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ORIGINAL RESEARCH ARTICLE

The Awareness, Anxiety and Depression Levels of Dentists and Dentistry Patients Regarding the COVID-19 Pandemic

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Abstract

Purpose: The new coronavirus (COVID-19) pandemic which started in the late 2019 has had significant effects on all areas, especially in the health sector. The purpose of this study was to investigate the awareness, anxiety and depression levels of dentists and dental patients regarding the COVID-19 pandemic.
Materials & Methods: This was an online survey study including 679 individuals at the ages of 12-60 consisting of dentists and dentistry patients (female, n=395; male, n=284). The participants were reached using social media tools such as WhatsApp, Twitter, Facebook and Instagram. The survey was consisted of 3 parts. The first part included a set of questions on sociodemographic characteristics, knowledge level of the COVID-19 pandemic, attitudes and perceptions regarding infection control, and sterilization at dental clinics. The second and third parts consisted of the Generalized Anxiety Disorder-7 (GAD-7) and Depression Severity (PHQ-9) questionnaires examining psychological status in the pandemic period. The level of significance was accepted as α=0.05.
Results: While the rate of experiencing occupational future anxiety in the dentists was significantly higher than that in the patients, the rate of making plans for the future in the patient group was significantly higher in comparison to the dentists ($p<0.05$). The rates of thinking that the risk of disease during dental procedures is high were significantly different between the dentist and patient groups ($p<0.05$). There was also a significant difference between the groups in terms of their GAD-7 scores, where the scores of the dentists were found to be lower than those of the patients ($p<0.05$). There was no significant difference between the PHQ-9 scores of the groups ($p>0.05$).
Conclusion: Both the dentists and patients thought they had sufficient information on the disease and its ways of transmission and took most of the necessary precautions. Almost all participants had a consensus on the idea that the risk of infection is high during dental procedures. Both the patient and dentist groups had moderate levels of generalized anxiety disorder and depression, while these levels were higher among the patients.

Key words: anxiety; COVID-19; dentistry; infection control.

Introduction

In December 2019, a coronavirus that had not been previously found in humans was defined in the city of Wuhan in the Hubei province in China. [1] On 8 January 2020, the novel coronavirus was officially declared as the causal pathogen of COVID-19 by the Chinese Center for Disease Control and Prevention. [2] The World Health Organization (WHO) defined this virus which cause pneumonia with unknown cause in humans as a new coronavirus (2019-nCoV). The number of patients infected with the novel coronavirus increased rapidly in months, the disease showed an intercontinental spread, [3] and it was declared by WHO as a global pandemic on 11 March 2020. [4] The general data indicate that people of all ages are susceptible to this contagious disease Although COVID-19 patients showing symptoms are the main source of infection, patients who are asymptomatic and at the incubation stage are also carriers. [5,6]

Considering infection through droplets and aerosols, dentists are in high-risk group. During the COVID-19 pandemic, dentists,

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assistive oral and dental health personal, and patients may be exposed to viruses and bacteria that may infect the oral cavity and respiratory airways during dental treatments, while they may also become hosts of these microorganisms. [7,8] Due to the characteristics of dental environments, the risk of cross-contamination between dentists and patients is considered to be high. [9] It was reported that inhaling aerosols that are formed during dental treatments poses a risk in terms of COVID-19 as high as that in bronchoscopy. [10] It was proposed that COVID-19 could also be directly or indirectly spread through saliva. [11] As COVID-19 spreads through droplets, dental procedures need to be carried out with a protective apron, protective goggles, facemasks, gloves, hairnets, and face protectors (plates or face shields). [7]

Emergency and effective infection control protocols carry great importance for dentistry practices in countries/regions that are potentially affected by COVID-19. Due to the disease's form of infection, healthcare workers have the highest risk of being infected. The COVID-19 virus which is highly contagious causes problems for health systems including long working hours, physical and psychological stress, burnout and fatigue and creates an additional danger. [12] At the outbreak of the epidemic, in many places, dentists are not allowed to provide conventional dental treatment, and only emergency treatments are implemented. [13] In this pandemic period, patients might not be sure on whether or not they should attend their dentist appointments, and they experience concerns about this issue. Moreover, as patients are facing a new situation that they had not experienced at all before, very little is known about the anxiety levels they experience regarding the continuity of their dental treatments, interruptions and effects that could occur as a result of these. Similarly, an unknown and anxiety-inducing period is being experienced in terms of how dentists will manage patient appointments. In this context, the purpose of this study is to investigate the awareness, anxiety and depression levels of dentists and dentistry patients regarding COVID-19 in the pandemic process and is to create data for precaution and attempt in another possible epidemic.

