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Investigation of the anxiety levels and lifestyle changes of healthcare workers in hatay province during the covid-19 pandemic process

Covid-19 pandemi sürecinde hatay ili sağlık çalışanlarının kaygı düzeyi ve yaşam tarzı değişikliklerinin incelenmesi

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ABSTRACT

Background: The aim of this study was to assess the anxiety levels and lifestyle changes experienced by healthcare professionals in Hatay province during the COVID-19 outbreak.
Materials and Methods: The study was conducted through a WhatsApp-based survey involving healthcare workers from primary, secondary, and tertiary care facilities in Hatay province between 25 February 2021 and 25 March 2021. Participants completed a 25-question survey designed by the researchers, as well as the Spielberger Trait and State Anxiety Inventory and the Insomnia Severity Index to assess sleep disturbance.
Results: Among the 201 physicians, 137 nurses/midwives and 64 other healthcare professionals who participated, 60.2% (n=242) reported moderate anxiety according to the state anxiety scale, while 72.9% (n=293) did so on the trait anxiety scale. In addition, 62.5% (n=251) reported sleep disorders. Factors associated with higher anxiety levels included older age (p=0.018), being a physician (p=0.005), working in settings with more frequent exposure to infected patients (p=0.001), having chronic illnesses (p=0.004), changing dietary habits (p=0.001), smoking (p=0.011), seeking support (p=0.001), and risky contact with infected patients (p=0.001). Variables linked to sleep disturbances included working in high-contact areas (p=0.001), being female (p=0.033), being a doctor or nurse (p=0.013), smoking (p=0.005), dietary habits (p=0.001), physical activity (p=0.001), seeking supportive care (p=0.001), and risky contact with infected patients (p=0.001).
Conclusions: The pandemic has had a negative psychological impact on healthcare workers, resulting in elevated anxiety levels and increased sleep disturbance.
Keywords: Covıd-19, pandemia, healthcare workers, anxiety

ÖZET

Amaç: Bu araştırmada, Hatay ilinde görev yapan sağlık çalışanlarının COVID-19 salgını süresince yaşadıkları kaygı düzeyleri ve yaşam tarzlarındaki değişimlerin incelenmesi amaçlanmıştır.
Materyal ve Metot: Çalışma, 25 Şubat 2021 ile 25 Mart 2021 tarihleri arasında Hatay'daki birinci, ikinci ve üçüncü basamak sağlık çalışanlarının katılımıyla, WhatsApp üzerinden gerçekleştirilen çevrimiçi bir anket ile yürütülmüştür. Katılımcılara 25 sorudan oluşan bir anket uygulanmış, ayrıca Spielberger Sürekli ve Durumluk Kaygı Ölçeği ile Uykusuzluk Şiddeti İndeksi kullanılarak kaygı düzeyleri ve uyku bozuklukları değerlendirilmiştir.
Bulgular: Araştırmaya katılan 201 doktor, 137 hemşire/ebe ve 64 diğer sağlık çalışanının %60,2'si (n=242) Durumluk Kaygı Ölçeği'ne göre, %72,9'u (n=293) Sürekli Kaygı Ölçeği'ne göre orta düzeyde kaygı yaşadığı, %62,5'inin (n=251) ise uyku bozukluğu yaşadığı tespit edilmiştir. Daha ileri yaş (p=0.018), doktor olma (p=0.005), enfekte hastalarla temas eden birimlerde görev yapma (p=0.001), kronik hastalık varlığı (p=0.004), beslenme alışkanlıklarındaki değişim (p=0.001), sigara kullanma (p=0.011), psikolojik destek alma (p=0.001) ve enfekte bir hasta ile riskli temas (p=0.001) kaygı düzeyini etkileyen faktörler olarak belirlenmiştir. Benzer şekilde, enfekte hastalarla sık temas eden birimlerde çalışma (p=0.001), kadın olma (p=0.033), doktor veya hemşire olma (p=0.013), sigara kullanma (p=0.005), beslenme alışkanlıkları (p=0.001), fiziksel egzersiz (p=0.001), destek tedavi alma (p=0.001) ve riskli temas (p=0.001) uyku bozukluğunu etkileyen faktörler arasında yer almıştır.
Sonuç: Pandemi dönemi, sağlık çalışanları üzerinde artan kaygı seviyeleri ve uyku bozuklukları gibi olumsuz psikolojik etkiler yaratmıştır.
AnahtarKelimeler: Covid-19, pandemi, sağlık çalışanları, anksiyete

