

Evaluation of Turkish dentists' anxiety levels according to the measures taken and working conditions during the COVID-19 pandemic

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Received: 24 September 2021

Accepted: 28 April 2022

Abstract

Aim: The aim of the present study is to evaluate dentists' working conditions and the measures they take, and to highlight their effects on anxiety levels of dentists during the COVID-19 pandemic in Turkey.

Methodology: An online survey of 46 questions was performed among Turkish dentists from June 3 to 10, 2020. Demographic variables, working conditions, and the measures they have taken while working during the pandemic were sought among the dentists, and the Beck Anxiety Inventory was used to determine their anxiety levels. This study included a sample of 704 dentists in Turkey.

Results: Considering the working conditions and self-protective measures taken by dentists, dentists who did not feel safe during the pandemic had higher anxiety levels than the others ($p = 0.000$). Female dentists, dentists whose work routines had changed, those who had chronic diseases and those who worked in public were found to have higher levels of anxiety than the others ($p < 0.05$).

Conclusion: It is important to be aware of dentists' working conditions and anxiety levels to help improve their quality of work.

Keywords: Anxiety, COVID-19, coronavirus, Beck Anxiety Inventory, pandemic

Access Online



DOI:
10.5577/intdentres.2022.vol12.no3.3

How to cite this article: Kuldaş F, Durmazpınar PM, Kanmaz B. Evaluation of Turkish dentists' anxiety levels according to the measures taken and working conditions during the COVID-19 pandemic. Int Dent Res 2022;12(3):120-9.
<https://doi.org/10.5577/intdentres.2022.vol12.no3.3>

Introduction

A novel coronavirus infectious disease (SARS-CoV-2/COVID-19) was first detected in Wuhan, China, at the end of 2019 (1, 2). The International Committee on Taxonomy of Viruses named it "severe acute

respiratory syndrome coronavirus 2 (SARS-CoV-2)" (3), and the World Health Organization (WHO) used the term "COVID-19" to define the new coronavirus (4). Thereafter, COVID-19 was declared a pandemic on March 11, 2020, by WHO (2). COVID-19 transmission routes commonly include direct transmission, such as droplet inhalation, sneezing, and coughing, and

contact transmission with nasal, oral, and eye mucous membranes (5). The COVID-19 virus can progress with various clinical manifestations in humans, from mild cold symptoms to respiratory diseases, such as pneumonia (6). People infected with COVID-19 might have severe acute respiratory tract infections with symptoms such as high fever, dyspnea, and dry cough (7). There is not yet a certain treatment for this disease (8).

People from all nations and socioeconomic groups have been affected during the pandemic. Daily life has changed, and preventions have been taken, such as social isolation, closing schools, and quarantining communities all over the world (9); the same applies in Turkey. The first coronavirus case was seen in Turkey on March 10, 2020, and as of this date, the number of cases started to increase rapidly (10). Routine dental care treatments had propped up temporarily in the middle of March. Most dentists in public or private dental clinics began to work with flexible hours/days, while some of them have closed their dental clinics temporarily. Also, some dental practitioners have been tasked as field staff members to be part of filiation teams during the pandemic. Early in the pandemic, the Turkish Ministry of Health and Turkish Dentistry Association recommended performing only emergency dental procedures, as in many other countries (11). While it is essential to manage emergency dental cases, the most important point is for dentists to protect themselves and avoid spreading the infection to their patients and healthcare staff (12). The standard personal equipment includes gowns, masks, and gloves, and to protect from droplet and airborne infections, it is also required to use goggles, face shields, head coverings, etc. (13). The American Dental Association (ADA), the World Health Organization, and the Centers for Disease Control and Prevention (CDC) suggested some instructions for dental practitioners to prevent spreading COVID-19 during dental procedures, such as rinsing the mouth before dental operations and employing rubber dam isolation (14).

Healthcare workers are at serious risk of getting infected with the virus because of their close contact with patients (15). In particular, dentists are at a high risk of contracting the COVID-19 virus because they are exposed to saliva, blood, aerosol, and droplets during most dental procedures (15). The New York Times stated that dental practitioners are at greater risk of being infected with COVID-19 than general physicians and nurses (16). Dentists are concerned about cross-infection and the risk of spreading the disease to patients and their families. Under these conditions, dentists are expected to become severely anxious during the present outbreak (17). Anxiety is a bodily response to stress and fear, which includes physical and psychological impacts, such as a racing heart, sudation, giddiness, and agitation (18). Although mild anxiety is a natural protection against harmful stimuli (19), above normal levels, it impairs the immune system, which enhances the risk of viral infection (20). The aim of this study was to determine the measures taken among dentists and their working conditions and to investigate their relationship with dentists' anxiety levels during

the COVID-19 pandemic in Turkey. The null hypothesis was that the anxiety levels of dentists differ according to the measures they take and their working conditions during the pandemic.