Materials and Methods

This study was a survey study which was carried out between April and August 2020 with a total of 679 participants of which 58.2% (n=395) were female, and 41.8% (n=284) were male, and ethical approval for the study was obtained from the Ethics Board of XXX University (2020/262). To determine the sample size, power analysis was conducted using the G*Power (v3.1.7) software. According to Cohen's effect size coefficients, assuming that the assessments to be made between two independent groups would have a small effect size (d=0.25), it was concluded that the groups should include at least 253 individuals each on the level of α=0.05.

The sample was consisted of all dentists working at state institutions providing oral and dental health services, private clinics, hospitals or universities in Turkey, and all dentistry patients receiving such treatment. Social media tools such as WhatsApp, Twitter, Facebook and Instagram were used to distribute the survey forms to the participants. The inclusion criteria were as being aged between 12 and 60, having the capacity to read and respond to the surveys, being accessible through social media like WhatsApp, Twitter, Facebook and Instagram and responding to correspondence on these platforms. Incompletely filled questionnaires were not accepted for the study.

The Google Forms platform was used to create the questions and share them with the participants, while consent was obtained from the volunteering participants before starting the study. The questionnaire consisted of 45 questions. The questions were on the sociodemographic characteristics of the dentists and dentistry patients, whether or not they had sufficient knowledge about the COVID-19 pandemic, how they received their information, whether or not they, their family or individuals around them were infected with COVID-19, what kinds of precautions were taken in relation to the disease and whether or not these were adequate, whether or not the coronavirus had a risk of infection by dental treatment and whether or not the precautions taken were adequate and what the thoughts of the dentists about the coronavirus were, in addition to questionnaires regarding Generalized Anxiety Disorder-7 (GAD-7) and Depression Severity (PHQ-9) (Table 1).

Table 1. The sections of the questionnaire and question distributions

Section of the Questionnaire	Number of questions
Sociodemographic characteristics, COVID-19 pandemic	29
GAD-7	7
PHQ-9	9
Total	**45**

In PHQ-9 Depression Severity scale, the scores are evaluated as "never = 0", a few days = 1", "more than half of the days = 2", "almost every day = 3". For 9 questions, the total score of PHQ-9 varies between 0 and 27. Values that are obtained in the questionnaire as higher than 5, 10, 15 and, 20 indicate mild, moderate, moderate-severe and severe depression levels, respectively. [14,15]

In GAD-7 Anxiety Scale, the scores are evaluated as "never = 0", a few days = 1", "more than half of the days = 2", "almost every day = 3". For 7 questions, the total score of GAD-7 varies between 0 and 21. Values that are obtained in the questionnaire as higher than 5, 10 and 15 indicate mild, moderate, and severe anxiety levels, respectively. [14,16]

Statistical Analyses

For the statistical analyses, the NCSS (Number Cruncher Statistical System) 2007 (Kaysville, Utah, USA) program was used. While analyzing the study data, descriptive statistical methods (mean, standard deviation, median, frequency, ratio, minimum, maximum) were utilized. The compatibility of the quantitative data with normal distribution was tested by using Shapiro-Wilk test and graphical assessments. Mann Whitney U test was used to compare two groups. Kruskal Wallis test was used to compare three and more groups not showing normal distribution, whereas Bonferroni-Dunn test was used in the pairwise comparisons. The qualitative data were compared by using Pearson's Chi-Squared test, Fisher Freeman Halton test, and Fisher's Exact test. Spearman's Correlation Analysis was used to analyze the relationships between the variables. The level of significance was accepted as α=0.05.

Results

Among the 679 participants, 5.9% (n=40) were 12-15, 7.4% (n=50) were 15-20, 30.6% (n=208) were 20-25, 20.0% (n=136) were 25-30, 17.1% (n=116) were 30-35, 10.2% (n=69) were 35-40 years old, and 8.8% (n=60) were 40 years old or older. There was no statistically significant difference between the groups in terms of their gender distributions (p>0.05) (Table 2).

When the places where the participants received information on the disease were examined, the rate of getting information from WhatsApp groups, colleagues, friends, and other places among the dentists was higher than that among the patients (p<0.05). The statuses of having knowledge about the ways of the disease to spread and having interruptions in work due to the pandemic were higher in the dentist (p<0.05). Looking at the precautions taken for the disease, most of them were higher among the dentists than the patients (p<0.05). Also, rate of thinking that the precautions that were taken would protect them from the disease was higher in patients than that in the dentist group (p<0.05) (Table 3, Figure 1).

