



RESEARCH ARTICLE

Covid-19-related anxiety levels in physicians: a preliminary study

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ABSTRACT

Objective: A new type of coronavirus appeared in Wuhan, China, in December 2019, spreading rapidly and causing a pandemic. Healthcare professionals were at the front line fighting the pandemic. The aim of this study is to examine the effects of the Covid-19 pandemic on physicians in Turkey, including anxiety levels and other possible contributing variables.

Method: The questionnaire prepared by the researchers was administered to the participants over the internet. The questionnaire was anonymized and contained questions about variables such as sociodemographic and professional characteristics, recent history of traveling abroad, presence of a chronic disease history, level of knowledge about Covid-19, ways of obtaining information, and measures taken in their daily and professional lives. The Hospital Anxiety and Depression Scale (HADS) was administered following the information form.

Results: In the specified timeframe, 1249 doctors who completed the questionnaire in full were included in the study. Of the study participants, 50.4% reported that they were psychologically affected by current events related to Covid-19. The mean score of the HADS anxiety subscale was 7.342 (standard deviation [SD]=4.756) and the mean score of the depression subscale was 5.64 (SD=4.236). It was observed that physicians who state being affected psychologically have lower levels of knowledge and higher anxiety and depression scores than physicians who declare not to be affected. In addition, it was found that being of the female gender, having a mental illness, having a family member with a chronic illness, and living with one's family are associated with increased levels of anxiety and depression.

Conclusion: The anxiety levels of physicians in Turkey having to deal with the Covid-19 pandemic increase significantly as is the case in other parts of the world. It will be beneficial to take necessary precautions for physicians with characteristics that may be related to anxiety. It is important to create and maintain psychosocial support programs for all physicians.

Keywords: Anxiety, mental health, pandemics, preventive psychiatry

INTRODUCTION

In December 2019, a number of similar cases of pneumonia were detected in the Chinese city of Wuhan. Later, a new type of coronavirus named 2019-novel

Coronavirus (2019-ncov/SARS-CoV-2) was shown to be the agent responsible for these pneumonia cases. The new disease with fast increasing incidence was termed Covid-19 by the World Health Organization (WHO) (1). In a short period of time, the illness began spreading

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to other cities of China. It was found to infect family members and healthcare providers of the patients, and the infection from person to person could be shown to occur through droplets, contact, and via inanimate objects (2). Covid-19 was seen to be highly infectious during the latency period, when no clinical signs are visible. The disease most commonly presents with unspecific symptoms like fever, dry cough, and fatigue (3). The high infection rate of the virus (on average 4 new cases for each initial case) and the unspecific nature of the symptoms led to a high infection rate among healthcare professionals (4).

While the disease has by now begun to slow down in the epicenter thanks to intense measures of prevention and quarantine in China, it still shows significant spread in the rest of the world. According to the regularly published declarations of the WHO, since March 17, 2020, the disease has reached every continent and infected 179.212 persons (5). Although Turkey, compared to many other countries, took particularly comprehensive measures in this period, on March 11, 2020, the Ministry of Health announced the first diagnosed Covid-19 case (6).

The first person drawing attention to the emerging SARS-CoV-2 epidemic was the 34-year-old ophthalmologist Li Wenliang, who sent an alert by e-mail to his colleagues after the first 7 cases had occurred. Over time, his warnings were confirmed, but tragically it was announced that he had lost his life to Covid-19 (7). In one treatment center in Wuhan, reportedly 29% of patients were healthcare professionals (8). In the struggle to contain the disease, protective measures for healthcare staff gained particular importance. On the other hand, the recommended level-D protective clothing reduces the healthcare professionals' ability to talk and examine patients. Continuous exposure to the disease, necessary high-level precautions, and anxiety experienced in the daily contact with patients and/or medical equipment affect healthcare professionals' effectivity (9). In the same period, news emerged both in academic publications and in the media regarding healthcare staff requiring intensive care or losing their lives (10). In the light of these developments, it is likely that physicians experience mental issues due to the pandemic.

