 for all tests.

3. RESULTS

This study was conducted between July 22 and August 10, 2020. Seven hundred seventy seven dentists (50.5% male and 49.5% female) aged between 23-73 years were participated in the study. One hundred and fifty six of the dentists (20.3%) were specialist (Table 1).

While 326 of the 770 dentists from the three most populous cities (Istanbul, Ankara and İzmir), 444

dentists from the other 39 cities participated in our study (Table 2). Thirty three point four percent of dentists from these three major cities and 27.3% of dentists from the remaining cities received training on Covid-19. On city center and district basis, while 31.4% of dentists working in city centers received training on Covid-19, 21.3% of the dentists working in districts received training. Of all the dentists, 210 (27.3%) dentists received training on Covid-19 (Table 3).

While 455 (59.1%) of the dentists work in the city center, 315 (40.9%) of the dentists work outside the city. Twenty nine point nine percent of dentists working in the city centers stopped their work after March 10, 50.8% of the dentists limited their work as only emergency dental treatments, and 19.3% of the dentists continued working as usual. On the other hand, 18.4% of the dentists working in the districts stopped their work after March 10, 38.7% of the dentists limited their work as only emergency dental treatments, and 42.9% of the dentists continued working as usual (Table 4).

Of the 770 dentists, 124 dentists were with chronic disease and 53 of these dentists limited their practice to only emergency dental treatments, 45 dentists stopped their work and 26 dentists continued working as usual after March 10 (Table 5).

Dentists have taken preventive measures such as wearing a mask (98.1%), frequent hand washing (95.3%), use of hand sanitizer or cologne (91.9%), social isolation (90%) and ventilation of the environment (87.3%) in their normal lives outside the clinic (Table 1).

The results showed that 96.9% of the dentists think the Covid-19 virus is dangerous for dentists. In the Covid-19 pandemic period, 55.5% of dentists used social media more than usual (Table 1).

Table 1. Demographic profile of respondents

	n	%
Q1. Gender		
Male	389	50.5
Female	381	49.5
Q2. Age		
Q3. The city you are living?		
Q4. Where do you live in a city center or a district?		
Province	455	59.1
District	315	40.9

	n	%
Q5. Specialty		
Dentist	614	79.7
Specialist	156	20.3
Q6. How many years have you been working?		
Q7. Number of dentists working in the practice?		
One dentist	358	46.5
More than one dentist	412	53.5
Q8. Number of auxiliary staff		
Q9. Do you have a chronic illness?		
Yes	124	16.1
No	646	83.9
Q10. Have you had Covid-19 disease?		
Yes	3	0.4
No	767	99.6
Q11. Have you ever had contact with Covid-19 positive patients?		
Yes	60	7.8
No	710	92.2
Q12. Have you been tested for Covid-19 during this period? If yes, what was your test result?		
No, it is not done.	621	80.6
Yes, it was done, the result was negative.	145	18.8
Yes, it was done, the result was positive.	4	0.5
Q13. Which of the following measures do you apply in your daily life outside the workplace regarding Covid-19? (multiple choice)		
Social Isolation	693	90.0
Mask	755	98.1
Frequent hand washing	734	95.3
Hand sanitizer / Cologne	708	91.9
Frequent ventilation of the environment	672	87.3
None	6	0.8
Other	22	2.9
Q14. Since March 10 (the date of the first cases seen in Turkey) How was your work situation?		
My work was limited only as an emergency.	353	45.8
I continued to work normally.	223	29.0
I stopped all work.	194	25.2
Q15. What dates did you completely stop your work?		
March 10 - April 3 (The period when the epidemic started)	87	11.3
April 9 - April 22 (The period when the epidemic peaked)	198	25.7
After June 1 (Normalization period)	19	2.5
None	270	35.1
All	196	25.5
Q16. On what dates did you limit your activity only urgently?		
March 10 - April 3 (The period when the epidemic started)	106	13.8
April 9 - April 22 (The period when the epidemic peaked)	245	31.8
After June 1 (Normalization period)	95	12.3
None	139	18.1
All	185	24.0
Q17. Where do you get the patient history from the patient?		
I am not taking patient history	18	2.3
Outside the procedure room	329	42.7
In the procedure room	423	54.9
Q18. If you continued to work after March 10, what measures did you take? (multiple choice)		
Intermittent appointments to avoid filling the waiting room	648	84.2