Table 2. Assessment of Demographic Characteristics Based on Groups

		Dentist (n=272)	Patient (n=407)	*p*
Gender	**Female**	155 (57,0)	240 (59,0)	[a]*0,608*
	Male	117 (43,0)	167 (41,0)	
Age (year)	**12-15**	0 (0)	40 (9,8)	[a]*0,001***
	15-20	0 (0)	50 (12,3)	
	20-25	43 (15,8)	165 (40,5)	
	25-30	91 (33,5)	45 (11,1)	
	30-35	75 (27,6)	41 (10,1)	
	35-40	35 (12,9)	34 (8,4)	
	≥40	28 (10,3)	32 (7,9)	
Education status	**High School**	0 (0)	95 (23,3)	[b]*0,001***
	University	132 (48,5)	300 (73,7)	
	Doctorate/Specialization	139 (51,1)	4 (1,0)	
	Other	1 (0,4)	8 (2,0)	
Systemic disease status	**Yes**	34 (12,5)	23 (5,7)	[a]*0,003***
	No	234 (86,0)	372 (91,4)	
	Undecided	4 (1,5)	12 (2,9)	

[a]:Pearson Chi-Square Test, [b]:Fisher Freeman Halton Test, *:p<0,01

Table 3. Assessment of COVID-19-Related Characteristics Based on Groups

		Dentist (n=272)	Patient (n=407)	*p*
Status of having sufficient knowledge on the disease	**Yes**	211 (77,6)	305 (74,9)	[a]*0,475*
	No	19 (7,0)	25 (6,1)	
	Undecided	42 (15,4)	77 (18,9)	
■ Sources of information on the disease	**Social media**	215 (79,0)	315 (77,4)	[a]*0,611*
	Internet news site	183 (67,3)	320 (78,6)	[a]*0,001***
	Whatsapp group	110 (40,4)	64 (15,7)	[a]*0,001***
	Radio	11 (4,0)	16 (3,9)	[a]*0,941*
	Television	196 (72,1)	297 (73)	[a]*0,794*
	Newspaper	24 (8,8)	46 (11,3)	[a]*0,298*
	Colleague, friend	226 (83,1)	135 (33,2)	[a]*0,001***
	Other	48 (17,6)	49 (12,0)	[a]*0,041**
Status of having had the disease	**Yes**	3 (1,1)	5 (1,2)	[c]*1,000*
	No	269 (98,9)	402 (98,8)	
Status of having someone in the family who had the disease	**Yes**	8 (2,9)	13 (3,2)	[a]*0,852*
	No	264 (97,1)	394 (96,8)	
Status of having someone around who had the disease	**Yes**	78 (28,7)	96 (23,6)	[a]*0,137*
	No	194 (71,3)	311 (76,4)	
Knowledge status on the ways the disease spreads	**Yes**	270 (99,3)	393 (96,6)	[a]*0,023**
	No	2 (0,7)	14 (3,4)	
Status of interrupting work due to the pandemic	**Yes**	213 (78,3)	284 (69,8)	[a]*0,014**
	No	59 (21,7)	123 (30,2)	
■ Precautions taken for the disease	**Wearing facemask**	267 (98,2)	337 (82,8)	[a]*0,001***
	Using gloves	201 (73,9)	232 (57,0)	[a]*0,001***
	Frequent handwashing	266 (97,8)	385 (94,6)	[a]*0,040**
	Staying home unless one has to	263 (96,7)	388 (95,3)	[a]*0,383*
	Avoiding public transportation	235 (86,4)	260 (63,9)	[a]*0,001***
	Using hand disinfectants	215 (79,0)	272 (66,8)	[a]*0,001***
	Using cologne	200 (73,5)	330 (81,1)	[a]*0,020**
	Avoiding physical contact with people	262 (96,3)	327 (80,3)	[a]*0,001***
	Not visiting other people as a guest	237 (87,1)	299 (73,5)	[a]*0,001***
	Paying attention to nutrition	194 (71,3)	223 (54,8)	[a]*0,001***
	Nothing	3 (1,1)	1 (0,2)	[c]*0,308*
Status of thinking precautions taken will protect one from the disease	**Yes**	209 (76,8)	343 (84,3)	[a]*0,015**
	No	63 (23,2)	64 (15,7)	

■ :Multiple options were allowed, [a]:Pearson Chi-Square Test, [c]:Fisher's Exact Test, *:p<0,05 **:p<0,01

There was a significant difference between the groups in terms of thinking that the risk of infection is high during dental procedures, where the rate of the dentists was higher than that of the patients (p<0.01). The rate of finding the precautions taken by pa-