Studies carried out during the H1N1 influenza pandemic in 2009 demonstrated that healthcare staff showed moderate to high-level anxiety symptoms. In this group, concerns about infecting family members and friends were seen to be particularly prominent (11). First studies regarding the psychological effects

of the outbreak and the quarantine in Wuhan revealed a society-wide increase of depression and anxiety levels (12).

Healthcare staff cannot be assumed to remain isolated from reactions emerging in society during this kind of crisis. Furthermore, the abovementioned factors underline the probability of responses like anxiety in healthcare professionals.

Understanding physicians' potential mental issues experienced due to the pandemic and the factors related to those issues is relevant during the Covid-19 pandemic as well as for similar periods of epidemics to be encountered in the future. Aim of this study is to establish physicians' Covid-19-related anxiety levels in Turkey and the variables affecting their anxiety.

METHOD

The questionnaire was prepared by the researchers and administered to the participants via the Internet using Google Forms. At the beginning, the form contained information about the study and an invitation to participate, together with a consent text. The questionnaire was prepared in anonymous form and included questions investigating variables such as sociodemographic and professional characteristics, any recent history of international travel, the presence of a history of chronic illness, the level of knowledge about Covid-19, and ways of gaining information. The level of knowledge about Covid-19 was evaluated with a single item scored by the participant on a scale from 1 to 5 points from "I have no knowledge" to "I am completely familiar with the topic." After the information form, the Hospital Anxiety and Depression Scale (HADS) was administered.

Hospital Anxiety Depression Scale (HADS): This instrument was developed to screen patients' anxiety and depression symptoms simultaneously. It is completed by the participants themselves. First developed by Zigmond et al. (13), the scale was adapted for Turkey in a validity and reliability study by Aydemir et al. (14). It consists of 14 items, 7 of which measure anxiety and the other 7 depression. Answers are scored on a 4-point Likert-type scale from 0-3. For each subscale, the lowest possible score is 0, the highest score 21 points. For the Turkish HADS form, cutoff points have been established at 10 for the anxiety subscale (HAD-A) and at 7 for the depression subscale (HAD-D). Cronbach's α reliability coefficient was 0.8525 for the anxiety subscale and 0.7765 for the depression subscale. The split-half correlation coefficient was 0.8532 for the

anxiety subscale and 0.8069 for the depression subscale. Validity and reliability levels for the Turkish measure are adequate (13,14).

Participants were reached by contact groups like physician e-mail and WhatsApp. The timeframe for the study was 1 week, and survey questionnaires completed between March 11, 2020, the day when the first identified case in Turkey was announced, and March 18, 2020 were included in the evaluation.

To prevent multiple submissions, it was planned to compare the received data and exclude forms identified as duplicates from the study accordingly.

Statistical Analysis

Statistical analyses were performed using SPSS version 25. Descriptive statistics were used to analyze sociodemographic data. The distribution of sociodemographic data and professional characteristics between the two groups of participants mentally affected and non-affected by the current events was measured by chi-square test of independence. In assessing the correlation between HADS anxiety and depression scores according to sociodemographic and professional characteristics and variables for mental impact of current events, independent samples t-test was used for comparisons of 2 groups and one-way ANOVA test was carried out to compare more than 2 groups. The correlation between knowledge level regarding Covid-19, HADS anxiety, and HADS depression scores was analyzed using Pearson's simple correlation analysis. For all statistical analysis, values of $p < 0.05$ were considered to be significant.

Ethics approval for this study was obtained from the chairperson's office of Uskudar University's Non-Interventional Research Ethics Committee.

RESULTS

In the determined timespan, a total of 1284 individuals participated. Three of the participants were healthcare professionals other than physicians and 32 persons had not filled in the questionnaire completely and were thus excluded from the study. Comparison of data did not reveal any repeat submissions. Included in the study were 1249 physicians who had completed the questionnaire in full.

Descriptive statistics were used to specify the participants' sociodemographic and professional characteristics. The participating doctors' mean age was 41.40 years (age range 24-66 years, standard deviation [SD]=8.187). Of the sample, 81.7% were female

(n=1020), 18.3% were male (n=229), 3.7% were dentists (n=46), 14.8% general practitioners (n=185), and 81.5% specialist doctors (n=1018). Participants' sociodemographic and professional characteristics are shown in Table 1, general distribution by area in Table 2. Of the participants, 76% (n=949) reported being married, 76.2% (n=952) had children, and 79.7% were living with their nuclear family. Furthermore, 18.8% of participants (n=235) reported a physical chronic illness, 13.1% (n=164) a history of mental illness, and 47.5% (n=593) stated being in contact with a family member having a chronic disease. In the last 1 month, 7.9% of participants (n=99) had traveled abroad.

