ATATÜRK ÜNİVERSİTESİ YAYINLARI
ATATURK UNIVERSITY PUBLICATIONS

Research Article *Araştırma Makalesi* DOI: 10.17567/currresdentsci.1535279

Dental and Gingival Health Knowledge and Awareness Levels in Individuals During The COVID-19 Pandemic: A Questionnaire Study

COVID-19 Pandemisi Sırasında Bireylerde Diş ve Diş Eti Sağlığı Bilgi ve Farkındalık Düzeyleri: Bir Anket Çalışması

Bensu ÖZEN[1]

[1] Department of Periodontology, Marmara University, Faculty of Dentistry, İstanbul, Türkiye

Hatice Selin GÜNGÖRMEK[1]

[1] Department of Periodontology, Marmara University, Faculty of Dentistry, İstanbul, Türkiye

Leyla KURU[1]

[1] Department of Periodontology, Marmara University, Faculty of Dentistry, İstanbul, Türkiye

ABSTRACT

Objective: The aim of this study is to evaluate whether the level of awareness of individuals' dental and gingival health has changed in parallel with the increased awareness in personal hygiene due to Corona Virus Disease-2019 (COVID-19) pandemic using a questionnaire.
Methods: This cross-sectional study included 200 individuals who applied to Periodontology Clinics. The 24-item questionnaire was developed with the specific aim of assessing participants' awareness of dental and gingival disease during the ongoing pandemic. Number and percentage values were calculated for descriptive statistics. Chi-square test was used to compare categorical data between the groups.
Results: Majority of respondents (74%) indicated no change in the frequency of their tooth brushing habits during the period of the COVID-19 pandemic while 10% reported decrease in their brushing frequency. Males made less changes in tooth brushing frequency during the pandemic than females (P<.05). Periodontal treatment was considered to be safe and very safe by 47% of participants in terms of the risk of Corona virus transmission. Although there was a statistical difference between gender groups for this question (P<.05), there was no difference among education groups (P>.05).
Conclusion: Our findings show that knowledge and awareness about dental and gingival health, which is an essential component of general health, is insufficient during the COVID-19 pandemic.
Keywords: Questionnaire, COVID-19 pandemic, oral hygiene, awareness, knowledge

ÖZ

Amaç: Bu çalışmanın amacı, COVID-19 pandemisi nedeniyle artan kişisel hijyen alışkanlıklarına paralel olarak bireylerin diş ve dişeti sağlığı konusundaki bilinç düzeyinin değişip değişmediğini bir anket kullanarak değerlendirmektir.
Yöntem: Bu kesitsel çalışmaya Periodontoloji Kliniğine başvuran 200 birey dahil edildi. Katılımcıların pandemi sırasında diş ve dişeti hastalıkları konusundaki farkındalıklarını değerlendirmek amacıyla geliştirilmiş olan 24 soruluk anket formu kullanıldı. Tanımlayıcı istatistikler için sayı ve yüzde değerleri kullanılırken, gruplar arasındaki kategorik verileri karşılaştırmak için ki-kare testi kullanıldı.
Bulgular: Katılımcıların çoğunluğu (%74) COVID-19 pandemisi döneminde diş fırçalama alışkanlıklarında bir değişiklik olmadığını belirtirken, %10'u fırçalama sıklıklarında azalma olduğunu bildirdi. Erkeklerin pandemi süresince diş fırçalama sıklıklarında kadınlara göre daha az değişiklik yaptığı görüldü (P<,05). Periodontal tedavi, Corona virüs bulaşma riski açısından katılımcıların %47'si tarafından güvenli ve çok güvenli olarak değerlendirildi. Bu soruda cinsiyet grupları arasında istatistiksel bir fark gözlenirken (P<,05), öğrenim düzeyi grupları arasında anlamlı fark izlenmedi (P>,05).
Sonuç: Bulgularımız, COVID-19 pandemisi sırasında genel sağlığın önemli bir bileşeni olan diş ve dişeti sağlığı konusunda bilgi ve farkındalığın yetersiz olduğunu göstermektedir.
Anahtar Kelimeler: Anket, COVID-19 pandemisi, oral hijyen, farkındalık, bilinç