Table 4. Assessment of Characteristics Related to Dental Treatment in the Pandemic Process Based on Groups

		Dentist (n=272)	Patient (n=407)	*p*
Status of thinking that risk of infection is high during dental procedures	**Yes**	271 (99,6)	329 (80,8)	[a]*0,001***
	No	1 (0,4)	78 (19,2)	
■ Reasons for visiting the dentist	**Toothache**	69 (25,4)	96 (23,6)	[a]*0,596*
	Tooth extraction	15 (5,5)	27 (6,6)	[a]*0,553*
	Orthodontic treatment	19 (7,0)	84 (20,6)	[a]*0,001***
	Root canal treatment	15 (5,5)	25 (6,1)	[a]*0,734*
	Implant	10 (3,7)	7 (1,7)	[a]*0,110*
	Prosthetics	18 (6,6)	7 (1,7)	[a]*0,001***
	Other	15 (5,5)	49 (12,0)	[a]*0,004***
Status of finding precautions taken by patients and relatives adequate	**Yes**	16 (5,9)	119 (29,2)	[a]*0,001***
	No	256 (94,1)	288 (70,8)	
Status of finding precautions taken by dentists adequate	**Yes**	127 (46,7)	266 (65,4)	[a]*0,001***
	No	145 (53,3)	141 (34,6)	
Views on the risk of infection at dental hospitals	**Safe**	51 (18,8)	106 (26,1)	
	Unsafe	163 (59,9)	187 (45,9)	[a]*0,002***
	Undecided	58 (21,3)	114 (28,0)	
Views on the approach of dentists in the pandemic process	**All treatments**	2 (0,7)	5 (1,2)	
	Treatments with appointments	3 (1,1)	22 (5,4)	[b]*0,001***
	Only emergency treatments	236 (86,8)	357 (87,7)	
	Treatment should not be performed	31 (11,4)	23 (5,7)	

■ :Multiple options were allowed, [a]:Pearson Chi-Square Test, [b]:Fisher's Exact Test, **:p<0,01

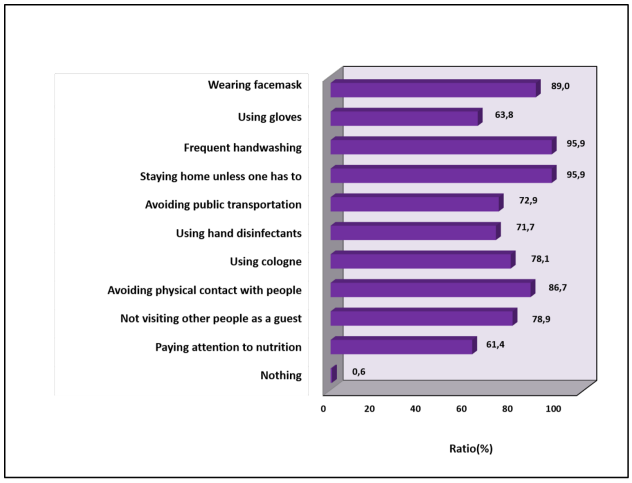

Figure 1. A dentigerous cyst that is attached to the cementoenamel junction of a mandibular left third molar was successfully detected by the model

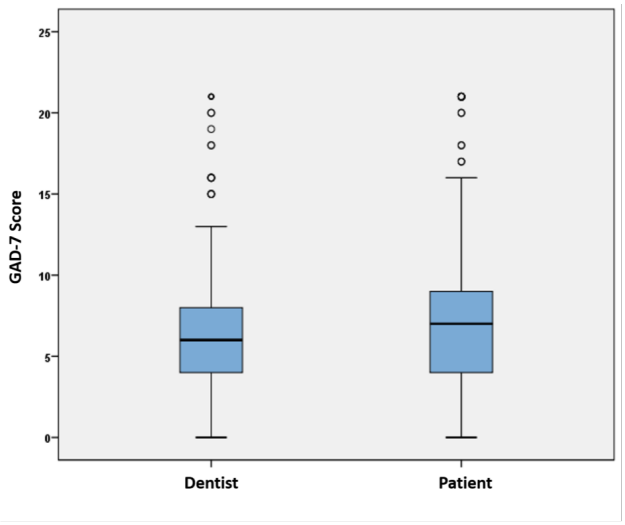

Figure 2. A dentigerous cyst that is attached to the cementoenamel junction of a horizontally impacted mandibular right third molar was successfully detected by the model

tients, their relatives and dentists to be adequate was higher in the patient group than the dentists (p<0.01). The opinions that dental hospitals carry the risk of infection varied significantly between the groups, where this rate was higher in the patient group than the dentist group (p<0.01). The opinions on the approach of dentists in the pandemic process differed significantly between the groups (p<0.01). The rate of the participants in the patient group who stated that treatments with appointments should be carried out was higher than that in the dentists (p<0.01). The rate of the participants in the dentist group who stated that no dental treatment should be performed was higher than that in the patients (p<0.01) (Table 4).

