

Investigation of the Sleep-Awake Bruxism Habit Experienced by People Who Quarantined Different Places During the COVID-19 Pandemic

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Abstract

BACKGROUND/AIMS: This study aimed to investigate the sleep and awake bruxism habits experienced by people who were quarantined in different places during the coronavirus disease-2019 (COVID-19) pandemic in the North Cyprus.

MATERIALS AND METHODS: A 25-question self-reported questionnaire was sent to the patients' mobile phones to measure their demographic information and the level of bruxism they experienced before and during their quarantine period while sleeping and awake. The answers were evaluated statistically using percentage and chi-square tests.

RESULTS: A total of 241 people participated in our research. During the quarantine period, there was an increase in awake bruxism and a slight decrease in sleep bruxism. The feelings of worry, fear, panic, and hopelessness felt by the participants in the first days of the quarantine decreased in the last days of the quarantine, regardless of place and length of stay in the quarantine. Teeth clenching, teeth grinding, and earache were mostly observed in those who stayed in dormitory quarantine.

CONCLUSION: People's anxiety is increasing during the COVID-19 pandemic, and there is a positive correlation between anxiety and both sleep and awake bruxism. Dentists should pay more attention to the signs of bruxism during examinations, especially in people who say that they are in quarantine during anamnesis. Although the reason for a patient's visit to the doctor may seem like a simple toothache, underlying factors, such as clenching, should not be forgotten with a holistic approach, and awareness should be created for the patient.

Keywords: Awake bruxism, coronavirus, COVID-19, quarantine, sleep bruxism

INTRODUCTION

Coronavirus is a disease that causes severe acute respiratory syndrome. The outbreak started in Wuhan in 2019, and a few months later, the World Health Organization (WHO) labeled the virus spread across the globe as a pandemic. The risk assessment according to the WHO guidelines for coronavirus disease-2019 (COVID-19) is extremely high, with a global impact. As of April 12, 2020, there were 1,696,588 confirmed cases of COVID-19, including 105,952 deaths, reported by the WHO.¹

To date, all countries that have suffered from COVID-19 have taken measures, as stated by health authorities, to prevent further spread of the virus and ensure infection control. Some of these strategies include the provision of virus tests, extreme social isolation, localized quarantine, and monitoring of the most vulnerable populations; the measures taken are largely guided by the official WHO website based on the number of cases in each country.²

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With the first Coronavirus case in North Cyprus, the Turkish Republic of North Cyprus (TRNC) government implemented stricter measures than other countries because Cyprus is an island. Because of uncertainty about the ways of virus spread, appropriate modes of treatment, insufficient availability of health services, and no existing vaccine or efficient drug for treatment, all entrances and exits to the island by sea, air, and land were closed, and the country was lockdown.³

A filiation team was formed in TRNC to prevent the spread of the disease. The filiation team uses a contact tracking algorithm published by the Republic of Türkiye (TR) and the TRNC health ministries. This algorithm allows users to determine whether they are at high or low risk of COVID-19. People who did not take protective measures (without a mask or wore an inappropriate mask) and were in contact with a patient with COVID-19 in the situations presented in Table 1 were considered at high risk.

The main duty of the filiation team is to contact COVID-19-positive individuals and/or their close contacts. Close contact, in this case, would mean anyone who had been in contact with the positive person within the last 48 hours after being tested positive.⁴

The filiation team called the people they considered as close contacts by phone and placed them in dorms or hotels or left them at home. To stay in quarantine at home, people had to either live alone or have rooms for themselves at home, and they had to have bathrooms and toilets in the room. Otherwise, people were randomly placed in dorms and hotels. In these centers, patients were isolated until two negative polymerase chain reaction (PCR) results were obtained. The average duration was 7 to 21 days.