INTRODUCTION

In December 2019, episodes of atypical pneumonia of unclear etiology were reported in province of the People's Republic of China. The World Health Organization (WHO) has identified this virus as a new coronavirus (2019-nCoV) and dubbed it SARS-CoV-2 due to its taxonomic similarities to the virus linked with Severe Acute Respiratory Syndrome (SARS). The disease caused by SARS-CoV-2 has been called COVID-19.[1]

The study was produceed from https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp and presented at Turkish Dental Association 26th International Dental Congress, Istanbul, Turkey, 8 -11 September 2022, vol.11, pp.485

Geliş Tarihi/Received	18.08.2024
Revizyon Talebi/Revision Requested	21.08.2024
Son Revizyon/Last Revision	10.10.2024
Kabul Tarihi/Accepted	22.10.2024
Yayın Tarihi/Publication Date	26.01.2025

Sorumlu Yazar/Corresponding author: Bensu Özen
E-mail: bensuozenn@gmail.com
Cite this article: Özen B, Güngörmek HS, Kuru L. Dental and Gingival Health Knowledge and Awareness Levels in Individuals During The COVID-19 Pandemic: A Questionnaire Study. *Curr Res Dent Sci.* 2026;36(1):20-26.

SARS-CoV-2, which spreads fast over the globe after the first case is identified was proclaimed a pandemic on March 11, 2020, owing to the rapidity and severity of its transmission. Moreover, it was reported that the number of people infected with SARS-CoV-2 worldwide was 775,678,432 and 7,052,472 of them died from COVID-19 until 23 June 2024.[2]

In this worldwide health disaster, the major route of transmission was via respiratory droplets and contact. So, it was highlighted that the best approach to stop is to adhere to personal hygiene standards and social distancing guidelines. Failure to contain the epidemic and social isolation sadly led to an upsurge in numerous psychological diseases, including anxiety and depression.[3] Furthermore, lower quality of life and motivation in persons with anxiety and depression may lead to impaired oral hygiene practices and higher risk of developing periodontal disease.[4]

Until the pre-pandemic period, there had been only a few patient-based self-awareness studies evaluating participants' dental and gingival health[5,6] which reported periodontal disease awareness varying from 42.4% to 52%.[7,8] However, during the COVID-19 pandemic period, the number of studies on individuals' daily behaviour and attitude including oral hygiene habits, changes in dietary patterns, awareness of bad breath, and reasons for visiting the dentist increased markedly.[9-12] Nevertheless, no patient-based survey study has been conducted on the awareness of gingival health and its relationship with COVID-19.

Another route of COVID-19 is spread is through indirect transmission. Transmission can also occur when healthy people come into contact with contaminated surfaces and then touch their hands to the mucous membranes of the mouth, nose or eyes.[13] In this setting, the oral cavity as the major entryway to the body may contain both the danger of entry and reservoir for SARS-CoV-2. It is a subject of interest to what degree the improved personal hygiene practices to prevent COVID-19 during the pandemic are mirrored in the area of dental and gingival health in terms of both awareness and behaviour.

The hypothesis of our research is that increased general hygiene measures and restricted access to dental care during the COVID-19 pandemic promote particular oral hygiene behaviours and periodontal awareness. Therefore, the purpose of this research is to analyse whether the degree of knowledge of individuals' dental and gingival health has changed in conjunction with the increasing awareness in personal hygiene practices owing to the broad effect of the COVID-19 pandemic on both physical and mental health.

METHODS

Ethical Declaration

This cross-sectional survey-based study has been approved by Ministry of Health COVID-19 Scientific Research Evaluation Commission with protocol number 2020-09-17T13. The research protocol has also received the approval of Marmara University Faculty of Dentistry Ethics Committee with protocol number 2020-442 and date October 1, 2020 and all procedures were conducted by the Helsinki Declaration. Before participation in the study, the volunteers were informed about the study protocol and their consent was obtained.

Subject Population

Subject population of the study included the volunteers (18-64 years of age) who applied to the Periodontology Clinics Faculty of Dentistry Marmara University between October 2020 and July 2021 and agreed to participate in the survey.