Participants' knowledge about Covid-19 was measured with a 5-point Likert-type scale from 1-5, where 0.2% of subjects (n=3) scored 1, 2.2% (n=28) 2,

Table 1: Sociodemographic and general characteristics

Gender (%)		
Female	1020 (81.7)	
Male	229 (18.3)	
Marital status (%)		
Single	300 (24)	
Married	949 (76)	
Having children (%)		
No	297 (23.8)	
Yes	952 (76.2)	
Housing situation (%)		
On their own	145 (11.6)	
Nuclear family	995 (79.7)	
Extended family	76 (6.1)	
Other	33 (2.6)	
	No	Yes
History of international travel	1150 (92.1%)	99 (7.9%)
History of chronic disease	1014 (81.2%)	235 (18.8%)
History of mental disease	1085 (86.9%)	164 (13.1%)
Family history of chronic disease	656 (52.5%)	593 (47.5%)

Table 2: Participant distribution by branch

Internal medicine (%)	750 (60)
Surgery (%)	166 (13.3)
Basic sciences (%)	75 (6.0)
General practice (%)	185 (14.8)
Emergency (%)	27 (2.2)
Dental medicine (%)	46 (3.7)
Total	1249

21.6% (n=270) 3, 50.8% (n=635) 4, and 25.1% (n=313) 5. In other words, 97.6% declared having an intermediate or higher level of knowledge about Covid-19. Of the participants, 42.2% (n=527) stated having attended an information meeting on the issue of Covid-19. For the question investigating physicians' ways of accessing information about Covid-19, where more than one answer could be selected, "from websites or social media accounts of official institutions like the Ministry of Health, WHO, and professional associations" came in first place (89.9%, n=1122), followed by "individual websites/social media accounts of doctors" (58.2%, n=727), "news groups like WhatsApp, Viber" (40.4%, n=505), and "events like seminars, meetings, congresses organized by institutions" (34.2%, n=427), respectively. "From the television," "from medical books, journals, or articles (printed or online)" and other sources ranked lower.

The rates of precautions taken in their professional and/or in their daily life due to Covid-19 varied; among participants stating that they had taken preventive measures, for both spheres handwashing (98.4 and 96.8%, respectively) and avoiding handshakes and kisses (89.4 and 88.8%) were among the highest-ranking answers, followed by the options mask (49.1 and 10.1%), gloves (39.2 and 5.8%), and other (16.7 and 17%, resp.).

A mental impact of the current situation was reported by 50.4% of study participants (n=629), while 31.1% (n=388) stated that they were not affected and 18.6% (n=232) did not decide.

The participants' HADS scores were determined with a mean of 7.342 points (SD 4.756) for the anxiety subscale and 5.64 (SD 4.236) for the depression subscale. When asked if they felt tense and close to boiling over, 8.3% (n=108) answered most of the time and 9.5% (n=118) frequently, while 51.9% (n=648) stated not enjoying things they used to enjoy in the past to varying degrees, and 44.5% (n=557) said that they had experienced a moderate or high degree of bad premonitions.

Chi-square test of independence was used to show the mental impact of the current situation according to sociodemographic data and professional characteristics. Regarding variables potentially linked with the mental effects of Covid-19-related current events, statistical analysis carried out after removing the undecided group demonstrated a high degree of significant correlations with being of the female gender, having a physical chronic illness, and the presence of a family member with a chronic disease ($p < 0.001$). Furthermore, a

significant correlation was found between mental impact and working in internist and emergency areas, living with nuclear or extended family, and having children ($p < 0.05$) (Table 3).

When analyzing correlations between participants' HADS anxiety and HADS depression scores, sociodemographic and professional characteristics, and current events, comparisons between 2 groups were made using independent samples t-test, while one-way ANOVA was used for comparisons of more than 2 groups. Doctors reporting mental impact were found to have a lower level of knowledge about Covid-19 ($p < 0.05$) and their anxiety and depression scores were higher than those of physicians stating that they were not affected (Table 4).