	n	%
Postponement of treatments in elderly or patients with systemic diseases	386	50.1
Verification of the patient's accessible current health status	314	40.8
Measuring the patient's body temperature	542	70.4
Enabling patients to wash their hands	363	47.1
Disinfecting the soles of patients' shoes	133	17.3
Using shoe covers for patients	435	56.5
Making patients use masks in waiting rooms	526	68.3
Application of the social distance rule of at least 1 meter between seats in waiting rooms	521	67.7
Frequent airing of waiting rooms	628	81.6
Magazines and books removed from the waiting area	532	69.1
Removal of objects such as ornaments, trinkets and toys that will affect general cleanliness	476	61.8
Automatic removal of water, tea and coffee supplies for catering purposes	511	66.4
Leaving coats, bags and other items outside the office or putting them in a bag	223	29.0
Directing suspected patients to the relevant health institution	323	41.9
Isolating all surfaces that can be contacted by the patient and the physician with covers or plastic stretches	300	39.0
Application of rubber-dam	92	11.9
Use of saliva suckers with high suction power during the process	380	49.4
Using aerosol absorbers during the process	93	12.1
Using an air purification system in the clinic	161	20.9
Working with four hands in terms of cross infection control	253	32.9
Paying attention to the selection of disposable devices	299	38.8
Keeping the clinic room door closed during the treatment process	355	46.1
Disinfection of rooms with UV light	80	10.4
Applying disinfection to the environment for at least 10 minutes after each patient	490	63.6
Disinfection of buttons, counter and chairs after each patient	359	46.6
Ventilation of the environment for at least 10 minutes after each patient	568	73.8
Removal of all disposable protective equipment and disinfection of non-disposable instruments	407	52.9
Measuring body temperature of all colleagues and allowing those above 37.5	424	55.1
Physicians washing their hands before and after each procedure	599	77.8
Physicians' hand disinfection before and after each procedure	11	1.4
Q19. Do you find the measures taken regarding Covid-19 sufficient in your workplace?		
Yes	271	35.2
Partially	419	54.4
No	58	7.5
Unanswered	22	2.9
Q20. If adequate measures could not be taken in the workplace, what are the reasons? (multiple choice)		
For financial reasons	318	41.3
Not available and applicable	343	44.5
Because it is not believed to be protective	85	11.0
Other	9	1.2
Unanswered	278	36.1
Q21. Which mouthwash do you prefer? (multiple choice)		
Oral rinsing with 1% Hydrogen Peroxide before the procedure	294	38.2
Oral rinsing with 0.12-2.2% Chlorhexidine before the procedure	182	23.6
Oral rinsing with 0.2-1% Iodine Povidone before the procedure	202	26.2
Oral rinsing with alcohol and essential oils before the procedure	12	1.6
Before the procedure, patients should be given a mouthwash with 0.05-0.10% cetylpyridinium chloride.	7	0.9
Gargling with 0.05% or 0.25% sodium hypochlorite dilutions before the procedure	17	2.2

	n	%
Oral rinsing with diluted alcohol before the procedure	6	0.8
I do not gargle	220	28.6
Other	4	0.5
Q22. Which surface disinfectant do you prefer? (multiple choice)		
Surface disinfection with 70% alcohol	633	82.2
Surface disinfection with 0.5% sodium hypochlorite.	394	51.2
I do not use disinfectants	3	0.4
Other	5	0.6
Q23. Which of the Personal Protective Equipment did you use? (multiple choice)		
Exam glove	721	93.6
Use of double gloves	239	31.0
Sterile surgical gloves	159	20.6
Surgical mask	607	78.8
FFP2 (N95) / FFP3 mask	623	80.9
Disposable sterile gowns	439	57.0
Bonnet	591	76.8
Goggles	574	74.5
Trench	722	93.8
Coveralls	22	2.9
None	2	0.3
Other	5	0.6
Q24. What is the reason you cannot use the above personal protective equipment? (multiple choice)		
For financial reasons	307	39.9
Not available and not applicable	491	63.8
Because it is not believed to be protective	147	19.1
Other	5	0.6
Unanswered	49	6.4
Q25. When did you start to take the above measures?		
March 10 - April 3 (The period when the epidemic started)	340	44.2
April 9 - April 22 (The period when the epidemic peaked)	138	17.9
After June 1 (Normalization period)	143	18.6
Never	7	0.9
Always	142	18.4
Q26. What problems did you face during the Covid-19 outbreak? (multiple choice)		
I find it difficult to access protective equipment (mask, visor, coveralls, etc.)	478	62.1
I think the awareness of patients on this issue is low	398	51.7
I did not encounter any problems	102	13.2
Other (Difficulty of using equipment)	9	1.2
Q27. Have you received training on Covid-19?		
Yes	210	27.3
No	560	72.7
Q28. Do you think you are knowledgeable enough about Covid-19?		
Yes	493	64.0
No	277	36.0
Q29. Do you think Covid-19 infection is dangerous for dentists?		
I do not agree	13	1.7
I am indecisive	11	1.4
I agree	746	96.9