Power of the study

The sample size was determined using the data obtained from a similar study conducted by Keles et al..[11] The requisite number of participants was determined through a power analysis conducted with the PASS Sample Size Software (NCSS, LLC) to achieve a minimum of 88 individuals with 80% power at an effect size of 0.5, with a 95% confidence interval.

Data Collection Tool

The specifically designed 24-question survey included 7 demographic questions, 10 questions evaluating the knowledge and awareness of individuals' dental and gingival health, and 7 questions evaluating their attitudes and behaviours during the COVID-19 pandemic. The questionnaire includes closed-ended questions such as yes or no questions, multiple choice questions. The survey form is attached in the appendix.

Statistical Analysis

Statistical Package for Social Sciences (IBM SPSS Corp., Armonk, NY, USA) Windows 25.0 package program was used for data analysis. Participants were grouped based on gender and educational status. Number and percentage values were calculated for descriptive statistics. Chi-square test was used to compare categorical data between the groups. Results were evaluated at $P<.05$ significance level.

RESULTS

Thirty-eight participants out of 238 were excluded from the study due to incomplete or incorrect responses. Table 1 shows the demographic data, systemic disease presence and smoking habits of the subjects.

Table 1. Demographic data, systemic disease presence and smoking habits of the participants

	n=200	%
Age		
18-24	59	29.50
25-34	39	19.50
35-44	42	21
45-54	44	22
55-64	16	8
Gender		
Female	105	52.50
Male	95	47.50
Education Status		
Elementary	55	27.50
High school	66	33
Graduate/ Postgraduate	79	39.50
Presence of Systemic Disease		
Yes	46	23
No	154	77
Type of Systemic Disease		
Cardiovascular System Diseases	14	25.40
Diabetes Mellitus	9	16.40
Respiratory System Diseases	6	10.90
Thyroid Diseases	13	23.60
Cancer	6	10.90
Others	7	12.70
Smoking		
Yes	53	26.50
No	118	59
Former smoker	29	14.50
Cigarette per Day		
1-5	13	24.53
6-10	15	28.30
11-15	11	20.75
16-20	11	20.75
20+	3	5.66

The participants' awareness about dental and gingival health according to gender and education level are presented in Table 2. Although 51.50% of the participants answered yes to the question "Do you have bleeding gums?", only 43% of them reported having gingival disease. Moreover, bleeding gums was considered as a symptom of disease by 78% of the participants, the percentage of females (83.81%) who considered bleeding gums as a disease was statistically higher than the males (71.58%) (*P*<.05). In addition, no statistical difference was observed between the educational level groups of primary school, high school and undergraduate/graduate in the evaluation of bleeding gums as a symptom of disease (*P*>.05). Half of the participants (50.50%) had the habit of brushing their teeth twice a day. While tooth brushing frequency was similar between males and females (*P*>.05), a significant difference was observed among education level groups (*P*<.05).

Table 3 shows the attitude and behaviour of the participants during the COVID-19 pandemic period according to gender and education status, and evaluation the association between COVID-19 and dental/gingival health. During the COVID-19 pandemic, 65.71% of females and 83.16% of males stated no change in tooth brushing frequency. However, male subjects made fewer changes in this process than female subjects (*P*<.05). Male participants (40%) who considered periodontal treatment to be safe in terms of transmission risk during the COVID-19 pandemic was statistically higher than the female participants (27.62%) (*P*<.05). On the contrary, no difference was found among the education level groups (*P*>.05). 60% of all participants were of the opinion that severe periodontal disease would not worsen the COVID-19 situation, without any difference between the gender groups and among the education level groups (*P*>.05).