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INTRODUCTION

The COVID-19 pandemic, whose transmission dynamics, disease progression and treatment mechanisms are still not fully understood, has forced individuals to adopt a more isolated lifestyle. It is believed that the pandemic has had a negative impact on anxiety levels due to the uncertainty of its duration. Healthcare workers, at the forefront of the fight against COVID-19, have experienced anxiety not only for themselves but also for their colleagues, friends, and families (Jackson D et al., 2020). Studies have shown that the problems caused by the pandemic are not limited to anxiety disorders, but have also led to significant sleep disturbances and lifestyle changes (Demir, 2020). The intense work pace, psychological burden, increased anxiety levels, and sleep disorders experienced by healthcare workers have led them to make lifestyle changes aimed at protecting themselves from illness, boosting immunity, and seeking verbal or even pharmacological support.

This study aims to evaluate the lifestyle changes, sleep disturbances and anxiety levels of healthcare workers in Hatay province during the COVID-19 pandemic, considering all these factors.

MATERIALS AND METHODS

Ethical approval for this cross-sectional survey study was obtained from the Non-Interventional Clinical Research Ethics Committee of Hatay Mustafa Kemal University (Approval no: 7, dated 14.01.2021).

The study was conducted among healthcare workers from primary, secondary, and tertiary healthcare centers in the central districts of Hatay (Antakya and Defne). The total number of healthcare professionals working in these centers was 5000. The sample size was calculated using the EpiInfo program, yielding a minimum sample size of 357 with a 95% confidence interval. With a margin of error of 10%, the planned sample size was 393.

The survey was conducted between 25 February 2021 and 25 March 2021 among healthcare workers from primary, secondary, and tertiary care facilities in the central districts of Hatay. Healthcare workers in Hatay province were invited to participate in the survey via links shared in professional WhatsApp groups. The survey was concluded after reaching 420 participants who agreed to participate and completed the questionnaire. Only descriptive professional data and responses to the survey questions were used, and no personal data were used.

Inclusion Criteria:

Active healthcare professionals.

Exclusion Criteria:

Healthcare workers on unpaid leave, pregnant individuals, those with a psychiatric diagnosis or on psychiatric medication, and those who did not provide consent.

The questionnaire consisted of three sections:

The first section collected socio-demographic and descriptive data.

The second section included the Spielberg State-Trait Anxiety Inventory.

The third section assessed sleep disorders using the Insomnia Severity Index.

The questionnaire, which was developed by reviewing the existing literature, contained 25 questions in two sections. The survey aimed to assess:

i. Sociodemographic characteristics such as age, sex and marital status,

ii. Lifestyle changes, including alterations in diet, physical activity, and smoking habits,

iii. Risk factors associated with the likelihood of contracting the coronavirus.

Spielberg State-Trait Anxiety Inventory (STAI):

The State Anxiety Scale (SAS) is a sensitive tool for assessing sudden emotional responses. The Trait Anxiety Scale (TAS), consisting of 20 items in the second section, assesses the general tendency of individuals to experience continuous anxiety (Lecompte et al., 1975).

Insomnia Severity Index (ISI):

The ISI is widely used to assess the severity of sleep disturbances in both community-based screening and clinical evaluation of insomnia (Bastien et al., 2001). It evaluates difficulties in falling asleep, maintaining sleep, satisfaction with sleep patterns, impairment of daily functioning, the perceived impact of sleep disturbances, and the stress caused by such disturbances (Boysan et al., 2010).