Bruxism is characterized by the clenching and/or grinding of teeth, bracing, or thrusting of jaw muscles. There are 2 different types of bruxism; sleep and awake. Awake bruxism is a form that is seen during the waking period, and it is usually conscious of the person. Sleep bruxism occurs while the person is sleeping. In sleep bruxism, patients either complain of jaw pain when they wake up in the morning or are observed to clench their teeth during the night. While the diagnosis of bruxism is obtained by asking questions that give the person the

possible diagnosis, a dental examination is essential for a definitive diagnosis.⁵⁻⁸

Many studies have shown that one of the most important reasons for bruxism is psychosocial stress. The quarantine process has caused many changes in people's social lives, which has affected the habit of bruxism.^{3,5,6,9-12} During the quarantine period, people have different problems such as; losing their jobs, decreased income level, starting to have marital problems, being away from their children, thinking that their health will deteriorate, getting bad news from social media, immobility, deterioration of their appearance (weight gain, hair growth, hair dye coming in, etc.), being dissatisfied with their stay, not being social, learning that they have lost their relatives or been hospitalized during their stay in. They experienced varied emotional states like worry, fear, panic, hopelessness, and calmness in their lives.^{2,9,13}

With this research, which is conducted for the first time in TRNC, we aim to evaluate the bruxism habits of people who were in contact due to the COVID-19 pandemic and who remained in quarantine while they were asleep and awake, as well as the effect of differences in the quarantine environment on bruxism.

MATERIALS AND METHODS

This was a retrospective, descriptive study. The sample of the study consists of people who were accepted as close contacts between July 1 and 31, 2021, and who remained in quarantine. Information about the patients was obtained from the sources of the filiation team.

The messages were sent to 2,528 participants. The message could not be delivered to 160 of them because their phones were switched off or could not be reached. To obtain information from the respondents, a questionnaire consisting of 25 questions prepared by the researcher in light of the literature was used. The questionnaire was designed to determine 6 questions to obtain demographic information and then 19 questions to measure bruxism habits before and during the quarantine period.

Our inclusion criteria were as follows: staying in quarantine between July 1 and 31, 2021, being in close contact with a person infected with coronavirus, being 18 years old and over, speaking Turkish, and using a mobile phone. Since the study was based on volunteerism, the survey was sent to individuals, and those who responded within a week were included in the study. The questionnaire was sent to a total of 2,368 people, and 241 of them responded.

The study protocol was approved by Dr. Burhan Nalbantoğlu State Hospital Ethics Committee (approval number: 38/21, date:12.07.2021). All procedures in studies involving human participants were conducted in accordance with the ethical standards of the hospital and/or hospital research committee and with the 1964 Helsinki Declaration. Written informed consent to publish this paper was obtained from the patients.

Statistical Analysis

The data obtained in this study were analyzed using the SPSS 22 package. The relationship between categorical data was examined using chi-square analysis. The method to be used may vary depending on the theoretical frequency calculated for each cell. When the smallest theoretical frequency was <5, "Fisher's exact test" was used and when the frequency was >20, "Monte Carlo Simulation" was used. The

Table 1. Increased COVID-19 risk conditions

The increasing risk of COVID-19
Face and talk to a patient with COVID-19 at a distance of less than 1 m for 15 minutes at a time.
Provide direct care to patients with COVID-19.
Teachers or students who share the classroom with students or teachers who have COVID-19.
Come into physical contact with a patient with COVID-19 (kissing, hugs, etc.).
Unprotected contact with secretions (saliva, sputum, etc.) of patients with COVID-19, such as sneezing and coughing.
The same closed environment as the COVID-19 patient (hospital or bank standby halls, title deed, tax office, those waiting in official institutions such as municipality, bus, shuttle, etc. persons with means of transport).
Passengers traveling on the same plane with a patient with COVID-19 (sitting two fronts, two back and two side seats).
Living in the same house with a patient with COVID-19.
Work in the same office as a patient with COVID-19.
Sharing the same room with a patient with COVID-19 in a dormitory or hotel.
Traveling on the same bus with a patient with COVID-19.

confidence interval was set at 95%, and significance was set at 0.05. It is stated that there is a significant difference/relationship if $p < 0.05$ and that there is no significant difference/relationship if $p > 0.05$.

RESULTS

Participants were 152 females (63.1%) and 89 males (36.9%) in our study with a sample size of 241. 103 (42.8%) were between the ages of 18-29, 79 (32.8%) were between the ages of 30-39, 43 (17.8%) were between the ages of 40-49 and 16 (6.6%) were between the ages of 50 and up. The participants were at 151 (62.7%) university level, 45 (18.7%) high school level, 12 (5%) master’s level, and 10 (4.1%) doctoral level.