Table 2. Evaluation of the knowledge and awareness levels of the participants about dental and gingival health

		Total		Gender				*P*	Education Status						*P*
				Female		Male			Elementary		High school		Graduate /Postgraduate		
		n	%	n	%	n	%		n	%	n	%	n	%	
Do you have bleeding gums?	Yes	103	51.50	56	53.33	47	49.47	.585	30	54.55	36	54.55	37	46.84	.556
	No	97	48.50	49	46.67	48	50.53		25	45.45	30	45.45	42	53.16	
Do you have gum disease?	Yes	86	43	51	48.57	35	36.84	.094	25	45.45	25	37.88	36	45.57	.59
	No	114	57	54	51.43	60	63.16		30	54.55	41	62.12	43	54.43	
Do you consider the bleeding gums as a disease?	Yes	156	78	88	83.81	68	71.58	**.037**	34	61.82	55	83.33	67	84.81	**.003**
	No	44	22	17	16.19	27	28.42		21	38.18	11	16.67	12	15.19	
Have you had periodontal treatment before?	Yes	112	56	58	55.24	54	56.84	.819	25	45.45	42	63.64	45	56.96	.13
	No	88	44	47	44.76	41	43.16		30	54.55	24	36.36	34	43.04	
How often do you brush your teeth?	More than twice a day	26	13	15	14.29	11	11.58	.243	4	7.27	12	18.18	10	12.66	**.001**
	Twice a day	101	50.50	56	53.33	45	47.37		17	30.91	34	51.52	50	63.29	
	Once a day	49	24.50	26	24.76	23	24.21		24	43.64	11	16.67	14	17.72	
	Irregular	24	12	8	7.62	16	16.84		10	18.18	9	13.64	5	6.33	
How would you evaluate your current oral and dental health?	Excellent	6	3	5	4.76	1	1.05	.391	3	5.45	0	0	3	3.80	.307
	Good	34	17	18	17.14	16	16.84		9	16.36	16	24.24	9	11.39	
	Moderate	95	47.50	50	47.62	45	47.37		24	43.64	32	48.48	39	49.37	
	Bad	44	22	24	22.86	20	21.05		11	20	14	21.21	19	24.05	
	Too Bad	21	10.50	8	7.62	13	13.68		8	14.55	4	6.06	9	11.39	

Chi-square test, P<.05

Table 3. Participants' attitudes and behaviour during the COVID-19 pandemic

		Total		Gender				*P*	Education Status						*P*
				Female		Male			Elementary		High school		Graduate /Postgraduate		
		n	%	n	%	n	%		n	%	n	%	n	%	
Has there been a change in tooth brushing frequency during the quarantine period due to the COVID-19 pandemic?	Increased	32	16	23	21.9	9	9.47	**.017**	9	16.36	10	15.15	13	16.46	.937
	Decreased	20	10	13	12.38	7	7.37		4	7.27	8	12.12	8	10.13	
	No Change	148	74	69	65.71	79	83.16		42	76.36	48	72.73	58	73.42	
Have you been to the dentist during the quarantine period due to the COVID-19 pandemic?	Yes	64	32	35	33.33	29	30.53	.671	15	27.27	21	31.82	28	35.44	.608
	No	136	68	70	66.67	66	69.47		40	72.73	45	68.18	51	64.56	
How would you evaluate periodontal treatment in terms of transmission risk during the COVID-19 pandemic?	Very Risky	9	4.50	4	3.81	5	5.26	**.016**	3	5.45	2	3.03	4	5.06	.712
	Risky	55	27.50	33	31.43	22	23.16		15	27.27	15	22.73	25	31.65	
	Neither Risky Nor Safe	49	24.50	33	31.43	16	16.84		9	16.36	20	30.30	20	25.32	
	Safe	67	33.50	29	27.62	38	40		21	38.18	22	33.33	24	30.38	
	Very Safe	20	10	6	5.71	14	14.74		7	12.73	7	10.61	6	7.59	
Could severe periodontal diseases worsen the COVID-19 situation?	Yes	79	39.50	42	40	37	38.95	.879	22	40	27	40.91	30	37.97	.934
	No	121	60.50	63	60	58	61.05		33	60	39	59.09	49	62.03	

Chi-square test, P<.05

The reasons for visiting and not visiting the dentist are presented in Table 4. The most common reason for visiting a dental clinic was pain (12.50%) followed by the continuation of previous treatment (8.50%) and dental cleaning (4.50%). Among the reasons for not going to the dentist, 38.50% of subjects stated they did not feel any need, followed by fear of the risk of COVID transmission from the office and clinic with 19%, and fear of coronavirus transmission from the physician with 11%.