Statistical Analysis:

The normality of data distribution was assessed using the Kolmogorov-Smirnov test. The Mann-Whitney U test was used to compare two independent groups with non-normal distribution, while the Kruskal-Wallis test was used to compare numerical data inmore than two independent groups. Descriptive statistics included median, minimum, and maximum values for

numerical variables, and frequency and percentage for categorical variables. Statistical analyses were performed using SPSS Windows version 24.0, and p-values less than 0.05 were considered statistically significant.

RESULTS

The study initially reached a total of 420 participants, but after excluding those with incomplete responses, 402 individuals were included in the final analysis. Of the participants, 58.2% (n=234) were female and 41.8% (n=168) were male. In addition, 39.6% were single and 58% were married. Regarding the participants' professions and work areas, 50% (n=201) were physicians, 33.9% (n=136) were nurses or midwives, and 16% (n=65) were other healthcare professionals. In terms of specialty, 35.3% worked in internal medicine, 23.6% in surgical fields, 4.7% in basic science and 36.3% in other specialities (Table 1).

According to the State Anxiety Scale, 31.3% (n=126) of the participants had mild anxiety, 60.2% (n=242) had moderate anxiety and 8.5% (n=34) had severe anxiety. Based on the Trait Anxiety Scale, 19.9% (n=80) of the participants had mild anxiety, 72.9% (n=293) had moderate anxiety, and 7.2% (n=29) had severe anxiety (Figure1).

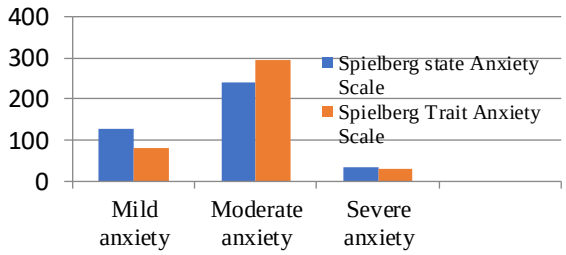

Figure 1. The anxiety levels of the healthcare professionals participating in the study, as determined by the Spielberger State-Trait Anxiety Inventory.

Table 1. The descriptive characteristics of the participants.

		n	%
Profession	Doctor Nurse, Midwife Other	201 136 64	50 33.9 16
In which specialty do you work?	Basic Sciences Internal Medicine Surgical Sciences Other	19 142 95 146	4.7 35.3 23.6 36.3
Smoking habit	I do not smoke. I was smoking; I quit before the pandemic. I was smoking; I quit during the pandemic. I am smoking.	250 32 5 115	62.1 7.9 1.2 28.6
Your dietary habits during the pandemic.	I am eating healthier. My eating habits have deteriorated. It has not changed.	94 150 158	23.4 37.3 39.3
Your current employment status.	Non-patient care specialty Pandemic clinic/ward Specialty clinic/ward Family health center Emergency department Contact tracing team Intensive care unit	22 79 115 58 37 18 73	5.5 19.7 28.6 14.4 9.2 4.5 18.2
Chronic diseases	Yes No	78 324	19.4 80.6
Have you had a COVID-19 infection?	Yes No	110 292	27.4 72.6
Have you had risky contact with someone who had a COVID-19 infection?	Yes No	249 152	62.1 37.8
Have you received vitamin/supplement support?	Yes No	148 254	36.8 63.2
Did your anxiety level increase during the pandemic?	Yes No Partially	227 60 115	56.5 14.9 28.6
Did you seek any support?	Medication therapy Verbal encouragement No	36 49 265	9.0 12.2 65.9

According to the Insomnia Severity Index scores, it was found that 36.1% (n=145) of participants had insignificant insomnia, 43.3% (n=174) had subthreshold insomnia, 19.2% (n=77) had moderate insomnia and 1.5% (n=6) had severe insomnia symptoms (Figure 2).