Materials and Methods

This cross-sectional study was approved by the ethical board of Izmir Democracy University (no:2020/11-01). The study population included dentists who work in Turkey in the private sector, single dental offices, dental clinics, public hospitals, and oral and dental health centers (ODHC). Dental students and paramedical staff were not included in this study. Based on similar research (21), the power analysis determined that at least 320 participants were required for a 95% confidence interval.

The survey consisted of 46 questions and three parts. The first part of the survey with eight items included demographic and personal information, such as age, sex, marital status, having a chronic disease or not, professional experience, etc. The second part, with 17 items, consisted of the working conditions and the measures taken by dental practitioners. The last part of the survey consisted of the Beck Anxiety Inventory (BAI), which was developed by Beck et al. to measure the severity of anxiety in the week before. BAI involves 21 items with two factors that are described as "subjective/cognitive anxiety" (items 1, 4, 5, 7, 8, 9, 10, 11, 14, 15, 16, 17, and 19) and "somatic symptoms" (items 2, 3, 6, 12, 13, 18, 20, 21). Each one is scored from 0-3 (Not at all-Severely). The overall score is between 0 and 63. The level of anxiety is graded as minimal or absent (0-7), mild (8-15), moderate (16-25), or severe (26-63) (22). Adaptation, validity, and reliability of the inventory in the Turkish language were examined by Ulusoy et al. (23).

The questionnaire was created using Google Forms, and the survey link was delivered to the participants via email, social media platforms (Instagram, Facebook, etc.), and WhatsApp. Data were collected between June 3-10, 2020 (seven days), and 704 participants answered the survey questions by that time.

Statistical analysis

All data were analyzed using statistical software (SPSS Inc., version 21 IBM, Chicago, IL). Descriptive and frequency statistics were calculated for each variable. The chi-square test was used for all categorical variables. The normality of continuous variables was analyzed using the Shapiro-Wilk test, and it was found that all variables showed non-parametric distribution. The Kruskal-Wallis test was used for comparisons between the groups. After the Kruskal-Wallis test, if a significant difference was found, comparisons were evaluated with the Mann-Whitney U test and the Bonferroni Correction. The Pearson-Spearman test was used to evaluate the correlation between variables. The statistical significance level was set as $p < 0.05$.

Results

In total, 704 dentists (267 males, 437 females) were included in this study. 47.3% (n = 333), 28.0% (n =

197), 16.5% (n = 116), 6.8% (n = 48), and 1.4% (n = 10) were aged 25-35 years, 36-45 years, 46-55 years, 56-65 years, and 66 years and older, respectively. The most common chronic disease seen in dentists was hypertension (n = 44, 6.3%) (Table 1).

Table 1. Comparison of Beck anxiety levels according to demographic factors (n (%))

	Anxiety Levels (n (%))				p-value
	Minimal Anxiety	Mild Anxiety	Moderate Anxiety	Severe Anxiety	
Gender					
Male (n=267)	169 (63.0)	62 (23.2)	24 (9.0)	12 (4.5)	0.000*
Female (n=437)	156 (35.7)	137 (31.4)	99 (22.7)	45 (10.3)	
Age					
25-35 year (n=333)	146 (43.8)	96 (28.8)	62 (18.6)	29 (8.7)	0.277
36-45 year (n=197)	90 (45.7)	50 (25.4)	39 (19.8)	18 (9.1)	
46-55 year (n=116)	53 (45.7)	38 (32.8)	17 (14.7)	8 (6.9)	
56-65 year (n=48)	28 (58.3)	14 (29.2)	5 (10.4)	1 (2.1)	
66≤ year (n=10)	8 (80.0)	1 (10.0)	0 (0.0)	1 (10.0)	
Marital Status					
Single (n=238)	101 (42.4)	81 (34.0)	37 (15.5)	19 (8.0)	0.108
Married (n=466)	224 (48.1)	118 (25.3)	86 (18.5)	38 (8.2)	
Do you have kids?					
Yes (n=408)	195 (47.8)	105 (25.7)	74 (18.1)	34 (8.3)	0.381
No (n=296)	130 (43.9)	94 (31.8)	49 (16.6)	23 (7.8)	
Do you have any chronic diseases?					
No (n=561)	277 (49.4)	147 (26.6)	97 (17.3)	40 (7.1)	0.004*
Yes (n=143)	48 (33.6)	52 (36.4)	26 (18.2)	17 (11.9)	
Chronic Pulmonary Disease (n=21)	6 (28.6)	9 (42.9)	5 (23.8)	1 (4.8)	0.065
Diabetes Mellitus (n=18)	10 (55.6)	4 (22.2)	3 (16.7)	1 (5.6)	
Hipertension (n=44)	15 (34.1)	16 (36.4)	3 (6.8)	10 (22.7)	
Others (n=60)	17 (28.3)	23 (38.3)	15 (25.0)	5 (8.3)	
Is there anyone with chronic diseases in the risk group for covid 19 in the household?					
Yes (n=148)	62 (41.9)	39 (26.4)	28 (18.9)	19 (12.8)	0.129
No (n=470)	221 (47.0)	131 (27.9)	86 (18.3)	32 (6.8)	
I'm living alone (n=86)	42 (48.8)	29 (33.7)	9 (10.5)	6 (7.0)	
Do you have an expertise? If yes, what is your area of expertise?					
None (n=372)	170 (45.7)	106 (28.5)	67 (18.0)	29 (7.8)	0.965
Yes (n=332)	155 (46.7)	93 (28.0)	56 (16.9)	28 (8.4)	
Oral and Maxillofacial Surgery (n=50)	30 (60.0)	10 (20.0)	7 (14.0)	3 (6.0)	0.537
Oral and Maxillofacial Radiology (n=21)	10 (47.6)	3 (14.3)	5 (23.8)	3 (14.3)	
Endodontics (n=60)	30 (50.0)	17 (28.3)	9 (15.0)	4 (6.7)	
Orthodontics (n=34)	14 (41.2)	11 (32.4)	8 (23.5)	1 (2.9)	
Pedodontics (n=44)	19 (43.2)	12 (27.3)	8 (18.2)	5 (11.4)	
Periodontology (n=46)	24 (52.2)	15 (32.6)	5 (10.9)	2 (4.3)	
Prosthetic Dentistry (n=45)	19 (42.2)	12 (26.7)	9 (20.0)	5 (11.1)	
Restorative Dentistry (n=32)	9 (28.1)	13 (40.6)	5 (15.6)	5 (15.6)	
What is your professional experience period?					
1-5 year (n=127)	53 (41.7)	37 (29.1)	26 (20.5)	11 (8.7)	0.234
6-10 year (n=162)	74 (45.7)	51 (31.5)	23 (14.2)	14 (8.6)	
11-15 year (n=134)	68 (50.7)	29 (21.6)	29 (21.6)	8 (6.0)	
16-20 year (n=92)	39 (42.4)	22 (3.9)	22 (23.9)	9 (9.8)	
21≤ year (n=189)	91 (48.1)	60 (31.7)	23 (12.2)	15 (7.9)	