Table 4. Participants' reasons for visiting and avoiding to visit the dentist during COVID-19 pandemic

	Total		Gender				Education Status					
			Female		Male		Elementary		High school		Graduate /Postgraduate	
	n	%	n	%	n	%	n	%	n	%	n	%
Reasons for visiting the dentist												
Periodic dental control	7	3.50	3	2.86	4	4.21	2	3.64	2	3.03	3	3.80
Teeth cleaning	9	4.50	5	4.76	4	4.21	2	3.64	4	6.06	3	3.80
Pain	25	12.50	12	11.43	13	13.68	8	14.55	7	10.61	10	12.66
Swelling	7	3.50	4	3.81	3	3.16	0	0	6	9.09	1	1.27
Gum bleeding	8	4	6	5.71	2	2.11	1	1.82	4	6.06	3	3.80
Previously started treatment	17	8.50	10	9.52	7	7.37	2	3.64	6	9.09	9	11.39
Others	5	2.50	3	2.86	2	2.11	2	3.64	0	0	3	3.80
Reasons for avoiding to visit the dentist												
Lack of suitable time	16	8	7	6.67	9	9.47	7	12.73	2	3.03	7	8.86
Fear of the dentist	5	2.50	1	0.95	4	4.21	1	1.82	2	3.03	2	2.53
No need for treatment	77	38.50	38	36.19	39	41.05	17	30.91	29	43.94	31	39.24
Fear of corona virus contagion from doctors	22	11	16	15.24	6	6.32	8	14.55	13	19.7	17	21.52
Fear of corona virus contagion from clinic	38	19	24	22.86	14	14.74	6	10.91	8	12.12	8	10.13
Others	8	4	3	2.86	5	5.26	6	10.91	1	1.52	1	1.27

DISCUSSION

Throughout history, mankind has encountered several contagious illnesses such as plague, AIDS, SARS, MERS, Ebola. COVID-19, probably the latest in this pandemic cycle, manifested itself with symptoms familiar to the community. These symptoms include such as headache, fever, dry cough, myalgia, anosmia and loss of sensation of taste, as well as milder and temporary neuropsychiatric symptoms such as fatigue, sleep disruption and cognitive impairment.[14] Changes in dietary patterns, reduced physical activity, and the stress of trying to adapt to a new and uncertain situation caused by forced quarantine and social isolation may increase susceptibility to cardiovascular diseases, obesity, osteoporosis and depression.[15,16] People under 18 and over 50 years of age, those with education up to high school and those living alone at home have been documented to have greater obsessive-compulsive symptoms during this pandemic.[4] Analysing the psychological and behavioural impacts of lifestyle changes and, offering suggestions for the future are vital in processes that influence the lives of society in such a manner.

In order to better represent the general community, this research comprised voluntary persons who applied to Periodontology Clinics Faculty of Dentistry, Marmara University. The degree of knowledge, awareness and behaviour of these people throughout the COVID-19 pandemic process were assessed in 2 categories, gender and education level, via a specifically designed questionnaire containing 24 items.

The patient-oriented questionnaire evaluations have been shown to have a more substantial influence on the everyday lives of patients than objective data such as clinical attachment level and pocket depth.[17] On the other hand, it has been stated that the fact that the questions in surveys are not standardized, have a very broad variation and are not reproducible may lead to varied findings even on the same issue.[6] Being able to accurately identify the existing state is vital in molding self-awareness and demands for the need for dental care; since the first stage of therapy is for patients to detect the changes in their own bodies and apply to the physician. Therefore, the presence of gingival bleeding is one of the first and objective signs that patients may immediately notice. Although 78% of the participants saw gingival bleeding as an indication of illness, only 43% of the 51.5% who felt that they had gingival bleeding reported that they had gum disease. Similarly, Ertümer et al[7] observed that 72.9% of the participants complained of bleeding gums, although only 40.9% felt they had gum disease. Interestingly, only 14% of the subjects were deemed to be periodontally healthy following clinical evaluation. Individuals may have favoured themselves during self-evaluation. In reality, Epley and Whitchurch[18] explained this contradiction as people typically promote themselves as 10% more attractive and excellent.