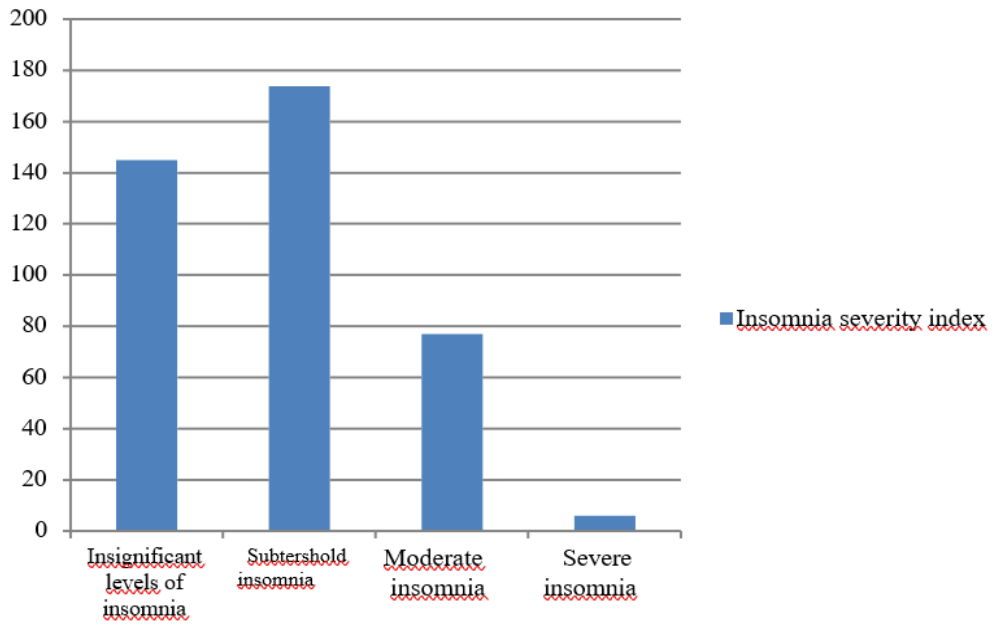

Figure 2. Sleep disorders of healthcare workers participating in the study according to the Insomnia Severity Index. The relationship between participants' sociodemographic characteristics, trait and state anxiety scores, and insomnia severity index scores is presented in Table 2.

The relationship between gender and participants' trait anxiety scores (p=0.100) and state anxiety scores (p=0.062) was found to be similar. However, women demonstrated significantly higher levels of sleep disturbance compared to men, as measured by the Insomnia Severity Index scores (p=0.033). A significant difference was observed between age groups and state anxiety scores (p=0.018). Participants aged 50–60 years had significantly higher state anxiety scores compared to other age groups (p<0.05).

Regarding marital status, trait anxiety scores differed significantly (p=0.018). Single participants exhibited significantly higher trait anxiety scores than married participants (p=0.004). When analyzed by profession, a significant difference in trait anxiety scores was found(p=0.015). Physicians had significantly higher trait anxiety scores than both nurses and midwives (p=0.002) and other healthcare workers (p=0.048). A significant difference in Insomnia Severity Index scores was observed between professions (p=0.01). Nurses had significantly higher insomnia severity scores compared to both physicians (p=0.023) and other healthcare workers (p=0.009). There was a significant association between the participants' work unit and their state anxiety scores (p=0.001). Internal medicine staff had significantly higher state anxiety scores than both surgical staff and those in other units (p=0.001). Furthermore, surgical unit staff had significantly higher state anxiety scores than those working in other units (p=0.027).

Table 2. The relationship between sociodemographic characteristics and the scores of state and trait anxiety, and the insomnia severity index.