Chi-Square Test *p < 0.05

47.2% (n = 332) had expertise; most of the participants (n = 60, 8.5%) were endodontists. A total of 26.8% (n = 189), 23.0% (n = 162), 19% (n = 134), 18% (n = 127), and 13.1% (n = 92) of dentists surveyed had 21 and more, 6-10, 11-15, 1-5, and 16-20 years of experience, respectively (Table 1). Female dentists were found to be more anxious than male dentists, according to the Beck Anxiety Inventory ($p = 0.000$). It

was also observed that dentists with chronic diseases had higher anxiety levels ($p = 0.004$) (Table 1).

The responses of all participants to the Beck Anxiety Inventory are given in Table 2. Most of the dentists had minimal anxiety (n = 325, 46.2%), while 28% (n = 199) had mild anxiety, 17.5% (n = 123) had moderate anxiety, and 8.1% (n = 57) had severe anxiety (Figure 1).

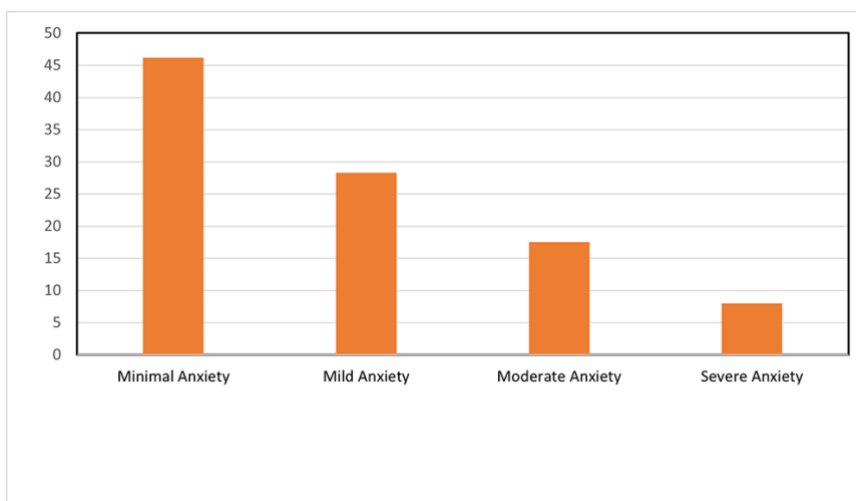


Figure 1. Beck Anxiety Scores of dentists surveyed (n)