	n	%
Q30. Are you sure that you are protected from Covid-19 infection while working?		
I do not agree	207	26.9
I am indecisive	325	42.2
I agree	238	30.9
Q31. What do you believe is the risk of transmission of the disease in dental practice in the current epidemic situation?		
Less than the risk in the supermarket	39	5.1
Comparable to supermarket risk	56	7.3
Higher than the risk in the supermarket	675	87.7
Q32. How much do you use social media (Facebook, Instagram, Twitter, WhatsApp) after the Covid-19 outbreak?		
Less than usual	27	3.5
Usual	316	41.0
More than ever	427	55.5

Table 2. Training about Covid 19 and location of workplace

	Training	No training	Total
City n (%)	143 (31.4)	312 (68.6)	455 (100)
District n (%)	67 (21.3)	248 (78.7)	315 (100)
Total n (%)	210 (27.3)	560 (72.7)	770 (100)

^a $\chi^2 = 9.685, p < 0.001$ Chi-Square Test

Table 3. Training about Covid 19 in the three cities with the largest populations and others

	Training	No training	Total
Others ^b n (%)	101 (22.7)	343 (77.3)	444 (100)
Three cities ^c n (%)	109 (33.4)	217 (66.6)	326 (100)
Total n (%)	210 (27.3)	560 (72.7)	770 (100)

^a $\chi^2 = 9.685, p < 0.001$ Chi-Square Test

^bOthers; 78 cities except Istanbul, Ankara and İzmir

^cThree cities; Istanbul, Ankara and İzmir

Table 4. Dentists' working status according to the location of workplace after march 10

	Limited only as an emergency	Continued to work normally	Stopped all work	Total
City n (%)	231 (50.8)	88 (19.3)	136 (29.9)	455 (59.1)
District n (%)	122 (38.7)	135 (42.9)	58 (18.4)	315 (40.9)
Total n (%)	353 (45.8)	223 (29)	194 (25.2)	770 (100)

^a $\chi^2 = 51.161, p < 0.001$ Chi-Square Test

Table 5. Working status according to the dentist with or without chronic disease after march 10

	Only for emergency dental treatment	Continued to work as usual	Stopped all work	Total
No chronic disease n (%)	300 (46.4)	197 (30.5)	149 (23.1)	646 (100)
Presence of chronic disease n (%)	53 (42.7)	26 (21)	45 (36.3)	124 (100)
Total n (%)	353 (45.8)	223 (29)	194 (25.2)	770 (100)

^a $\chi^2 = 10.793, p < 0.001$ Chi-Square Test

4. DISCUSSION

Covid-19 pandemic which was seen first on March 10th, 2020 in Turkey, Turkish Dental Society and the Ministry of Health advised dentists to restrict dental operations for only urgent treatments. But with the decrease of case numbers Ministry of the Interior Affairs declared abolishing most of the restrictions and start of gradually normalization period on May 29th, 2020. As the date, June 1st and the case number were 827 normalization period started [17].