Sociodemographic characteristics		Spielberg state		Spielberg trait		Insomnia severity index	
	n (%)	Median (min-max)	p	Median (min -max)	p	Median (mi n-max)	p
Gender							
Male	234 (%41.8)	44(21-78)	p=0.062	45.5(24-74)	p=0.100	9(0-28)	**p=0.033**
Female	168 (%58.2)	46(20-70)		47(29-75)		10(0-23)	
Age							
[1]20-30	185(%46)	46(21-78)	**p=0.018**	47(29-70)		10(0-28)	
[2]30-40	128 (%31.8)	43(20-70)	**1-4**	46(29-75)	p=0.153	9(0-23)	p=0.693
[3]40-50	78(%19.4)	44.5(20-70)	**2-4**	45(24-71)		10.5 (0-21)	
[4]50-60	11(%2.7)	50(39-72)	**3-4**	48(37-59)		12(2-18)	
Marital status							
[1]Married	233(%58)	45(20-72)		45(29-75)	**p=0.015**	10(0-28)	
[2]Single	159 (%39.6)	45(25-78)	p=0.563	47(29-70)	**1-2**	10(1-27)	p=0.579
[3]Widowed	10(%2.5)	44.5(25-61)		47.5(35-54)		11.5(0-20)	
Profession							
[1]Doctor	201(%50)	46(20-78)		47(29-75)	**p=0.005**	9(0-23)	**p=0.013**
[2]Nurse, midwife	136 (%33.9)	45(21-72)	p=0.175	45(24-63)	**1-2**	10(1-28)	**1-2**
[3]Other	64(%16)	43(25-63)		46(30-59)	**1-3**	7.5(0-28)	**2-3**
Speciality			**p=0.001**		**p=0.001**		**p=0.001**
[1]Basic Sciences	19(%4.7)	46(25-78)	**2-3**	47(39-70)	**1-2**	7(1-20)	**1-2**
[2]Internal medicine	142 (%35.3)	50(26-72)	**2-4**	49(29-68)	**1-3**	12(0-27)	**2-3**
[3]Surgery sciences	95(%23.6)	44(20-71)	**3-4**	44(30-75)	**2-3**	10(1-28)	**2-4**
[4]Other	146 (%36.3)	40(20-70)		44(24-74)	**2-4**	7(0-22)	**3-4**

A significant difference was found between participants` work units and their trait anxiety scores (p=0.001). Internal medicine staff had significantly higher trait anxiety scores than both surgical staff and staffin other units (p=0.001, p=0.001). Basic science staff also had significantly higher trait anxiety scores than those in other units (p=0.021).

There was a significant association between work unit and Insomnia Severity Index scores (p=0.001). Internal medicine staff had significantly higher insomnia severity scores than those working in basic sciences, surgical units, and other units (p=0.029, p=0.01, p=0.001). Moreover, surgical unit staff had significantly higher insomnia severity scores than staffin other units (p=0.001).

The relationship between lifestyle changes and participants' trait anxiety scores, state anxiety scores, and insomnia severity scores was examined (Table 3).

Changes in smoking habits during the pandemic showed a statistically significant relationship with state anxiety scores (p=0.011). Participants who had never smoked had significantly higher state anxiety scores than those who quited smoking before the pandemic (p=0.038). Current smokers had significantly higher state anxiety scores than non-smokers (p=0.004).

A statistically significant association was also found between changes in smoking habits during the pandemic and insomnia severity scores (p=0.005). Current smokers had significantly higher insomnia severity scores compared to both those who quited smoking before the pandemic and non-smokers (p=0.001, p=0.044).

Changes in eating habits during the pandemic revealed a statistically significant relationship with state anxiety scores (p=0.001). Participants who reported a disruption in their eating routine had significantly higher state anxiety scores compared to those who reported eating healthier or reported no change in their eating habits (p=0.004, p=0.001).

Table 3. The relationship between lifestyle changes and trait anxiety, state anxiety and insomnia severity index scores.