Females (83.81%) paid more attention to gingival bleeding as a risk sign for periodontal disease than males (71.58%). Parallel to this finding, in a study in which self-awareness of periodontal disease was evaluated by combining clinical examination and questionnaire study, it was also reported that there was a statistical significance in favour of females only at the gender level independent from education level, age and clinical parameters.[19] According to the results of our study, 74% of the participants showed no change in brushing frequency, while 16% increased and 10% decreased their brushing frequency. Our study's findings are supported by existing literature, also suggested that the frequency of tooth brushing did not change between 66.4% and 93% during the pandemic period.[9,11,20] Perhaps, participants felt that enhancing oral hygiene would not play as crucial function as surface cleaning and hand hygiene in the transmission and prognosis of COVID-19. Male respondents were steadier and made fewer variations in brushing frequency than female respondents (P<.05). 21.9% of women and only 9.47% of men increased their brushing frequency. Females have been more careful than men about personal hygiene routines such as hand washing, surface cleaning and wearing masks to protect themselves during past pandemics such as SARS and Swine flu.[21,22] In addition, females in our study reported that they found periodontal treatment riskier than males in terms of the risk of COVID-19 transmission during the pandemic (P<.05). While 54.74% of males found periodontal treatment safe or very safe, this rate was 33.3% in females. To the best of our knowledge, there is no research comparing just periodontal treatment on the basis of gender in terms of the risk of transmission during COVID-19 pandemic, therefore this finding could

not be compared. Nevertheless, the assumption that general dental procedures might raise the probability of transmission in the pandemic was recognized by 78.7% to 80.7% of participants in several research.[10-12,23] We suspect that the reasons why our participants regarded periodontal treatment safe and very safe may be that they did not realize how extensively aerosolised this treatment was or that they found the safeguards acceptable at the clinic where the survey was carried out.

Differences between genders may be attributed to the fact that females are highly aware and concerned about oral and dental health compared to males. Evolutionary psychology is the science that studies the origins of behavioural and mental processes, acknowledging that most of human behaviour is the consequence of adaptations that gained the capacity to deal with recurring difficulties throughout the era in which their ancestors lived. Darwin's "Theorem of Natural Selection", on which this field is founded, asserts that the species who get the finest care have the highest chance of surviving. In sexual selection behaviour, a beautiful appearance represents health, high levels of steroid hormones and fertility. These indicators, in turn, point to good quality and healthy genes that can be transmitted and good parenting. This mechanism increases an individual's chances of survival in the evolutionary process.[24] It can be said that women spend more energy than men on being healthier and more attractive in order to both survive and produce quality offspring. As a consequence of this, it can be claimed that females exhibit greater interest in beauty and health concerns and attempt to expand their knowledge. Some variations in attitudes and actions between the genders may be explained exactly from this point of view.

Apart from the gender factor, the responses to the question "Is bleeding gingiva a symptom of disease?" indicated that periodontal awareness rose in proportion to the level of education (P<.05). This conclusion validates the findings of previous research on the influence of education and socio-economic position on oral and dental health.[6,25] The frequency of tooth brushing is not just restricted to dental and gingival health, but also gives information on general health and daily health practices, since people with appropriate knowledge and awareness about oral and dental health may alter their attitudes and behaviours accordingly. In recent surveys conducted in our country to assess oral hygiene habits, the percentage of individuals who have the habit of brushing their teeth more than twice a day was between 7.14% and 34.6%; who brush their teeth twice a day was between 37.19% and 61%; who brush their teeth 1 time a day was between 19.9% and 35.68%; and who brush their teeth irregularly was between 17.09% and 49%.[7,26,27] In our research, a strong association was identified between rising educational level and the frequency of brushing teeth twice a day. In various survey research done in diverse populations, a favourable link between educational level and brushing frequency was observed.[26,28] As individuals pursue further education, they develop their reasoning abilities, including their capacity for mental reasoning. These skills can be employed to positively influence their own behaviour with regard to self-worth and self-care.