There was a significant difference between the GAD-7 scores of the groups where the scores of the dentists were lower than those of the patients (p<0.05). There was no significant difference between the PHQ-9 scores of the groups (p>0.05) (Table 5, Figure 2,Figure 3).

The GAD-7 scores of dentists differed significantly based on the presence of someone around who had experienced the coronavirus disease, where those who had such someone around had higher levels (p<0.01). There was a significant difference in the GAD-7 scores based on status of thinking precautions taken would protect the person from the disease, where the scores of the dentists who thought so were lower (p<0.01). There was a significant difference in the GAD-7 scores based on status of finding precautions taken by patients and their relatives adequate, where the scores of the dentists who thought these were adequate were lower (p<0.05) (Table 6).

The PHQ-9 scores of dentist showed a significant difference based on status of having sufficient knowledge on the disease (p<0.05). There was a significant difference in the PHQ-9 scores based on the presence of someone around who had experienced the coronavirus disease, where the dentists with such someone around had higher scores (p<0.01). There was a significant difference in the

Table 5. Evaluation of GAD-7 and PHQ-9 Scores by Groups

		Dentist (n=272)	Patient (n=407)	p
GAD-7 scores	Min-Max (Median)	0-21 (6)	0-21 (7)	[d]0,046*
	Mean±Sd	6,62±3,97	7,00±4,30	
PHQ-9 scores	Min-Max (Median)	0-27 (8)	0-27 (7)	[d]0,992
	Mean±Sd	8,44±5,27	8,59±5,68	

[d]:Mann Whitney U Test
*:p<0,05

Table 6. Assessment of GAD-7 Scores Based on Characteristics Related to the Coronavirus Process

Dentist (n=272)		GAD-7 scores			p
		n	Min-Max (Median)	Mean±Sd	
Status of having sufficient knowledge on the disease	**Yes**	211	0-21 (6)	6,49±3,81	
	No	19	0-16 (5)	5,53±3,69	[e]0,153
	I am indecisive	42	1-21 (7)	7,76±4,66	
Status of having someone around who had the disease	**Yes**	78	0-21 (7)	7,71±4,37	[d]0,002**
	No	194	0-21 (6)	6,19±3,72	
Status of interrupting work due to the pandemic	**Yes**	213	0-21 (6)	6,50±3,82	[d]0,970
	No	59	2-21 (6)	7,05±4,47	
Status of thinking precautions taken will protect one from the disease	**Yes**	209	0-21 (6)	6,22±3,52	[d]0,006**
	No	63	0-21 (7)	7,97±4,99	
Status of finding precautions taken by patients and relatives adequate	**Yes**	16	0-15 (4)	5,06±4,78	[d]0,020*
	No	256	0-21 (6)	6,72±3,90	
Status of finding precautions taken by dentists adequate	**Yes**	127	0-21 (6)	6,36±3,76	[d]0,586
	No	145	0-21 (6)	6,85±4,15	
Views on the risk of infection at dental hospitals	**Safe**	51	1-21 (6)	6,43±3,13	
	Unsafe	163	0-21 (6)	6,90±4,04	[e]0,561
	Undecided	58	0-21 (6)	6,02±4,40	
Status of experiencing concerns in seeing patients	**Yes**	260	0-21 (6)	6,67±3,95	[d]0,339
	No	12	0-11 (3)	5,58±4,52	
Status of providing dental treatment for a coronavirus patient	**Yes**	15	0-12 (4)	5,93±4,40	[d]0,291
	No	257	0-21 (6)	6,66±3,95	