As shown in Table 4, women, physicians living with family, participants with a history of mental illness, and doctors with family members having a history of chronic disease had significantly higher scores both for anxiety and for depression ($p < 0.05$). In married participants, only the depression scores were significantly elevated ($p = 0.017$). For doctors with a history of international travel, however, both anxiety and depression scores were lower.

Pearson's simple correlation analysis was used to analyze the correlation between HADS anxiety and HADS depression scores. A significant negative correlation was found between level of knowledge about Covid-19 and scores for anxiety ($r = -0.105$, $p < 0.01$) and depression ($r = -0.148$, $p < 0.01$). A strong positive correlation was seen between anxiety and depression scores ($r = 0.791$, $p < 0.01$).

DISCUSSION

Covid-19, an acute respiratory disease that may have a fairly severe course with a mortality of around 3.2% and has spread to the entire world in a short period of time, has been defined a pandemic by the WHO. The disease can be expected to affect healthcare professionals, including doctors, as well as society in general profoundly all over the world (1,3).

In our study, 50.4% of doctors reported being affected by Covid-19-related current events. A survey study made in China found 53.8% of the population being psychologically affected by the pandemic to a moderate or severe degree. Of this group, 16.5% reported having experienced moderate-severe depressive symptoms and 28.8% stated moderate-severe anxiety symptoms (12). In countries where the pandemic is seen, healthcare professionals may

Table 3: Comparison of mentally affected and non-affected participants

Mental impact	Yes		No		χ^2	p	df
	n	%	n	%			
Gender							
Female	535	65.1	287	34.9	19.032	<0.001	1
Male	94	48.2	101	51.8			
Marital status							
Single	137	56.6	105	43.4	3.691	0.055	1
Married	492	63.5	283	36.5			
Field							
General practice	96	63.6	55	36.4	12.911	0.024	5
Internal medicine	393	65.0	212	35.0			
Surgery	75	51.0	72	49.0			
Basic sciences	34	57.6	25	42.4			
Emergency	13	68.4	6	31.6			
Dental medicine	18	50.0	18	50.0			
Housing situation							
On their own	64	54.2	54	45.8	8.345	0.039	3
Nuclear family	514	63.2	299	36.8			
Extended family	40	66.7	20	33.3			
Other	11	42.3	15	57.7			
Having children							
No	134	54.0	114	46.0	8.492	0.004	1
Yes	495	64.4	274	35.6			
International travel							
No	588	62.2	358	37.8	0.544	0.461	1
Yes	41	57.7	30	42.3			
Chronic disease							
No	484	58.5	343	41.5	20.725	<0.001	1
Yes	145	76.3	45	23.7			
Mental disease							
No	540	60.9	346	39.1	2.364	0.124	1
Yes	89	67.9	42	32.1			
Disease in family							
No	296	54.6	246	45.4	25.751	<0.001	1
Yes	333	70.1	142	29.9			
Participated in a meeting							
No	383	62.6	229	37.4	0.350	0.554	1
Yes	246	60.7	159	39.3			

experience difficult working conditions and suffer a high rate of infection, which may lead to a higher anxiety level than in the general population (4). The mean score for the HADS anxiety subscale in our study was 7.342 and thus above the cutoff point of the measure. In addition, 8.3% of participants (n=108) answered that they were tense and close to boiling point

most of the time and 9.5% (n=118) were so much of the time, while 51.9% (n=648) said that, to varying degrees, they found less joy in things they used to enjoy and 44.5% of participants (n=557) stated that they had experienced a moderate or high degree of bad premonitions. As this survey was carried out during the first week with relatively low Covid-19 case numbers,

Table 4: Assessment of participants' anxiety and depression scores according to various characteristics