In the evaluations of morbidity and mortality due to COVID-19, co-infections have been emphasized and systemic diseases have received special attention. In particular, individuals with periodontal disease may also experience bacteraemia as a result of micro-ulcerated sulcus epithelium and damaged periodontal tissues.[29] Unfortunately, 60.5% of the participants agreed that severe periodontal disease would not have a worse prognosis for COVID-19. This question did not cause statistical differences in gender and education level groups. Despite popular belief, there are studies showing that severe periodontal disease may have a negative impact on COVID-19 morbidity and mortality.[30-33] Individuals with severe periodontal disease exhibited 3.54 times increase in intensive care unit admission[30], 4.24 times increase in severe COVID-19 prognosis[31] and 8.81 times increase in mortality risk.[30] A further study has demonstrated that there is a dearth of knowledge among dentists regarding the impact of periodontal diseases and comorbidities, including the aforementioned risks, on the prognosis of patients with COVID-19.[34]

Increasing the level of knowledge and awareness about oral and dental health, which can directly affect general health for a fully healthy state, and developing positive behaviours in this direction can be the first step in improving the quality of life. In this context, the concept of 'One Health' should be adopted and multidisciplinary practices should be prioritised in public health practices to be prepared for other epidemics that may emerge in the future.

The present cross-sectional study had limitations that must be considered in interpreting the results. The first of these limitations, the data of our study were collected by face-to-face study method during the most severe periods, including the 2nd and 3rd waves of the pandemic. The lockdown periods during this period prolonged the time to reach the sample size. Another one, clinical parameters were needed for the consistency of responses, especially in the self-assessment of individuals' periodontal status. In addition, inclusion of only individuals who applied to the periodontology clinic resulted in a more similar population in terms of complaints, awareness and treatment indications.

CONCLUSION

The hypothesis of this study was rejected on the grounds that the participants demonstrated a lack of knowledge, and awareness regarding dental and gingival health during the COVID-19 pandemic, although there is a possibility of direct or indirect oral transmission of SARS-CoV-2.

Ethics Committee Approval: This cross-sectional survey-based study has been approved by Ministry of Health COVID-19 Scientific Research Evaluation Commission with protocol number 2020-09-17T13. The research protocol has also received the approval of Marmara University Faculty of Dentistry Ethics Committee with protocol number 2020-442/01.10.2020.

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

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – B.O, H.S.G, L.K; Design - B.O, H.S.G, L.K; Supervision – L.K ; Materials – B.O, H.S.G; Data Collection and/or Processing – B.O; Analysis and/or Interpretation – B.O, H.S.G; Literature Search – B.O; Writing Manuscript – B.O, H.S.G; Critical Review – L.K.

Conflict of Interest: There is no conflict of interest among the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

Use of Artificial Intelligence: No AI tools were used in the preparation of this manuscript.

Etik Komite Onayı: Kesitsel anket tabanlı bu çalışma, Sağlık Bakanlığı COVID-19 Bilimsel Araştırma Değerlendirme Komisyonu tarafından 2020-09-17T13 protokol numarasıyla onaylanmıştır. Araştırma

protokolü ayrıca Marmara Üniversitesi Diş Hekimliği Fakültesi Etik Kurulu tarafından 01.10.2020 tarih ve 2020-442 protokol numarasıyla onaylanmıştır.

Hasta Onamı: Yazılı hasta onamı bu çalışmaya katılan hastalardan alınmıştır.

Hakem Değerlendirmesi: Dış bağımsız.

Yazar Katkıları: Fikir – B.O, H.S.G, L.K; Tasarım - B.O, H.S.G, L.K; Denetim - L.K; Malzemeler - B.O, H.S.G; Veri Toplama ve/veya İşleme - B.O; Analiz ve/veya Yorumlama - B.O, H.S.G; Literatür Taraması - B.O; Makale Yazımı - B.O, H.S.G; Eleştirel İnceleme - L.K.

Çıkar Çatışması: Yazarlar, çıkar çatışması olmadığını beyan etmiştir.

Finansal Destek: Yazarlar, bu çalışma için finansal destek almadığını beyan etmiştir.

Yapay Zeka Kullanımı: Bu makalenin hazırlanmasında hiçbir yapay zeka aracı kullanılmamıştır.

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