The answer to the question of relationship status was 123 (51%) married, 62 (25.7%) single, 28 (11.6%) I have a relationship, 16 (6.6%) engaged, 9 (3.7%) divorced-separated, and 3 (1.4%) widow. 121 (50.2%) of the study participants had children, and 97 of them were younger than 18 years old.

When asked the participants “Have you ever been to a dental checkup?” 215 (89.2%) answered “Yes” to the question, and 75 (31.1%) told their dentist that they had clenched or ground their teeth. After the quarantine period, 85 (35.3%) participants went to the dentist control, and 26 (10.8%) said that the dentist clenched or grinded their teeth.

Before the quarantine period, 67 (27.8%) of the participants said “Yes” to the question “Did you notice that you were clenching your teeth while awake or did someone tell you”, this rate increased to 68 (28.8%) during the quarantine period. Before the quarantine period, 69 (28.6%) of the participants said “Yes” to the question “Did you notice that you were clenching your teeth in sleep or did someone tell you”, this rate decreased to 67 (27.8%) during the quarantine period (Table 2).

When you woke up in the morning before the quarantine period, 70 (29%) of the participants answered yes to the question of whether they had fatigue, tension, or jaw pain, while this rate increased to 72 (29.8%) participants during the quarantine period.

51.9% of the participants stated that they stayed under home quarantine, 37.8% under hotel quarantine, and 10.4% under dorm

quarantine. It was found that 78.8% of the participants answered once, 16.2% two times, 3% three times, and 2% four or more times to the question of how many times they stayed in quarantine. To the question “How many days did you stay in quarantine,” 61.4% of the participants answered 8-14 days, 20.7% 1-7 days, 12% 15-21 days, and 5.8% answered 22 days and above.

In the first days of the quarantine, 28% of those staying in the dorm quarantine, 31.9% of those staying in the hotel quarantine, and 33.6% of those staying in home quarantine felt much or too worried. 24% of those staying in the dorm quarantine, 18.7% of those staying in the hotel quarantine, and 21.6% of those staying in home quarantine felt much or too scared. 24% of those staying in the dorm quarantine, 17.6% of those staying in the hotel quarantine, and 19.2% of those staying in home quarantine felt much or too much hopelessness. 28% of those staying in the dorm quarantine, 34.1% of those staying in the hotel quarantine, and 25.6% of those staying in home quarantine felt much or too calm (Table 3).

In the last days of the quarantine, 12% of those staying in the dorm quarantine, 14.3% of those staying in the hotel quarantine, and 12.8% of those staying in the home quarantine felt much or too worried. 16% of those staying in the dorm quarantine, 8.8% of those staying in the hotel quarantine, and 11.2% of those staying in the home quarantine felt much or too scared. 12% of those staying in the dorm quarantine, 7.7% of those staying in the hotel quarantine, and 8.8% of those staying in home quarantine felt much or too much in panic. 20% of those staying in the dorm quarantine, 5.5% of those staying in the hotel quarantine, and 12.8% of those staying in home quarantine felt much or too much hopelessness. 32% of those staying in the dorm quarantine, 40.7% of those staying in the hotel quarantine, and 38.4% of those staying in home quarantine felt much or too calm (Table 4).

The factors that affected you during your quarantine were asked. 8% of those staying in the dorm quarantine, 3.3% of those staying in the hotel quarantine, and 5.6% of those staying in home quarantine chose the option to lose their job. 36% of those staying in the dorm quarantine, 23.1% of those staying in the hotel quarantine, and 19.2% of those staying in home quarantine chose the option to decrease their

Table 2. Difference analysis table between the variable of “teeth grinding” variable and the answers to the questions