Characteristics	HADS anxiety score						HADS depression score				
	n	Mean	SD	t/F	p	df	Mean	SD	t/F	p	df
Gender											
Female	1020	7.71	4.78				5.81	4.27			
Male	229	5.69	4.26	5.91	<0.001	1247	4.91	3.97	3.02	0.03	1247
Marital status											
Single	300	7.11	4.65				5.14	4.06			
Married	949	7.41	4.78	-0.96	0.335	1247	5.80	4.28	-2.39	0.017	1247
Field*											
General practice	151	8.34	4.98				6.22	4.11			
Internal medicine	750	7.40	4.82				5.67	4.32			
Surgery	166	6.69	4.45				5.19	4.01			
Basic sciences	59	7.15	5.26				5.88	4.70			
Emergency	19	7.89	4.74				4.57	3.74			
Dental medicine	36	7.83	4.58	1.33	0.24	5	6.36	4.23	0.72	0.60	5
						1243**					1243**
Housing status*											
On their own	145	6.14	4.47				4.87	4.18			
Nuclear family	995	7.54	4.77				5.77	4.24			
Extended family	60	8.25	5.04				6.42	4.33			
Other	26	6.03	4.59	4.78	0.003	3	4.88	4.39	2.86	0.036	3
						1245**					1245**
Having children											
Yes	952	7.44	4.71				5.73	4.19			
No	297	7.01	4.87	1.37	0.17	1247	5.37	4.35	1.29	0.19	1247
International travel											
Yes	99	6.14	4.73				4.67	4.33			
No	1150	7.44	4.80	-2.62	0.009	1247	5.73	4.21	-2.38	0.017	1247
Chronic illness											
Yes	235	7.55	4.67				5.74	4.07			
No	1014	7.29	4.77	0.76	0.443	1247	5.62	4.27	0.36	0.712	1247
Mental illness											
Yes	164	8.52	4.81				6.48	4.25			
No	1085	7.16	4.72	3.42	0.001	1247	5.52	4.22	2.70	0.007	1247
Illness in family											
Yes	593	8.00	4.64				6.06	4.47			
No	656	6.74	4.79	4.70	<0.001	1247	5.26	3.97	3.31	0.001	1247
Participated in a meeting											
Yes	527	7.13	4.62				5.45	4.31			
No	722	7.49	4.84	-1.33	0.18	1247	5.79	4.12	-1.41	0.159	1247
Mental impact											
Affected	629	10.13	4.36				7.77	4.21			
Not affected	388	3.66	3.03	27.84	<0.001	1247	3.00	2.79	21.68	<0.001	1247

HADS: Hospital Anxiety and Depression Scale, SD: Standard deviation, *One-way ANOVA has been used. F value to be used. **First value: inter-group degrees of freedom, second value: intra-group degrees of freedom

these responses could be interpreted as some kind of “expectation anxiety” related to the onset of the disease being seen in Turkey. The realization that the pandemic appeared to spread fast worldwide, with the health sector in many countries lacking the equipment to carry the case load and insufficient resources to satisfy the fast growing demand for intensive care, which might also happen in Turkey, may have increased anxiety in the face of this potential disaster (15,16).

Most of the participants were living with their nuclear family (79.9%) and had children (76.2%). While 18.8% of them had a chronic illness, 47.5% of all participants reported being in contact with a family member suffering from a chronic disease. In our study, we saw that anxiety and depression levels in individuals living with their nuclear family and chronically ill family members were significantly higher than in the other group. In addition, the depression scores of the married group were found to be higher than in the single group. It is known that the main concern of doctors working in times of infectious diseases is the possibility of infecting their relatives with the disease (11). Available current data demonstrate an increase in mortality from the disease with patients’ advanced age and comorbid chronic illnesses (3). This may be the reason why physicians’ anxiety levels are increased when they live together with family members suffering from chronic diseases. Furthermore, concerning participants having children, anxiety caused by the disease itself and by the working conditions during the pandemic requiring separation from the child and leaving insufficient opportunities to give the child adequate care needs to be taken into account. While our study found that preventive measures such as frequent handwashing and avoiding handshakes and kisses were observed to a high degree, it was also seen that more sophisticated measures to reduce the infection risk in the hospital environment like the use of protective clothing and masks were not commonly applied at a time when case numbers were still relatively low. During the outbreak of severe acute respiratory syndrome (SARS) in Hong Kong in 2003, general practitioners working on the frontline reported serious concerns about the possibility of infecting their families. Especially female doctors were seen having higher anxiety levels and taking more rigorous precautions in the work environment and before meeting their family members. Our study also found a significant correlation between female gender and increased anxiety and depression scores. Wong et al. (17) showed in their study that doctors with high