In comparison with the Beck Anxiety Levels to the working conditions, dentists working in government hospitals and ODHCs were found to be more anxious than dentists who worked elsewhere ($p = 0.022$). The anxiety levels of dentists whose monthly incomes decreased were lower than those whose monthly incomes did not change or increased ($p = 0.015$). It was observed that dentists working in the field during the pandemic were more anxious than the other dentists ($p = 0.022$). Also, dentists whose work routines changed during the pandemic had higher anxiety levels than the others ($p = 0.045$) (Table 2). 67.0% (n = 50) of the dentists working in the field were assigned to filiation, 56.0% (n = 42) were sampling for diagnosis, 19.0% (n = 14) were working in the Turkish Statistical Institute (TUIK) survey studies, 19.0% (n = 14) were providing

medicine to the homes of sick patients, 16.0% (n = 12) were measuring temperatures, and 5.0% (n = 4) were taking care of emergency patients. One dentist was assigned to work in home care services. In the matter of using gowns, N95/FFP2 masks/goggles/face masks, and gloves during dental procedures, partially users' anxiety levels were more than never users ($p=0.015$). Dentists who had problems accessing healthcare and personal protective equipment were more anxious than those who did not ($p = 0.006$). Considering the working conditions and the measures taken, the anxiety levels of dentists who did not feel safe during this period were higher than those of those who felt safe ($p = 0.000$) (Table 3). The dental procedures frequently performed during the pandemic are detailed in Figure 2.

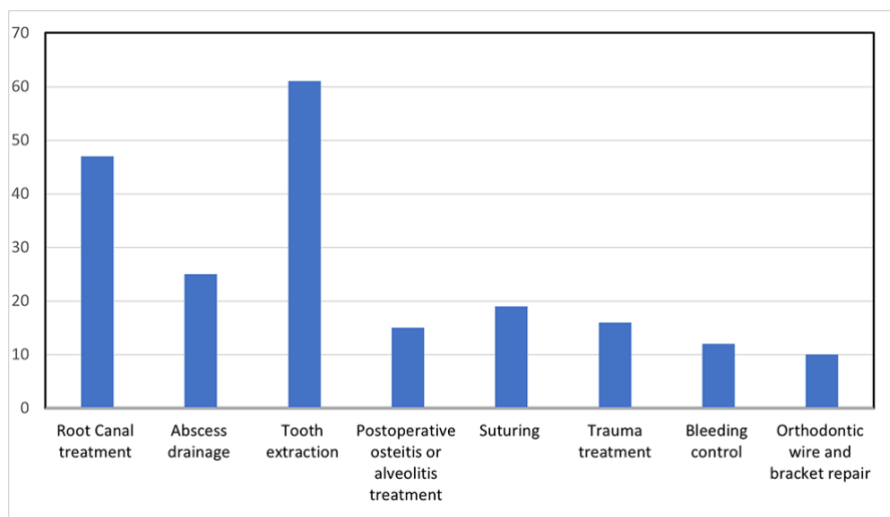


Figure 2. Frequently performed dental procedures during the pandemic period (%)

Table 2. Comparison of Beck Anxiety Levels according to working conditions (n (%))

	Anxiety Levels (n (%))				p value
	Minimal Anxiety	Mild Anxiety	Moderate Anxiety	Severe Anxiety	
Which institution do you work in? (n=704)					
Public Hospital/ ODHC (n=148)	52 (35.1)	38 (25.7)	40 (27.0)	18 (12.2)	0.022*
Private Dental Hospital/ Private Dental Clinic (n=117)	56 (47.9)	29 (24.8)	23 (19.7)	9 (7.7)	
Owned dental clinic (n=175)	88 (50.3)	51 (29.1)	24 (13.7)	12 (6.9)	
Owned/ Partnered private dental clinic (n=44)	24 (54.5)	13 (29.5)	6 (13.6)	1 (2.3)	
University Hospital (n=220)	105 (47.7)	68 (30.9)	30 (13.6)	17 (7.7)	
How your work routine has changed during the COVID-19 pandemic? (n=704)					
It hasn't changed, I'm working full time (n=28)	14 (50.0)	7 (25.0)	6 (21.4)	1 (3.6)	0.045*
I'm working in flexible working hours (n=537)	242 (45.1)	160 (29.8)	91 (16.9)	44 (8.2)	
I'm not working (n=139)	69 (49.6)	32 (23.0)	26 (18.7)	12 (8.6)	
How was your level of income affected during this period? (n=704)					
Not changed (n=150)	55 (36.7)	42 (28.0)	33 (22.0)	20 (13.3)	0.015*
Decreased (n=517)	257 (49.7)	145 (28.0)	81 (15.7)	34 (6.6)	
Increased (n=37)	13 (35.1)	12 (32.4)	9 (24.3)	3 (8.1)	
Have you received training on COVID-19 and the measures that dentists should take at your institution? (n=704)					
Yes (n=319)	146 (45.8)	100 (31.3)	50 (15.7)	23 (7.2)	0.305
No (n=385)	179 (46.5)	99 (25.7)	73 (19.0)	34 (8.8)	
Do you follow up-to-date information and publications on COVID-19? (n=704)					
Yes (n=511)	234 (45.8)	143 (28.0)	89 (17.4)	45 (8.8)	0.545
No (n=21)	14 (66.7)	4 (19.0)	2 (9.5)	1 (4.8)	
Sometimes (n=172)	77 (44.8)	52 (30.2)	32 (18.6)	11 (6.4)	
Have you been assigned to work in the field during the COVID-19 pandemic? (n=704)					
No (n=629)	294 (46.7)	180 (28.6)	111 (17.6)	44 (7.0)	0.022*
Yes (n=75)	31 (41.3)	19 (25.3)	12 (16.0)	13 (17.3)	
If you were assigned in the field, do you think that the necessary measures were taken by your institution during the assignment process? (n=74)					
Yes (n=37)	14 (37.8)	9 (24.3)	8 (21.3)	6 (16.2)	0.822
No (n=12)	7 (58.3)	2 (16.7)	1 (8.3)	2 (16.7)	
Partially (n=25)	10 (40.0)	7 (28.0)	3 (12.0)	5 (20.0)	
Which dental procedures do you apply during this period? (n=704)					
All routine dental practices (n=86)	39 (45.3)	24 (27.9)	15 (17.4)	8 (9.3)	0.278
Only emergency dental applications (n=400)	200 (50.0)	104 (26.0)	66 (16.5)	30 (7.5)	
I avoid dental procedures whenever possible (n=137)	77 (41.2)	62 (33.2)	34 (18.2)	14 (7.5)	
I do not practice dental practice during this period because I am assigned in the field. (n=31)	9 (29.0)	9 (29.0)	8 (25.8)	5 (16.1)	
<i>Chi-Square Test * p < 0.05</i>					