		Teeth grinding								Chi-square analysis	
		Nothing-less		Moderate		Much-too much		Total		Chi-square	p
		n	%	n	%	n	%	n	%		
Have you noticed or asked someone to grind your teeth while awake?	Yes	51	76.1	10	14.9	6	9.0	67	100.0	*	0.0001
	No	164	94.3	4	2.3	6	3.4	174	100.0		
	Total	215	89.2	14	5.8	12	5.0	241	100.0		
During quarantine, have you noticed or someone told you that you are grinding your teeth while awake?	Yes	47	69.1	10	14.7	11	16.2	68	100.0	*	0.0001
	No	168	97.1	4	2.3	1	0.6	173	100.0		
	Total	215	89.2	14	5.8	12	5.0	241	100.0		
Before the quarantine period, have you noticed or someone told you that you were grinding your teeth in sleep?	Yes	33	47.8	20	29.0	16	23.2	69	100.0	66,159	0.0001
	No	160	93.0	3	1.7	9	5.2	172	100.0		
	Total	193	80.1	23	9.5	25	10.4	241	100.0		
During quarantine, have you noticed or someone told you that you are grinding your teeth while sleeping?	Yes	29	43.3	19	28.4	19	28.4	67	100.0	79,049	0.0001
	No	164	94.3	4	2.3	6	3.4	174	100.0		
	Total	193	80.1	23	9.5	25	10.4	241	100.0		

Table 3. Describes the answers given to the question of where you were in quarantine and how emotional they felt during the first few days

Which emotional states did you experience during the first few days of quarantine?		Where did you stay in quarantine?								Chi-square analysis	
		Dorm		Hotel		Home		Total		Chi-square	p
		n	%	n	%	n	%	n	%		
Worried	Nothing-less	10	40.0	43	47.3	52	41.6	105	43.6	1,747	0.782
	Moderate	8	32.0	19	20.9	31	24.8	58	24.1		
	Much-too much	7	28.0	29	31.9	42	33.6	78	32.4		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Scared	Nothing-less	13	52.0	59	64.8	75	60.0	147	61.0	1.54	0.819
	Moderate	6	24.0	15	16.5	23	18.4	44	18.3		
	Much-too much	6	24.0	17	18.7	27	21.6	50	20.7		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
In panic	Nothing-less	16	64.0	64	70.3	89	71.2	169	70.1	1,395	0.845
	Moderate	4	16.0	8	8.8	11	8.8	23	9.5		
	Much-too much	5	20.0	19	20.9	25	20.0	49	20.3		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Hopeless	Nothing-less	15	60.0	68	74.7	79	63.2	162	67.2	*	0.21
	Moderate	4	16.0	7	7.7	22	17.6	33	13.7		
	Much-too much	6	24.0	16	17.6	24	19.2	46	19.1		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Calm	Nothing-less	13	52.0	38	41.8	60	48.0	111	46.1	2,342	0.673
	Moderate	5	20.0	22	24.2	33	26.4	60	24.9		
	Much-too much	7	28.0	31	34.1	32	25.6	70	29.0		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		

Table 4. Describes the answers given to the question of where you were in quarantine and how they felt in the last few days

Which emotional states have you experienced in the last few days of your stay in quarantine?		Where did you stay in quarantine?								Chi-square analysis	
		Dorm		Hotel		Home		Total		Chi-square	p
		n	%	n	%	n	%	n	%		
Worried	Nothing-less	16	64.0	69	75.8	76	60.8	161	66.8	*	0.036
	Moderate	6	24.0	9	9.9	33	26.4	48	19.9		
	Much-too much	3	12.0	13	14.3	16	12.8	32	13.3		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Scared	Nothing-less	16	64.0	76	83.5	94	75.2	186	77.2	*	0.234
	Moderate	5	20.0	7	7.7	17	13.6	29	12.0		
	Much-too much	4	16.0	8	8.8	14	11.2	26	10.8		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
In panic	Nothing-less	19	76.0	79	86.8	103	82.4	201	83.4	*	0.649
	Moderate	3	12.0	5	5.5	11	8.8	19	7.9		
	Much-too much	3	12.0	7	7.7	11	8.8	21	8.7		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Hopeless	Nothing-less	18	72.0	79	86.8	94	75.2	191	79.3	*	0.12
	Moderate	2	8.0	7	7.7	15	12.0	24	10.0		
	Much-too much	5	20.0	5	5.5	16	12.8	26	10.8		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Calm	Nothing-less	12	48.0	34	37.4	50	40.0	96	39.8	0.978	0.913
	Moderate	5	20.0	20	22.0	27	21.6	52	21.6		
	Much-too much	8	32.0	37	40.7	48	38.4	93	38.6		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		