[d]:Mann Whitney U Test, [e]:Kruskal Wallis Test, *p<0,05, **:p<0,01

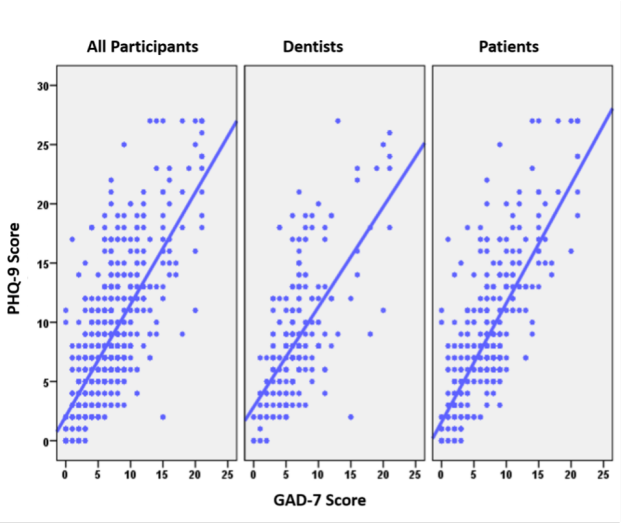

Figure 3. A dentigerous cyst that is attached to the cementoenamel junction of an inverted impacted mandibular left third molar was successfully detected by the model

PHQ-9 scores based on status of finding precautions taken by patients and their relatives adequate, where the scores of the dentists who found the precautions adequate were lower (p<0.01) (Table 7).

There were positive and significant relationships between the GAD-7 and PHQ-9 scores of the participants on the level of 0.646 (r:0.646; p=0.001; p<0.01), where this level was 0.594 in the dentists (r:0.594; p=0.001; p<0.01) and 0.684 in the patients (r:0.684; p=0.001; p<0.01).

Discussion

The COVID-19 epidemic emerged in Wuhan, China in 2019 and has become a major health problem for the whole world. In such rapidly spreading epidemics, it is critical that all individuals, whether healthcare workers or not, be conscious and knowledgeable in overcoming the disease. In a study where 650 dentists from several countries participated, [17] almost all dentists (97%) thought they had knowledge about ways of infection and followed up-to-date CDC and WHO directions (90%). A study conducted in Mumbai with healthcare workers and students which investigated COVID-19 awareness, knowledge and infection control levels [18] found the correct response rate on respiratory droplet infection as the main way of infection of the disease is 62%, while this rate was 16.7% in those working outside the clinic. The same rate was reported as 54.2% in students of dentistry schools. Additionally, the group where the correct way of hand washing was known at the highest rate was determined as the dentistry-associated participants. [18] Similar to these averages, in our study, it was observed that the vast majority (76%) of the participants thought they had sufficient knowledge on COVID-19. There was also no significant difference in terms of the opinions on having sufficient knowledge on the disease between the dentists and the patients. Almost all individuals thought they had knowledge on the disease's ways of transmission

Table 7. Assessment of PHQ-9 Scores Based on Characteristics Related to the Coronavirus Process

Dentist (n=272)		PHQ-9 scores			*p*
		n	Min-Max (Median)	Mean±Sd	
Status of having sufficient knowledge on the disease	**Yes**	211	0-26 (7)	8,18±4,99	
	No	19	0-22 (7)	7,11±5,55	[e]*0,038**
	Undecided	42	0-27 (9)	10,38±6,11	
Status of having someone around who had the disease	**Yes**	78	0-27 (9)	9,99±6,11	[d]*0,004***
	No	194	0-26 (7)	7,82±4,77	
Status of interrupting work due to the pandemic	**Yes**	213	0-27 (7)	8,50±5,09	[d]*0,384*
	No	59	0-26 (8)	8,24±5,93	
Status of thinking precautions taken will protect one from the disease	**Yes**	209	0-26 (7)	8,14±4,91	[d]*0,241*
	No	63	0-27 (8)	9,44±6,26	
Status of finding precautions taken by patients and relatives adequate	**Yes**	16	0-18 (3,5)	4,38±4,63	[d]*0,001***
	No	256	0-27 (8)	8,70±5,21	
Status of finding precautions taken by dentists adequate	**Yes**	127	0-27 (8)	8,57±5,52	[d]*0,713*
	No	145	0-26 (8)	8,34±5,06	
Views on the risk of infection at dental hospitals	**Safe**	51	2-19 (7)	8,14±4,18	
	Unsafe	163	0-27 (8)	8,75±5,39	[e]*0,531*
	Undecided	58	0-23 (7)	7,86±5,78	
Status of experiencing concerns in seeing patients	**Yes**	260	0-27 (8)	8,53±5,31	[d]*0,225*
	No	12	0-12 (6)	6,50±4,10	
Status of providing dental treatment for a coronavirus patient	**Yes**	15	0-18 (9)	8,67±5,64	[d]*0,741*
	No	257	0-27 (7)	8,43±5,26	

[d]:Mann Whitney U Test, [e]:Kruskal Wallis Test, *p<0,05, **:p<0,01

and for this purpose, have taken precautions such as hygiene, isolation and the use of protective products. Although a high ratio of the individuals thought that the precautions they took were adequate, a mass at a non-negligible rate thought these were inadequate. Besides all these, although the rates of having knowledge about ways of infection and taking precautions were higher among the dentists, the rates of thinking that precautions would protect them from the disease were higher in the patient group.