Lifestyle Changes		Spielberg state		Spielberg trait		Insomnia severity index	
	n (%)	Median (min-max)	p	Median (min-max)	p	Median (min-max)	p
Smoking							
I do not smoke.	250(%62.1)	44(20-78)	**p=0.011**	46(24-75)		9(0-22)	**p=0.005**
I quit smoking before the pandemic.	32(%7.9)	36(32-62)	**1-2**	47(36-64)		9(0-20)	**1-4**
I quit smoking during the pandemic.	5(%1.2)	49(33-52)	**1-4**	47(34-64)	p=0.927	12(6-20)	**2-4**
I currently smoke.	115(%28.6)	46(20-72)		46(29-71)		11(1-28)	
Dietary habits							
I am eating healthier.	94(%23.4)	44(20-67)	**p=0.001**	45.5(30-64)	**p=0.001**	8(0-20)	**p=0.001**
My eating pattern has deteriorated.	150(%37.3)	48(22-78)	**1-2**	48(29-75)	**1-2**	11(3-28)	**1-2**
It has not changed.	158(%39.3)	42(20-72)	**2-3**	45(24-74)	**2-3**	8(0-22)	**2-3**
Physical Exercise							
Increased	67(%16.6)	44(21-72)	**p=0.045**	45(30-68)		10(0-28)	**p=0.001**
Decreased	211(%52.4)	46(23-78)		47(29-75)	p=0.120	11(0-27)	
No change	124(%30.8)	42(20-63)	**2-3**	46(24-74)		8(1-22)	**2-3**
Vitamin/Medication Support Intake							
Yes	148(%36.8)	46(20-72)	p=0.131	46(24-64)	p=0.863	11(1-28)	**p=0.002**
No	254(%63.2)	44(20-78)		46(29-65)		9(0-23)	
Social Distancing Compliance							
Yes	251(%62.4)	45(20-78)		46(24-74)		10(0-28)	
No	39(%9.7)	43(21-72)	p=0.755	47(35-62)	p=0.308	8(0-20)	p=0.349
Partially	112(%27.8)	46(22-72)		47(24-75)		10(1-22)	
Mask use							
Yes	329(%81.8)	45(20-78)		46(29-74)		10(0-28)	
No	17(%4.2)	41(24-72)	p=0.363	45(35-62)	p=0.155	8(0-20)	p=0.430
Partially	56(%13.9)	47(21-71)		47(24-75)		9.5(2-22)	
Support Seeking							
Verbal Counseling	36(%9)	49(26-72)	**p=0.001**	47(32-65)	**p=0.028**	11(1-27)	**p=0.001**
Medication Therapy	49(%12.2)	50(27-71)	**1-3**	48(30-64)	**2-3**	13(1-28)	**1-3**
No	265(%65.9)	44(20-72)	**2-3**	46(24-75)		9(0-23)	**2-3**

A statistically significant difference was found between changes in eating habits during the pandemic and trait anxiety scores (p=0.001). Participants who reported a disruption in their eating routine had significantly higher trait anxiety scores than those who reported eating healthier or those whose eating habits remained unchanged (p=0.009, p=0.001).

There was also a significant difference between changes in eating habits and Insomnia Severity Index scores (p=0.001). Participants with a disrupted eating routine had significantly higher insomnia severity scores than those who ate healthier or those whose eating habits remained unchanged (p=0.001, p=0.001).

Changes in physical activity during the pandemic were significantly associated with state anxiety scores (p=0.045). Participants who reported a decrease in physical activity had significantly higher state anxiety scores compared to those whose exercise habits remained unchanged (p=0.013). These participants also had higher insomnia severity scores than those whose exercise habits remained unchanged (p=0.001).

A significant difference was observed between the use of prophylactic vitamins and medications and insomnia severity scores. Participants taking prophylactic vitamins and medications had significantly higher insomnia severity scores compared to those who did not (p=0.002).

Participants using pharmacological support had significantly higher state anxiety scores than those who did not use any form of support (p=0.001). Moreover, the use of pharmacological support was associated with significantly higher trait anxiety scores compared to participants who did not use any support (p=0.019).

Both verbal and pharmacological support were associated with higher insomnia severity scores compared to those who received no support. However, there was no significant difference between the verbal and pharmacological support groups (p=0.036, p=0.001).