Table 3. Comparison of Beck Anxiety Levels according to precautions taken

	Anxiety Levels (n (%))				p-value
	Minimal Anxiety	Mild Anxiety	Moderate Anxiety	Severe Anxiety	
Do you use antimicrobial mouthwash (1% hydrogen peroxide or 0.2% povidone iodine) to your patients before the dental procedures? (n=565)					
Yes (n=292)	141 (48.3)	92 (31.5)	42 (14.4)	17 (5.8)	0.160
No (n=184)	74 (40.2)	51 (27.7)	48 (21.2)	20 (10.9)	
Partially (n=72)	33 (45.8)	20 (27.8)	12 (16.7)	7 (9.7)	
Do you inquire about travel history and temperature measurements from the patients to be treated and accompanying persons? (n=565)					
Yes (n=423)	185 (43.7)	136 (32.2)	69 (16.3)	33 (7.8)	0.213
No (n=63)	33 (52.4)	14 (22.2)	13 (20.6)	3 (4.8)	
Partially (n=64)	30 (46.9)	13 (20.3)	13 (20.3)	8 (12.5)	
Have the necessary measures been taken for the implementation of social isolation rules in patient waiting and treatment areas in your workplace? (n=565)					
Yes (n=441)	208 (47.2)	132 (29.9)	70 (15.9)	31 (7.0)	0.081
No (n=34)	11 (32.4)	8 (23.5)	8 (23.5)	7 (20.6)	
Partially (n=76)	31 (40.8)	24 (31.6)	15 (19.7)	6 (7.6)	
Do you use rubber dam and high suction saliva ejectors? (n=565)					
Yes (n=137)	71 (51.8)	42 (30.7)	17 (12.4)	7 (5.1)	0.016*
No (n=279)	117 (41.9)	74 (26.5)	57 (20.4)	31 (11.1)	
Partially (n=125)	54 (43.2)	47 (37.6)	17 (13.6)	7 (5.6)	
Do you recommend patients who have suspected COVID-19 (fever, cough, respiratory distress, etc.) to wear their medical masks and direct them to the nearest health institution? (n=565)					
Yes (n=461)	210 (45.6)	142 (30.8)	76 (16.5)	33 (7.2)	0.647
No (n=30)	16 (53.3)	5 (16.7)	5 (16.7)	4 (13.3)	
Partially (n=32)	16 (50.0)	8 (25.0)	6 (18.8)	2 (6.3)	
Do you use disposable gowns, N95 / FFP2 mask / goggles / face mask and gloves during dental procedures? (n=565)					
Yes (n=447)	208 (46.5)	142 (31.8)	67 (15.0)	30 (6.7)	0.012*
No (n=28)	11 (39.3)	6 (21.4)	8 (28.6)	3 (10.7)	
Partially (n=68)	30 (44.1)	11 (16.2)	18 (26.5)	9 (13.2)	
Do you have any problems in accessing healthcare equipment and personal protective equipment provided by your institution? (n=565)					
Yes (n=155)	60 (38.7)	49 (31.6)	34 (21.9)	12 (7.7)	0.010*
No (n=252)	133 (52.8)	74 (29.4)	29 (11.5)	16 (6.3)	
Partially (n=158)	63 (39.9)	44 (27.8)	34 (21.5)	17 (10.8)	
Do you feel safe considering your working conditions and measures taken during this period? (n=565)					
Yes (n=95)	66 (69.5)	22 (23.2)	2 (2.1)	5 (5.3)	0.000*
No (n=236)	80 (33.9)	77 (32.6)	55 (23.3)	24 (10.2)	
Partially (n=234)	256 (45.3)	167 (29.6)	97 (17.2)	45 (8.0)	

Chi-Square Test * $p < 0.05$

Women had higher anxiety levels than men when the subjective anxiety and somatic symptoms of dentists were compared between genders ($p = 0.000$). The subjective anxiety levels of the 66-year-old-and-older dentists were found to be lower than those of the other age groups ($p < 0.01$). Marital status and having children did not seem to affect anxiety levels ($p > 0.05$). Dentists with chronic diseases had more subjective anxiety and somatic symptoms ($p = 0.002$ and $p = 0.000$, respectively) ($p < 0.05$).