At the due date (August 10th) of our study, the total case number was 241.997 and the death number was 5858 for the country according to data of WHO [17]. During the preparation of our study, only one article was available on that dentists pandemic period between the measures taken and due diligence work related to the way in Turkey [18]. Similar studies have been conducted in other countries besides Turkey. During the study only emergency treatments were recommended by the Turkish Ministry of Health and Turkish Dentistry Association, given by dentists. In a study conducted in Italy, it was reported that almost half of the dentists working in the Lombardy region, where the cases occur the most, stopped their work [12]. Another study made in Jordan was conducted during the absence of local cases. But according to the results of this study Jordanian dentists were aware of Covid-19 symptoms, mode of transmission, and infection controls and measures in dental clinics [19].

In our study, the period from March 10, when the first Covid-19 case was observed, to August 11, was questioned. The study differs from other studies because it covers the periods when the pandemic started, peaked and returned to normal social life.

96.9% of the dentists participating in our study think that the Covid-19 virus is dangerous for dentists, and the 87.7% of the dentists think that the risk of contamination of the Covid-19 virus in dental practice is higher than the risk in the supermarket.

The most common date range for dentists (25.7%) stopping and (31.8%) restricting their work is between April 9 and April 22. According to the official data of the Ministry of Health, it covers the period when the number of Covid-19 cases exceeded 4000 and peaked (5138 cases)

[17]. In a study conducted by Tysiac et al. in Poland, 71.2% of dentists suspended their work during a certain period of the pandemic. Lack of PPE, the concern of participants due to the risk of infection with the Covid-19 virus and the risk of infecting their relatives were reported as the main factors as possible reasons for this result [20].

It is recommended that dentists avoid aerosol procedures as much as possible during this period. Application of minimally invasive interventions in dental procedures can reduce the spread of viral particles. Ultrasonic instruments used in dental practice, rotating instruments working with air and water create aerosols containing saliva and blood. In a study, it was reported that Covid-19 virus can be isolated in saliva [8,9].

A study on the phantom model showed that the highest aerosol droplets could be found at a distance of 60 cm from the patient's head [21]. The medical mask is not protective at distances closer than 1 m from the patient. When performing aerosol generating procedures, an aerosol absorbing device that is as safe as N95, EU FFP2 (European Standard Filtering Face Piece 2) or equivalent approved by the National Institute of Occupational Safety and Health should be used. In addition, goggles or a face shield should be used to protect the eyes from aerosols and droplets formed during treatment [15].

In the study conducted by Duruk G. et al. in March, the rate of N95 use of the participants in that period was 12.36% [18], while this rate was 80.9% for the participants in our period. According to Cagetti et al results, the rate of using FFP2 and FFP3 was 55%, and according to YU.J, the rate of using N95 in endodontic procedures was 82.33% [12,22]. In the study of Sinjari, it was reported that there was a statistically significant increase in the use of PPE by dentists working in Italy compared to the pre-pandemic [23].

Of the participants in our study, 80.9% preferred FFP2 or FFP3 masks as PPE, 74.5% goggles, 2.9% medical coveralls that entered our practice with Covid-19, and 57% preferred disposable gowns. Fifty one of dentists participating in our study perform dental practices by using all PPE. However, in line with the data we obtained in our study, we see that 49% of the participating dentists cannot fully protect themselves. Four hundred and seventy eight of the clinicians

participating in our study reported having difficulty in accessing PPE during the Covid-19 outbreak.

Similar results were obtained in our study and the study conducted by Duruk.G et al. The majority of dentists think that the reason for using insufficient protective equipment is that they are not accessible and feasible together with the financial inadequacy in the implementation of these measures [18].

Answers were given such as being hot when using PPE, difficulties in use: movement and vision difficulties, expensive additional protective materials and financial difficulties for dentists. These results reveal the reasons for the low usage rate. While 35.2% of dentists find the measures taken regarding Covid-19 sufficient in their workplace, 54.4% find it partially sufficient and the remaining 7.5% insufficient.

In a meta-analysis investigating the risk factors for Covid-19 disease older male patients with a combination of high body mass index, high respiratory rate, and underlying diseases (such as hypertension, diabetes, cardiovascular disease and chronic obstructive pulmonary disease) have been observed to be more likely to develop severe Covid-19 disease [24]. One hundred and twenty four (16.1%) of the dentists who participated in our study have chronic diseases and 36.3% of these dentists stopped all their work. A statistically significant difference was found between dentists with chronic diseases and those without chronic diseases in terms of completely stopping their work status $p < 0.001$ (Table 5). The fact that dentists with chronic diseases have completely stopped working more than dentists without chronic diseases shows that dentists with chronic diseases are aware of the possible risk for Covid-19.