anxiety levels, in order to cope with this anxiety, isolated themselves during the outbreak (6.7%), sent their families to another location (3.0%), or continued wearing a mask inside the own house (4.4%). During the H1N1 pandemic, too, 6.6% of healthcare staff limited their social relations comprehensively (11). It may be assumed that the anxiety level experienced during this kind of epidemics may be further enhanced by the disruption of family life due to isolation and a reduction in social support.

Only 42.2% of our study participants had attended an academic information meeting related to Covid-19. However, 97.6% declared having a moderate or higher level of knowledge about the disease. Doctors stated that they had mostly gathered knowledge from websites of institutions like the Ministry of Health, the WHO, and the professional chamber or other physicians’ social media accounts and websites. A study carried out with healthcare professionals during the H1N1 influenza A pandemic in 2009 showed an inverse relation between increased knowledge about the disease and levels of anxiety (11). In our study, doctors stating that they were mentally affected were seen to have a lower level of knowledge compared to unaffected physicians and their anxiety and depression scores were higher. With increasing knowledge about the disease, anxiety and depression scores were found to decrease significantly. One of the first studies made in Wuhan showed that half of the quarantined general population experienced psychological problems, 75.2% were worried about family members falling ill, while increasing knowledge about the disease and preventive measures taken significantly reduced the anxiety level (12). A study in Japan carried out during the H1N1 pandemic showed that insufficient information about the virulence of the disease and ways of prevention and protection led to a significant increase in anxiety levels in healthcare professionals working at a state hospital during the outbreak. The anxiety level in doctors who had more detailed information about the disease was found to be lower than in nurses and other healthcare staff who had less knowledge (18). A study focusing on Taiwan found that psychiatric disorders seen in healthcare providers on active duty during the SARS outbreak were related with direct patient contact, young age, and perceived negative emotions, while information about SARS and a better understanding of the disease were the most effective factors in this situation (19). From this perspective, especially in outbreaks due to the emergence of a previously unknown pathogen, it is important to provide correct

and sufficient information in order to reduce anxiety level and improve mental wellbeing for society and healthcare staff. Particularly in the early stages, information provided through official sources can help preserving the wellbeing of doctors and healthcare staff working at the frontline of disease control, increase their work efficiency, and prevent exhaustion. A study emphasizing the burnout risk for doctors fighting the Covid-19 outbreak pointed out that especially lack of sleep and isolation increased the risk for depression, while providing the doctors with information about potential risks, awareness exercises, and well-organized work processes were efficient in preventing burnout (20). An editorial in the *Lancet* on March 21, 2020 emphasized that the health sector had been forced to work at full capacity over a long period of time; as healthcare professionals cannot work at full power like a mechanical ventilator, a serious risk of exhaustion is involved. Especially in a country like Italy, where 20% of healthcare staff employed during the outbreak were infected, factors like an intense work schedule, the loss of colleagues' lives, and separation from their families led to exhaustion (10). As was pointed out in a study reporting that in the United States 54.4% of physicians experience burnout under normal circumstances, the increase in exhaustion and mental disorders during the Covid-19 pandemic led to a reduction of the physicians' functionality, negatively affecting disease control (21). A study based in China researching mental issues in healthcare professionals during the Covid-19 outbreak found a significant increase in the incidence of insomnia, anxiety, depression, somatization, and obsessive-compulsive disorder in healthcare staff compared to the general population. Risk factors were the presence of an organic disease, being of the female gender, living in rural areas, and having a history of contact with Covid-19 patients (22).