income level. 8% of those staying in the dorm quarantine, 7.7% of those staying in the hotel quarantine, and 0.8% of those staying in home quarantine chose the option to start to have marital problems. 28% of those staying in the dorm quarantine, 17.6% of those staying in the hotel quarantine, and 15.2% of those staying in home quarantine chose the option of being away from my children. 32% of those staying in the dorm quarantine, 23.1% of those staying at the hotel quarantine, and 22.4% of those staying in home quarantine chose the option thinking that their health would deteriorate. 12% of those staying in the dorm quarantine, 13.2% of those staying in the hotel quarantine, and 15.2% of those staying in home quarantine chose the option of getting bad news from social media. 44% of those staying in the dorm quarantine, 41.8% of those staying in the hotel quarantine, and 33.6% of those staying in home quarantine chose the option of immobility. 16% of

those staying in the dorm quarantine, 6.6% of those staying in the hotel quarantine, and 3.2% of those staying in home quarantine chose the option of deterioration of my appearance. 24% of those staying in the dorm quarantine, 20.9% of those staying in the hotel quarantine, and 3.2% of those staying in home quarantine chose the option of being dissatisfied with my stay. 36% of those staying in the dorm quarantine, 24.2% of those staying in the hotel quarantine, and 35.2% of those staying in home quarantine chose the option of not being social. 4% of those staying in the dorm quarantine, 4.4% of those staying in the hotel quarantine, and 10.4% of those staying in home quarantine chose the option of learning that I have lost a relative or being hospitalized during my stay (Table 5).

Table 5. Describe the answers given to the question of where you will stay in quarantine and which of the following will be effective for you as long as you stay

During the quarantine period, which of the following things have been effective for you?		Where did you stay in quarantine?								Chi-square analysis	
		Dorm		Hotel		Home		Total		Chi-square	p
		n	%	n	%	n	%	n	%		
I lost my job	Yes	2	8.0	3	3.3	7	5.6	12	5.0	*	0.42
	No	23	92.0	88	96.7	118	94.4	229	95.0		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Decreased income levels	Yes	9	36.0	21	23.1	24	19.2	54	22.4	3.42	0.181
	No	16	64.0	70	76.9	101	80.8	187	77.6		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Starting to have marital problems	Yes	2	8.0	7	7.7	1	0.8	10	4.1	*	0.014
	No	23	92.0	84	92.3	124	99.2	231	95.9		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Being away from my children	Yes	7	28.0	16	17.6	19	15.2	42	17.4	2,374	0.305
	No	18	72.0	75	82.4	106	84.8	199	82.6		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Thinking that your health will deteriorate	Yes	8	32.0	21	23.1	28	22.4	57	23.7	1,09	0.58
	No	17	68.0	70	76.9	97	77.6	184	76.3		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Bad news from social media	Yes	3	12.0	12	13.2	19	15.2	34	14.1	0.278	0.87
	No	22	88.0	79	86.8	106	84.8	207	85.9		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Immobility	Yes	11	44.0	38	41.8	42	33.6	91	37.8	1,954	0.377
	No	14	56.0	53	58.2	83	66.4	150	62.2		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Deterioration in my appearance	Yes	4	16.0	6	6.6	4	3.2	14	5.8	6,403	0.041
	No	21	84.0	85	93.4	121	96.8	227	94.2		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Dissatisfied with my stay	Yes	6	24.0	19	20.9	4	3.2	29	12.0	19,323	0.0001
	No	19	76.0	72	79.1	121	96.8	212	88.0		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Not being social	Yes	9	36.0	22	24.2	44	35.2	75	31.1	3,296	0.192
	No	16	64.0	69	75.8	81	64.8	166	68.9		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Learning that I have lost a relative or have been hospitalized during my stay	Yes	1	4.0	4	4.4	13	10.4	18	7.5	3,233	0.199
	No	24	96.0	87	95.6	112	89.6	223	92.5		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		