When we compared subjective anxiety and somatic symptoms according to working conditions, dentists working in public hospitals and ODHC were found to be more anxious than dentists in other

workplaces ($p = 0.006$ and $p = 0.001$, respectively). The subjective anxiety and somatic symptom levels of dentists whose monthly incomes decreased were lower than those whose monthly incomes did not change or increased ($p = 0.005$ and $p = 0.000$, respectively). Dentists working in the field during the pandemic were more anxious than other dentists with somatic symptoms ($p = 0.012$). The subjective anxiety and somatic symptom levels of the dentists working in the field were higher than those of those who performed only emergency dental practices and avoided dental procedures whenever possible ($p = 0.021$ and $p = 0.001$, respectively) (Table 4).

Table 4. Subjective Anxiety and Somatic Symptom Levels according to working conditions. All data are expressed as median (Q1-Q3) unless otherwise noted.

	Subjective Anxiety	p-value	Somatic Symptoms	p-value
Which institution do you work in? (n=704)				
Public Hospital/ ODHC (n=148)	8.50(4.00-14.00)†	0.006*	3.00(1.00-6.00)†	0.001*
Private Dental Hospital/ Private Dental Clinic (n=117)	6.00(2.00-12.00)		2.00(0.00-6.00)	
Owned dental clinic (n=175)	5.00(3.00-11.00)		1.00(0.00-4.00)	
Owned/ Partnered private dental clinic (n=44)	5.50(2.00-8.75)		1.00(0.00-4.00)	
University Hospital (n=220)	3.00(6.00-10.00)		2.00(0.00-4.00)	
How did your work routine change during the COVID-19 pandemic? (n=704)				
It did not changed, I'm working full time (n=28)	7.50(2.00-12.00)	0.763	3.00(0.25-4.00)	0.697
I'm working in flexible working hours (n=537)	6.00(3.00-12.00)		2.00(0.00-5.00)	
I'm not working (n=139)	6.00(3.00-13.00)		2.00(0.00-4.00)	
How was your level of income affected during this period? (n=704)				
Not changed (n=150)	8.00(3.00-14.00)	0.005*	3.00(1.00-6.00)	0.000*
Decreased (n=517)	6.00(3.00-11.00)‡		1.00(0.00-4.00)‡	
Increased (n=37)	8.00(4.50-13.00)		3.00(0.00-5.50)	
Have you received training on COVID-19 and the precautions that dentists should take at your institution? (n=704)				
Yes (n=319)	6.00(3.00-12.00)	0.466	2.00(0.00-4.00)	0.685
No (n=385)	7.00(3.00-12.00)		2.00(0.00-4.00)	
Do you follow up-to-date information and publications on COVID-19? (n=704)				
Yes (n=511)	7.00(3.00-12.00)	0.058	2.00(0.00-4.00)	1.000
No (n=21)	4.00(2.00-6.50)		1.00(0.00-5.00)	
Sometimes (n=172)	6.00(3.00-11.00)		2.00(0.00-5.00)	
Have you been assigned to work in the field during the COVID-19 pandemic? (n=704)				
No (n=629)	6.00(3.00-12.00)	0.097	2.00(0.00-4.00)	0.012*
Yes (n=75)	8.00(4.00-14.00)		3.00(1.00-7.00)	
If you were assigned in the field, do you think that the necessary measures were taken by your institution during the assignment process? (n=74)				
Yes (n=37)	8.00(4.00-14.00)	0.783	2.00(1.00-7.50)	0.903
No (n=12)	4.50(2.25-12.00)		2.50(0.25-6.75)	
Partially (n=25)	7.00(2.50-17.00)		3.00(0.50-7.00)	
Which dental procedures do you apply during this period? (n=704)				
All routine dental practices (n=86)	6.50(2.00-12.00)	0.021*	3.00(0.00-6.00)	0.001*
Only emergency dental applications (n=400)	5.00(2.00-11.75)§		1.00(0.00-4.00)§	
I avoid dental procedures whenever possible (n=137)	7.00(4.00-12.00)§		2.00(0.00-4.00)§	
I do not practice dental practice during this period because I am assigned in the field. (n=31)	8.00(5.00-14.00)		6.00(1.00-8.00)	
<i>Kruskall Wallis Test</i>	$p < 0.05$ * significant difference between groups			
<i>Mann Whitney U Test</i>	$p < 0.01$ † significantly higher than other working institutions			
	$p < 0.01$ ‡ significantly lower than not changed incomes			
	$p < 0.01$ § significantly lower than working in the field			