When considering the source of information, the prominent sources of information were social media, internet news sites and television, while the rate of the dentists to receive information from WhatsApp groups, colleagues and friends and the rate of the patients to receive information from internet news sites were higher. Similarly, in a multinational study[19] the most frequently stated source of information of specialist (MDS), graduate (BDS) and dental clinician (DDS) dentists were respectively the internet (37.7%), social media sites (30.9%), television (20%) and newspapers (10%).

Dentistry has been one of the sectors that suffered the most during the Covid-19 epidemic and undoubtedly the section with the highest risk of contamination. According to the data of a study conducted in April in Northern Italy, the most frequently stated precautions taken by dentists continuing to work included taking appointments with intervals (86%), frequent ventilation of the waiting room (88%) and washing hands before and after each treatment[20] (91%). In another study[17], precautions such as asking history of travel (82%), measuring body temperature (81%), and postponing treatment in the presence of suspicious symptoms were found to be frequently taken precautions. Likewise, among the opinions of physicians in finding precautions taken to be sufficient, about 85% did not think surgical masks provides adequate protection, 84% preferred to wear N95 masks, but the rate of wearing N95 masks during treatment was only 10%. While 89% think that rubber dam should be used, only 16% put it into practice. In our study, the rate of those who thought there is a risk of infection during dental procedures was 88.4%, and this rate was higher in the dentists than the patients. While there were more participants who thought that precautions taken by dentists were adequate, the number of those who did not think so was non-negligible (42.1%). Furthermore, the rate of not finding precautions taken by patients and their relatives adequate was very high (80.1%). While 23.1% of the participants found dental hospitals to be safe, half of them thought they were not safe, and the vast majority considered that only emergency dental treatments should be performed in this period. The findings of the study also showed that the patients were more relaxed in comparison to the dentists in terms of the adequacy of precautions taken by dentists, safety of dental hospitals and their approaches to appointments.

In the pandemic process, one of the issues on which most problems are experienced in the field of dentistry involves appointments. In a study examining the effects of COVID-19 on dentistry appointments[21], among 595 patients continuing treatment, 38.3% stated that they would attend their appointment if called by the dentist/personnel, 44.2% said they would attend in only emergency cases, and 17.5% said they would not attend for any reason. While most patients receiving treatment (55.9%) stated that they would attend their appointments, most patients not receiving treatment said they would either go in the case of emergencies or not go at all. Considering patients receiving active dental treatment, it was observed that most were receiving orthodontic treatment (66.7%), and orthodontic patients were more concerned about delays in their treatments.[21] The patient approaches in our study were similar; 68.1% of the patients stated that their treatments were interrupted in this pandemic process. Additionally, 84.8% postponed going to the dentist in this period despite having complaints. Looking at the approaches of the patients in this period towards their appointments, while about ¼ did not attend their appointments, about half postponed them. Considering the attitudes of dentists in this period, while the vast majority of the patients were informed in detail by their dentist in this process, 1/10 stated that they did not receive any explanation, and very few of them said they could not reach their dentist. As a result of all this data, both dentists and patients took precautions about dental appointments.

Dentists, as well as healthcare professionals who require close contact with symptomatic or asymptomatic COVID-19 carriers, are at great risk. High-speed handpieces and ultrasonic devices cause the average diffusion of saliva and blood via aerosol. Again, other tools in the environment may be contaminated after use or contact with the environment and may cause transmission through the mucosa or skin.[22] In a study, regarding perception of the risk of getting infected with SARS-CoV-2, most dentists thought dentistry is a risky occupation, whereas 2.13% stated that they had confidence in themselves in terms of avoiding infection.[20] Among

Jordanian dentists, the vast majority reported that they avoided applying treatment to a patient with COVID-19 suspicion. In the same study, the half of the participants stated that they would direct a patient coughing or sneezing at their clinic to the hospital without treating them, very few of them said they would ask the patient to leave by refusing to treat them, and one of every two participant reported that they would treat the patient and then ask them to go to the hospital.[13] In our study, almost all dentists stated that they were concerned about seeing patients in this period, a small percentage said they had treated a coronavirus patient, and of course, it is considered that this rate would be much higher including unknown patients. While most of the dentists performed only emergency treatments, 1/3 of the participants stated that they took a break from all procedures. In developing countries, purchasing extra PPE (apron, glove, etc.) and the fumigation/sterilization cost of the dental clinic may financially impact the dental clinician. According to a study[20], more than 90% of dentists and approximately half of dentists working at private clinics continued to work in this period. In our study, the rate of interrupting work due to the pandemic was 73.2%, and the rate of those with occupational future anxiety was 70.3%, which were striking rates. Among the participants, 54.8% stated that they could not make plans for the future. Furthermore, it is not known whether these rates were caused directly by the pandemic or the pandemic was combined with different reasons. The rates of interrupting work, occupational future anxiety, and inability to make plans for the future were higher in the dentists than the other participants. It can be said that all these situations create financial and psychological problems for dentists in this process.