According to the results of our study, factors related to mental impact can be ranked from female gender, working in internal medicine or emergency, living with nuclear or extended family, having children, the presence of a physical chronic disease in the subject or a family member, to having a pre-existing mental illness. In the SARS outbreak, healthcare professionals who were infected with the disease during their active service received the diagnosis of post-traumatic stress disorder with an incidence of 40.7%, and even non-infected healthcare staff continued to experience mental problems over the following years (23,24). Healthcare professionals working in SARS departments displayed significantly increased prevalence of alcohol abuse

behavior compared to other colleagues even 3 years after the outbreak (25). Among the physicians participating in our study, 13.1% had a known psychiatric illness. In the mental disease group, anxiety and depression scores were found to be significantly higher. When physicians are required to work on the front line, after an outbreak like the current one it is necessary to consider possible traumatic experiences. Doctors suffering from psychiatric illness need to be careful regarding exacerbation, and it is important to ensure that all physicians on active duty in these circumstances have access to adequate psychiatric support.

In China, healthcare workers were offered a number of measures for mental support during the Covid-19 outbreak. In particular, they were provided with a place to rest without risking to infect their families, they received sufficient food and protective equipment, and continuous contact with their families was facilitated. Secondly, introductory education about the disease was provided in order to increase the relevant knowledge level for all doctors. Thirdly, legal measures were taken against possible problems with patients, and non-compliant patients were controlled by security staff. Finally, stress-reducing activities were organized and continuous psychiatric control was provided (26). China's psychosocial intervention prepared on the basis of past outbreaks and the literature is consistent with the results of our study. Since the first days of the pandemic in Turkey, various institutions and the Psychiatric Association of Turkey have continually offered mental support to healthcare professionals (27). Results from our preliminary study may help guide support programs that are ongoing or planned for the future.

Our study reached a large group of physicians. The reliability of our results has been strengthened by the participation of doctors from different hospitals, working with various patient groups in all fields. Carrying out the survey anonymously allowed the participants to answer more easily and openly. As relatively few studies have been conducted during the very early stage of the outbreak, our results are of particular relevance.

Our study has a number of limitations. The timeframe for completing the questionnaires was between March 11 and March 18. As the first Covid-19 case in Turkey was announced on March 11, 2020, the total number of cases in Turkey during the study period was still below 100. The spread of Covid-19 in the country and the increase in case numbers began after that time. Accordingly, for

many doctors the arrangement of working conditions in view of the outbreak (declaring certain hospitals as epidemic clinics, appointment to other units like Covid-19 wards or emergency departments, introduction of on-call or shift systems, etc.) came into force after the study period. Another consequence of the study being conducted in the early stage of the pandemic was that no doctor could be asked if he or she had diagnosed any relative or colleague or if they had seen any symptoms. These aspects, which may affect anxiety and depression levels, will have to be examined in future studies when they occur more commonly, in line with an increase in case numbers. In addition, news regarding the Covid-19 pandemic in print and visual media increased and activities aimed at raising public awareness became more common after the study period, and curfews and quarantine measures were enforced later. Due to the timeframe of our study, the effect of these factors could not be measured. Other limitations are the cross-sectional study design, the short research period, and the failure to repeat the survey after a certain time. Therefore, the effect of factors such as physicians' exhaustion caused by their work during the pandemic could not be assessed.

Our study found a high level of anxiety in physicians during the initial period of the Covid-19 outbreak in Turkey and discussed different variables that might be related to the anxiety level. Importantly, especially a sufficient amount of knowledge can contribute to a reduction in anxiety levels and maintaining mental wellbeing. Certain sociodemographic characteristics and pre-existing psychiatric illnesses are factors potentially related with anxiety levels, suggesting that physicians with these characteristics need to be more cautious. In addition, it is important to make sure that all doctors on active duty in this process have access to psychosocial support. Our study is a starting point for further research during and after the Covid-19 pandemic. More comprehensive and controlled studies are needed to investigate the effects of the Covid-19 situation on doctors.

Contribution Categories		Author Initials
Category 1	Concept/Design	B.S. U.O. C.K. G.H.S.
	Data acquisition	B.S. U.O. C.K. G.H.S.
	Data analysis/Interpretation	B.S. U.O. C.K. G.H.S.
Category 2	Drafting manuscript	B.S. U.O. C.K. G.H.S.
	Critical revision of manuscript	B.S. U.O. C.K. G.H.S.
Category 3	Final approval and accountability	B.S. U.O. C.K. G.H.S.
Other	Technical or material support	B.S. U.O. C.K. G.H.S.
	Supervision	B.S. U.O. C.K. G.H.S.

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