A comparison of subjective anxiety and somatic symptom levels with respect to the measures taken showed that dentists who did not use antimicrobial mouthwashes before dental procedures had more somatic symptoms ($p=0.003$). Both subjective anxiety levels and the somatic symptoms of dentists who did not take the necessary measures for the implementation of social isolation rules in patient waiting and treatment areas and who did not use rubber dam and saliva absorbers with high absorption power were increased ($p < 0.01$). Dentists who used disposable gowns, N95/FFP2 masks, goggles/face masks, and gloves during dental procedures

partially/sometimes had more somatic symptoms than users ($p = 0.006$). Dentists who had problems accessing health and personal protective equipment had more subjective anxiety and somatic symptoms than those who did not (all, $p = 0.000$). When subjective anxiety and somatic symptoms were compared among the dentists, the dentists who did not feel safe or felt partially safe in this period were more anxious when their working conditions and measures were considered (all, $p=0.000$) (Table 5). There was a significant positive correlation between subjective anxiety and somatic symptoms ($p < 0.05$).

Table 5. Subjective Anxiety and Somatic Symptom Levels according to precautions. All data are expressed as median (Q1-Q3) unless otherwise noted.

	Subjective Anxiety	p-value	Somatic Symptoms	p-value
Do you use antimicrobial mouthwash (1% hydrogen peroxide or 0.2% povidone iodine) to your patients before the dental procedures? (n=565)				
Yes (n=292)	6.00(2.00-11.00)	0.080	1.00(0.00-4.00)	0.000*
No (n=184)	7.00(3.00-13.00)		2.50(1.00-5.00)†	
Partially (n=72)	6.00(2.00-12.00)		2.00(1.00-5.50)	
Do you inquire about travel history and temperature measurements from the patients to be treated and accompanying persons? (n=565)				
Yes (n=423)	6.00(3.00-12.00)	0.209	2.00(0.00-4.00)	0.613
No (n=63)	4.00(1.00-11.00)		2.00(0.00-5.00)	
Partially (n=64)	7.00(3.00-13.50)		2.00(0.00-6.00)	
Have the necessary precautions been taken for the implementation of social isolation rules in patient waiting and treatment areas in your workplace? (n=565)				
Yes (n=441)	6.00(2.00-12.00)	0.029*	2.00(0.00-4.00)‡	0.001*
No (n=34)	10.00(3.75-17.00)†		3.00(0.75-8.00)	
Partially (n=76)	7.00(3.00-12.00)		3.00(1.00-5.00)	
Do you use rubber dam and high suction saliva ejectors? (n=565)				
Yes (n=137)	5.00(2.00-11.00)	0.022*	1.00(0.00-4.00)	0.029*
No (n=279)	7.00(3.00-13.00)†		2.00(0.00-5.00)†	
Partially (n=125)	6.00(2.00-10.00)		2.00(0.00-4.00)	
Do you recommend patients who have suspected COVID 19 (fever, cough, respiratory distress, etc.) to wear their medical masks and direct them to the nearest health institution? (n=565)				
Yes (n=461)	6.00(3.00-12.00)	0.644	2.00(0.00-4.00)	0.641
No (n=30)	4.00(1.75-13.25)		2.00(0.00-5.00)	
Partially (n=32)	6.50(4.00-12.75)		1.00(0.00-4.75)	
Do you use disposable gowns, N95 / FFP2 mask / goggles / face mask and gloves during dental procedures? (n=565)				
Yes (n=447)	6.00(2.00-11.00)	0.053	2.00(0.00-4.00)	0.005*
No (n=28)	9.00(2.50-14.00)		2.00(1.00-6.00)	
Partially (n=68)	7.00(3.25-15.00)		3.00(1.00-6.75)†	
Do you have any problems in accessing healthcare equipment and personal protective equipment provided by your institution? (n=565)				
Yes (n=155)	7.00(2.00-12.00)§	0.000*	3.00(0.00-5.00)§	0.001*
No (n=252)	5.00(2.00-10.00)		1.00(0.00-4.00)	
Partially (n=158)	8.00(4.00-13.00)§		2.00(1.00-5.00)§	
Do you feel safe considering your working conditions and measures taken during this period? (n=565)				
Yes (n=95)	2.00(0.00-6.00)	0.000*	1.00(0.00-2.00)	0.000*
No (n=236)	9.00(4.00-14.00)††		3.00(1.00-5.00)†	
Partially (n=234)	6.00(3.00-11.00)†		0.00(2.00-5.00)†	

Kruskal-Wallis Test
Mann-Whitney U Test

$p < 0.05$ * significant difference between groups
 $p < 0.01$ † significantly higher than who said yes
 $p < 0.01$ ‡ significantly higher than who said partially
 $p < 0.01$ § significantly higher than who said no

Discussion

One of the effective regulations to support dental practitioners in the highest risk group in pandemic is to be aware of their working conditions and the measures they take. It is important to know the reasons for their anxiety and eliminate them. Before attempting to support healthcare professionals, the sources of their anxiety and fear should be investigated. The easiest way to do this is to ask them what the sources of their anxiety are (9). Several studies have researched the anxiety status of medical workers (9, 24). However, only a few studies have investigated the psychological impact of the pandemic among dentists (25, 26). The present research investigated not only the measures taken by dentists' working conditions but also their anxiety levels during the pandemic in Turkey.