The rapid spread of COVID-19, which affects millions of people worldwide and has devastating effects such as isolation and death, has caused significant psychological stress and fear. A study conducted on 595 patients[21] reported in relation to emotions regarding the COVID-19 pandemic at the early stage that 41.8% of the patients were calm, 28.6% experienced anxiety, 23.2% experienced fear, 2.2% experienced panic, and 4.2% did not feel any change. In a study[23] measuring the anxiety level before and after the COVID-19 pandemic in 43 countries with GAD-2, an increase of up to 50 percent in average scores was observed. Moreover pre and post GAD-2 scores of females was greater than those of males. In another study[24] conducted with 1450 subjects during the early stages of the COVID-19 pandemic, older age, not being healthcare worker, chronic disease history and low income were found as factors that associated with higher health anxiety, while there was no difference between different education levels and genders. Besides, in same year, regular oral surgery patients stated increased anxiety during dental appointment compared with the pre-pandemic period whereas no difference was found in different age and gender groups.[25] In the responses given to the items of GAD-7 in our study, it was observed that the highest rates in all questions were in the option of 'on some days'. While the participants responded as 'on some days' to the questions measuring generalized anxiety disorder the most selected answer, the second most frequently selected option was 'never'. While 6-16% of the individuals stated that they were concerned, anxious, uneasy or irritable for more than half of the days, 3-10% of them selected the option of 'almost every day' and were found to experience severe anxiety. The anxiety levels of the patients were higher than those of the dentists. In addition to this, while middle age, specialization, healthy people around and thinking that precautions taken are adequate were determined as factors reducing anxiety, no significant effect of systemic disease, gender, having sufficient knowledge on the disease and interrupting work due to the pandemic could be found. The conclusion could be deducted from these finding is that being confident about yourself and environmental factors reduces the level of anxiety.

Considering the assessment of the depression scale of the patient health questionnaire (PHQ-9), it was also observed that the vast majority of the participants selected the option of 'on some days' in the questions measuring depression, and the rest of the answers were mostly collected under the options of 'never' and 'on some days'. Twenty-eight individuals (4.1%) displayed severe depression symptoms such as wishing to harm self or die. There was no significant difference between the PHQ-9 scores of the dentists and the patients. What is more, in the dentists, young age, anxiety, undecidedness on having sufficient knowledge, status of having a person around who had experienced COVID-19 and thinking that precautions taken were inadequate were determined as factors increasing depression. In Seens et al.'s study[23], which investigated the depression level changes in pandemic, it was stated that changes levels of female depression measured with PHQ-9 was significantly greater than those of males. In Scotland one of every three dentistry personnel had depressive symptom and more than half of the primary care staff stated emotionally exhausted.[26] During the pandemic period, detecting individuals ' anxiety and depression will ensure that measures are taken to reduce the anxiety of patients. Identifying individuals ' awareness of COVID 19 will encourage the making of necessary regulations to increase their knowledge levels. The limitations of our study are that there were not many similar studies involving GAD-7 and PHQ-9 at that time, the data on depression and anxiety could not be isolated from external Covid-19 factors, and the study included individuals in a particular region.

Conclusion

- Both the dentists and patients thought they had sufficient information on the disease and its ways of transmission and took most of the necessary precautions, while social media had a significant role as a source of information.
- Almost all participants had a consensus on the idea that the risk of infection is high during dental procedures. In this period, the dentists and patients displayed different attitudes about appointments, but the general attitude was to postpone appointments or not go at all.
- Due to the pandemic, while the rates of interrupting work and having future anxiety were on a considerable level in all participants, they were much higher among the dentists.
- According to the results of the questionnaires of GAD-7 and PHQ-9, there were moderate levels of generalized anxiety disorder and depression in both of the dentist and patient groups, while these levels were higher in the patients.

Author Contributions

All authors have contributed to; conception and design of the study, data collection and analysis, writing the manuscript, approval of the final version to be submitted.

Conflict of Interest

Authors declare that they have no conflict of interest.

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