During your stay in quarantine, you were asked which of the following(s) you experienced. 16% of those staying at the dorm quarantine, 7.7% of those staying at the hotel quarantine, and 4% of those staying at home quarantine chose the option pain in my jaw as much or too much. 8% of those staying in the dorm quarantine, 2.2% of those staying at the hotel quarantine, and 1.6% of those staying at home quarantine chose the option earache as much or too much. 32% of those staying in the dorm quarantine, 12.1% of those staying in the hotel quarantine, and 4.1% of those staying in home quarantine chose the option of clenching teeth as much or too much. 28% of those staying in the dorm quarantine, 3.3% of those staying in the hotel quarantine, and 1.6% of those staying at home quarantine chose the option of grinding teeth as much or too much. 16% of those staying in the dorm quarantine, 17.6% of those staying in the hotel quarantine, and 19.2% of those staying at home quarantine chose the option headache as much or too much. 4% of

those staying in the dorm quarantine, 7.7% of those staying in the hotel quarantine, and 5.6% of those staying in home quarantine chose the option noise from the jaw when opening and closing the mouth as much or too much. 8% of those staying in the dorm quarantine, 4.4% of those staying in the hotel quarantine, and 0.8% of those staying in home quarantine chose the option difficulty in mouth opening as much or too much. 4% of those staying in the dorm quarantine, 1.1% of those staying in the hotel quarantine, and 0.8% of those staying in home quarantine chose the option of locking their jaw as much or too much. 4% of those staying in the dorm quarantine, 3.3% of those staying in the hotel quarantine, and 1.6% of those staying at home quarantine chose the option of facial swelling as much or too much. 8% of those staying in the dorm quarantine, 3.3% of those staying in the hotel quarantine, and 4% of those staying in home quarantine chose the option of eating difficulty as much or too much (Table 6).

Table 6. Describe the answers given to the questions regarding where you stayed in quarantine and which of the following experiences did you experience during your stay in quarantine

Which of the following experiences did you have during your stay in quarantine?		Where did you stay in quarantine?								Chi-square analysis	
		Dorm		Hotel		Home		Total		Chi-square	p
		n	%	n	%	n	%	n	%		
Pain in my jaw	Nothing-less	19	76.0	74	81.3	105	84.0	198	82.2	*	0.272
	Moderate	2	8.0	10	11.0	15	12.0	27	11.2		
	Much-too much	4	16.0	7	7.7	5	4.0	16	6.6		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Earache	Nothing-less	20	80.0	77	84.6	119	95.2	216	89.6	*	0.012
	Moderate	3	12.0	12	13.2	4	3.2	19	7.9		
	Much-too much	2	8.0	2	2.2	2	1.6	6	2.5		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Clenching teeth	Nothing-less	17	68.0	72	79.1	104	83.2	193	80.1	*	0.002
	Moderate	0	0.0	8	8.8	15	12.0	23	9.5		
	Much-too much	8	32.0	11	12.1	6	4.8	25	10.4		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Teeth grinding	Nothing-less	16	64.0	84	92.3	115	92.0	215	89.2	*	0.001
	Moderate	2	8.0	4	4.4	8	6.4	14	5.8		
	Much-too much	7	28.0	3	3.3	2	1.6	12	5.0		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Headache	Nothing-less	10	40.0	50	54.9	66	52.8	126	52.3	3,011	0.556
	Moderate	11	44.0	25	27.5	35	28.0	71	29.5		
	Much-too much	4	16.0	16	17.6	24	19.2	44	18.3		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Noise from the mouth opening and closing	Nothing-less	19	76.0	77	84.6	111	88.8	207	85.9	*	0.195
	Moderate	5	20.0	7	7.7	7	5.6	19	7.9		
	Much-too much	1	4.0	7	7.7	7	5.6	15	6.2		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Difficulty in mouth opening	Nothing-less	21	84.0	83	91.2	115	92.0	219	90.9	*	0.132
	Moderate	2	8.0	4	4.4	9	7.2	15	6.2		
	Much-too much	2	8.0	4	4.4	1	0.8	7	2.9		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Locking the jaw	Nothing-less	23	92.0	89	97.8	124	99.2	236	97.9	*	0.096
	Moderate	1	4.0	1	1.1	0	0.0	2	0.8		
	Much-too much	1	4.0	1	1.1	1	0.8	3	1.2		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		