Duruk.G et al. in their study on March 16, reported that 26.1% of dentists received training on the Covid-19 outbreak [18]. In our study, this rate is 27.3%. These almost identical results show that the training rate of Covid-19 is low among dentists. In a study conducted by Khader.Y et al. 97.8% of the participants think that they should have sufficient information and training about the Covid-19 outbreak, measures and risks in their patients who apply to the clinic as well as dentists, and it is important in preventing the spread of the disease [19]. According to clinicians who participated in a

survey study conducted by Putrino et al in Italy, the vast majority of patients (more than 61%) reported that they were not concerned about the transmission of coronavirus infection during dental treatment [25]. Three hundred and ninety eight dentists (51.7%) who participated in our study reported that patients' awareness was low during the Covid-19 outbreak.

The risk of transmission of the Covid-19 virus is extremely high when performing dental procedures [10]. Sixty of the dentists who participated in our study were in contact with Covid-19 positive patients. The Covid-19 tests of 2 of the contact dentists were positive. During Covid-19 pandemic period in Turkey, thirteen dentists and one dental technician lost their lives [26]. In our study, 42.7% of the clinicians reported that they took patient history in the outside the procedure room, 54.9% in the procedure room, and 2.3% did not take patient history.

A hand washing guide was recommended by the infection control department of the West China Stomatology Hospital of Sichuan University. Dentists should wash their hands before dental procedures, after touching the patient, the environment, equipment, oral mucosa, damaged skin or wounds, blood and any body fluids. Dentists should be more careful not to touch their own eyes, mouth and nose [27]. While the most common measure taken by the dentists participating in our study before and after the procedure is 77.8% hand washing, it is thought-provoking that 22.2% of our dentists do not wash their hands before and after the procedure.

Using mouthwash before the procedure is thought to reduce the number of oral microorganisms. The most commonly used solution for this purpose is 0.12% Chlorhexidine (CHX). However, it has been reported that the CHX solution may not be effective, as stated by the Diagnosis and Treatment of New Coronavirus Pneumonia (5th edition) published by the National Health Commission of the People's Republic of China. Because the Covid-19 virus is vulnerable to oxidation, solutions containing oxidative agents such as 1% hydrogen peroxide or 0.2% povidone are recommended as a mouthwash before the procedure to reduce oral microorganisms, including potential Covid-19 transport [16]. As a result of our study, while 294 (38.2%) clinicians use 1% Hydrogen Peroxide, 202 (26.2%) clinicians use 0.2-1% Povidone Iodine, and 182

(23.6%) clinicians use CHX. On the other hand, 220 (28.6%) clinicians prefer not to use mouthwash. According to the results of Duruk G. et al. 10.32% of dentists use CHX and 15.42% of dentists use 1% hydrogen peroxide [18]. Covid-19 virus can live on metal, glass and plastic-like surfaces for up to 9 days [28]. Clinical staff should disinfect inert surfaces using chemicals approved against Covid-19. Such as surface disinfectants; 62-71% ethanol, 0.5% hydrogen peroxide and 0.1% (1 g/L) sodium hypochlorite is recommended [15]. In our study, 82.2% of clinicians use 62-71% ethanol, 51.2% use 0.5% sodium hypochlorite.

5. CONCLUSION

During this period the most important challenges faced by the dentists in Turkey can be listed as follows; the high cost of protective equipment and the difficulty of transportation equipment. Dental procedures are very risky due to the aerosol production. During the pandemic, it is not possible to stop dental treatments completely, at least because of the necessity of applying emergency procedures, it is necessary to protect the dentist, staff and patients in clinics. The results of study showed that dentists must improve the measures and get more training on Covid-19 pandemic. The role of dentists in the pandemic period should be to protect themselves, their staff and patients against Covid-19 while providing reliable dental treatment to patients in need and also to direct patients with suspected Covid-19 to the relevant health institutions by providing necessary information.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

The study protocol was reviewed and approved by the Ethics Committee of the Ondokuz Mayıs University (OMU KAEEK NO: 2020/466). The study was conducted in accordance with the Helsinki Declaration of 1975, as revised in 2000.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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