For dental practitioners, it is recommended by the ADA (27) to provide only emergency treatments during the pandemic to reduce the risk of COVID-19 transmission. Urgent dental procedures are defined as "potentially life-threatening conditions that require immediate treatment to stop ongoing tissue bleeding, alleviate severe pain, or infection," which involves severe toothache, uncontrolled bleeding, trauma (avulsion, luxation), certain infections (abscess, cellulitis, pericoronitis, postoperative osteitis, dry socket), and certain urgent restorative treatments (28). In our study, more than half of the dentists (n = 400) stated that they applied only emergency dental applications during this period.

Dentists who had been working in a public hospital or ODHC (n = 148) reported that they were more anxious than other dentists. Also, subjective anxiety levels and somatic symptoms were higher in these groups. This may be because more than half of the dentists who work in public hospitals and ODHCs have been tasked with working in the field (n = 75), and most of them work in filiation teams and sample for diagnosis teams. In these tasks, their working conditions and protective clothes may have caused an increase in their somatic symptoms. As expected, the dentists who did not wear protective clothes (disposable gowns, N95/FFP2 masks/goggles/face masks, and gloves) during the dental treatments, and those who had difficulties accessing healthcare and personal protective equipment provided by their institutions, had higher somatic symptoms. Therefore, the null hypothesis of the study was supported by our results.

According to the results of the study, almost half of the dentists had minimal anxiety, and only 57 had severe anxiety. This may be because most dentists switched to flexible working hours during the pandemic. Another possible explanation may be that knowledge about pandemics and medical education might have positively affected the anxiety levels of dentists. Interestingly, the anxiety levels of dentists with decreasing incomes also decreased. However, this result can be explained by the decrease in anxiety levels of dental practitioners who work less. In other words, it can be concluded that the harder dentists work, the more anxiety they feel during the COVID-19 pandemic.

In an epidemic situation, anxiety is the main emotional response (29), and Wang et al. (30) showed that anxiety disorder was three times more common in women than men during the COVID-19 outbreak. According to the results of a cross-sectional study performed in Turkish society, it is suggested that women and individuals who have chronic diseases were the most psychologically affected groups (anxiety, depression, and health anxiety) during the COVID-19 outbreak (21). These findings are similar to ours, although our samples included dentists. Further, and supporting these findings, female dentists and dentists who had chronic diseases also had higher subjective anxiety levels and more somatic symptoms in our study.

In a recent cross-sectional study, an online survey was conducted among 356 dentists in Poland to test their anxiety levels using the COVID-19 Fear Scale (FCV-19 S) during the pandemic (25). It was reported that the studied sample of dental practitioners was comparatively low, and work experience did not significantly affect anxiety levels (25). These results are in line with ours. Unlike our results, however, gender was not related to anxiety level. This may be due to the different societies and working conditions or the sizes of the sample being studied.

The major limitation of the present study is that the data were collected over a period that comprised seven days. In addition, a pandemic is a dynamic process, and treatment modalities and prevention measures recommended for the coronavirus have been continually updating. Therefore, the working conditions and anxiety levels of dentists may have changed over time. Despite these limitations, the findings of this study are important for revealing the anxiety levels of dentists and the factors that may affect them in Turkey during the COVID-19 pandemic.

Conclusions

In conclusion, the results of this study outline that the anxiety levels of female dentists, dentists who have chronic diseases, and those who work in public hospitals were higher than male dentists, dentists who don't have chronic diseases and those who work in private dental clinics in the COVID-19 pandemic in Turkey. Further, working conditions and some of the measures taken affected anxiety levels. Efforts should be made to reduce the anxiety of dentists, especially those working in public. Future studies are required for knowledge about dental practitioners' working conditions, measures they take, and anxiety changes over the course of the COVID-19 pandemic to improve their working comfort.

Ethical Approval: Ethics committee approval was received for this study from Izmir Democracy University, ethical board committee, Institutional Review Board in accordance with the World Medical Association Declaration of Helsinki, with the approval number: 2020/11-01).

Peer-review: Externally peer-reviewed.

Author Contributions: Conception - F.K.; Design - F.K., P.M.D., B.K.; Supervision - F.K.; Materials - F.K., P.M.D.; Data Collection and/or Processing - B.K., A.S.; Analysis and/or Interpretation - P.M.D.; Literature Review - B.K., A.S.; Writer - F.K., A.S.; Critical Review - P.M.D.

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

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

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