Which of the following experiences did you have during your stay in quarantine?		Where did you stay in quarantine?								Chi-square analysis	
		Dorm		Hotel		Home		Total		Chi-square	p
		n	%	n	%	n	%	n	%		
Facial swelling	Nothing-less	23	92.0	86	94.5	120	96.0	229	95.0	*	0.605
	Moderate	1	4.0	2	2.2	3	2.4	6	2.5		
	Much-too much	1	4.0	3	3.3	2	1.6	6	2.5		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		
Eating difficulty	Nothing-less	21	84.0	78	85.7	112	89.6	211	87.6	*	0.538
	Moderate	2	8.0	10	11.0	8	6.4	20	8.3		
	Much-too much	2	8.0	3	3.3	5	4.0	10	4.1		
	Total	25	100.0	91	100.0	125	100.0	241	100.0		

DISCUSSION

COVID-19 has interfered with global and socioeconomic activities such as travel plans, work, and normal life activities, causing unexpected deaths and illnesses. Studies have reported that moderate and severe anxiety occurs in a high percentage of COVID-19 cases. Suspicious and even inaccurate information about the disease, the lack of information on the affected areas, the number of infected people, and the actual death rate have led to fear and distrust among the public. People and states preferred social isolation, which is the safest method of protection, to fully understand what the existing disease is and to prevent its spread. Social isolation is associated with physical and mental health. Many factors such as were dismissed, decreased income level, marital problems, staying away from children, thinking that their health would deteriorate, getting bad news from social media, immobilization, deterioration of appearance, dissatisfaction with the living environment, not being able to socialize, hospitalization, or death of a relative caused increased stress levels in people who were in quarantine.^{11,13,14} In our study, we asked the participants to answer these questions. Receiving bad news from social media and learning that a relative's condition deteriorated and was hospitalized or died was higher among those who remained in home quarantine. In all other questions, those who remained in dorm quarantine were observed to be affected at a higher rate.

There is a positive correlation between bruxism and stress. It has been observed that the frequency of bruxism increases in populations with high stress levels.^{7-9,11,12} Bruxism during sleep and awake states are recognized as different entities with different etiologies. Awake bruxism is associated with psychological factors such as anxiety, stress, and negative emotions. It has been reported that the frequency of awake bruxism is 5-6 times higher than normal in individuals experiencing high stress, but the role of psychology in sleep bruxism remains controversial.^{2,9} According to a researcher, stress impairs sleep quality and increases the transition between REM and non-REM sleep periods, thus increasing micro-stimulation in the jaw muscles.⁷ In our study, it was observed that the frequency of those who stated that they had a higher level of teeth-grinding problems while awake increased during the quarantine period compared to before. An increase was also reported during the quarantine for those who responded excessively to the clenching problem while sleeping before the quarantine period.

In awake bruxism, possible bruxism can be identified using self-report questionnaires. However, diagnosing bruxism while sleeping

is difficult in people who live alone and when no measurement (polysomnographic measurement) is made. To give a definitive diagnosis in both types of bruxism, the patient should be examined and diagnosed by a dentist.^{5,7} In our study, most of the participants gave importance to oral and dental health and visited the dentist. It was observed that of those participating in the study, one-third had a habit of clenching, which the dentist detected and informed the patient before the quarantine. It was found that one-third of those who went to the dentist before the quarantine period went to the dentist again after the quarantine period due to dental problems.

It has been observed that there was a slight increase in the quarantine period among people who noticed that they were clenching their teeth while awake, or someone told them this before the quarantine period. On the other hand, there has been a decrease in the proportion of people who noticed that they were grinding their teeth while sleeping, or someone else told them before the quarantine period. In self-reported approaches, pain or fatigue in the masticatory muscles of patients can be considered as bruxism. However, in clinical evaluation, pain in the masticatory muscles is used to diagnose both TMD and bruxism.⁸ In our study, when the participants were asked about fatigue, tension, and jaw pain when they woke up in the morning, no significant difference was observed between what they felt before and during the quarantine period.

In the study by Cotrin et al.¹⁴, participants were aware of the seriousness of the coronavirus, and high anxiety levels were observed in those who remained in quarantine. Studies have observed that home quarantine is usually applied to people during pandemics. Unlike other studies, our study consisted of people who were considered contacts who stayed under hotel and dorm quarantine apart from home quarantine. Participants in our study were asked about their emotional states (worried, scared, in a panic, hopeless, and calm) they felt in the first and last days of quarantine, how many times they had been in quarantine, and how long they had been in quarantine. The length and frequency of the quarantine period did not affect the mood of the groups. Those who stayed at home during the first few days of quarantine showed more worry than those who stayed in dorms and hotels. It can be thought that the reason for this is the possibility of infection of the disease by other people at home. On the other hand, the feelings of fear, panic, and hopelessness were most common among those staying in the dorm quarantine. The reason for this may be that they are far from their relatives and live in dormitories. Hotel stayers were found to be the calmest during the first days of quarantine. The reason for

this may be that they feel like they are in a holiday environment. In the last days of the quarantine, regardless of place, length, and frequency of stay, worry, fear, panic, and hopelessness decreased, whereas calm increased in all groups. Psychological and somatic reactions experienced by people may be relieved within hours. For this reason, time is spent in the same place, and the person adapts to the situation.^{2,3,6,9,11,14-16}

One of the common causes of ear pain in the temporomandibular region is bruxism, which is often accompanied by stress and anxiety.¹⁷ Those who stayed in quarantined dorms experienced statistically significant complaints of earache, clenching, and grinding teeth compared with other hotel and home quarantined groups.

Relationship status can also affect stress, anxiety, and depression. Married people have more anxiety during quarantine.¹⁸ In our study, more than half of the participants were married; however, it was observed that those who stayed at the dorm quarantine and the hotel quarantine started to experience marital problems in a statistically significant way compared with those who stayed at home quarantine.

In our study, most of those who were married had children under the age of 18, which means they needed parental care and family support. Being away from their homes and children due to quarantine causes more stress for parents, and they may not receive sufficient support from the people with whom they are together.

Self-reported questionnaires are a reliable tool for measuring possible bruxism habits.^{5,8} This method provides an advantage in terms of seeing the problem quickly, but it is difficult to get people to answer the questionnaire because it is voluntary.¹⁴ Because of this, this research does not include the entire country but only individuals who remain in contact with other individuals under quarantine within 1 month.

Study Limitations

As criteria for exclusion from the study, those whose PCR results were positive during the quarantine process were classified as foreign nationals and people under the age of 18 who remained in quarantine. Moreover, if the phone numbers were the same for a family, only one participant participated in the study.

CONCLUSION

Regardless of the source, anxiety has a serious and positive relationship between anxiety and dental health. For this reason, especially in a high-stress situation like a pandemic; dentists should perform a detailed anamnesis to evaluate the patient's situation well and make a diagnosis and treatment accordingly.

Although the reason for the patient's visit to the doctor may appear to be a simple toothache, underlying factors, such as clenching, should not be forgotten, and the possible etiologies of the patient should be investigated with a holistic approach. It is possible to prevent bruxism habits by increasing awareness among people. Tooth erosion, jaw pain, and locking can be reduced in the following years for these people.

In our research group, it was determined that the awareness of clenching was low. Considering the temporomandibular joint problems and muscle spasms that clenching may cause in the future, it is important to increase this awareness.

MAIN POINTS

- The worry, scared, panic, and hopelessness felt in the first days of the quarantine period gave way to calmness in the following days. This shows how people adapt to adverse situations.
- Clenching, grinding of teeth, and earache were mostly seen in those whose quarantine place was dormitory.
- The COVID-19 pandemic, which affects the whole world and health, has been effective in the increase of awake bruxism.

ETHICS

Ethics Committee Approval: The study protocol was approved by Dr. Dr. Burhan Nalbantoğlu State Hospital Ethics Committee (approval number: 38/21, date:12.07.2021).

Informed Consent: Written informed consent to publish this paper was obtained from the patients.

Authorship Contributions

Surgical and Medical Practices: B.G.Ç.G., Concept: B.G.Ç.G., K.O., Design: B.G.Ç.G., K.O., Data Collection and/or Processing: B.G.Ç.G., Analysis and/or Interpretation: B.G.Ç.G., Literature Search: B.G.Ç.G., Writing: B.G.Ç.G.

DISCLOSURES

Conflict of Interest: No conflict of interest was declared by the authors.

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