The relationship between risk factors for contracting coronavirus infection and trait anxiety, state anxiety, and insomnia severity scores was also examined (Table 4).

A significant difference in state anxiety scores was foundbased on participants' current work unit during the pandemic (p=0.001). Those working in pandemic outpatient clinics or wards had significantly higher state anxiety scores than those in non-patient-facing units and specialty outpatient clinics or wards (p=0.033, p<0.001). State anxiety scores of specialty outpatient clinic or ward workers were significantly lower than those of family health center workers and intensive care unit staff (p<0.001, p=0.009).

A similar significant difference was found for trait anxiety scores in all work units (p=0.001). Workers in pandemic outpatient clinics or wards had significantly higher trait anxiety scores than all other groups of healthcare workers (p<0.001 for all comparisons). Additionally, specialty outpatient clinic or ward staff had significantly lower trait anxiety scores compared to family health center staff, emergency service workers, filiation team members, and intensive care unit staff (p<0.001, p=0.001, p=0.006, p<0.001).

Regarding insomnia severity scores, a significant difference was found based on participants' work unit (p=0.001). Workers in pandemic outpatient clinics or wards had significantly higher insomnia severity scores than specialty outpatient clinic or ward staff and afiliation team members (p<0.001, p=0.008). Specialty outpatient clinic or ward workers had significantly lower insomnia severity scores than family health center staff, emergency service workers, and intensive care unit staff (p<0.001 for all comparisons). Filiation team members also had significantly lower insomnia severity scores than family health center staff, emergency service workers, and intensive care unit staff (p=0.031, p=0.005, p=0.03).

Participants with chronic conditions reported significantly higher state and trait anxiety scores than those without chronic conditions (p=0.004, p=0.007).

Finally, those who had contact with a confirmed COVID-19 patient exhibited significantly higher state anxiety scores, trait anxiety scores, and insomnia severity scores than those who had no such contact (p=0.001).

Table 4. Relationship of risk factors with trait and state anxiety scores and ınsomnia severity ındex scores.

Risk factors		Spielberg state		Spielberg Trait		Insomnia severity index	
	n (%)	Median(min-max)	p	Median(min-max)	p	Median(min-max)	p
Current Work Unit Units without patient care Pandemic clinic/ward Specialty clinic/ward Family health center Emergency department Contact tracing team Intensive care unit	22 (%5.5) 79 (%19.7) 115(%28.6) 58 (%14.4) 37 (%9.2) 18 (%4.5) 73 (%18.2)	[1]43.5 (21-62) [2]48 (25-78) [3]40 (20-71) [4]46 (22-70) [5]45 (21-62) [6]46 (22-58) [7]47 (23-71)	**p=0.001** **1 - 2** **2 - 3** **3 - 4** **3 - 7**	[1]46 (32-58) [2]51 (41-74) [3]41 (29-60) [4]47 (33-64) [5]47 (24-65) [6]49 (34-63) [7]46 (29-75)	**p=0.000** **1 - 2** **2 - 7** **2 - 5** **2 - 4** **2 - 3** **3 - 4** **3 - 5** **3 - 6** **3 - 7**	[1]9.5 (3-19) [2]11 (0-22) [3]7 (0-27) [4]11.5 (1-23) [5]12 (3-20) [6]8 (1-13) [7]10 (3-28)	**p=0.000** **2 - 3** **2 - 6** **3 - 4** **3 - 5** **3 - 7** **4 - 6** **5 - 6** **6 - 7**
Chronic diseases Yes No	78(%19.4) 324(%80.5)	49.5 (21-71) 44 (20-78)	**p=0.004**	47 (30--63) 46 (24-75)	**p=0.007**	12 (0-28) 10 (0-27)	p=0.196
Have you had a COVID-19 infection? Yes No	110(%27.3) 292(%72.6)	45 (20-71) 45 (20-78)	p=0.782	46 (24-75) 47 (29-74)	p=0.738	10 (0-28) 10 (0-27)	p=0.677
Have you had risky contact with someone who had a COVID-19 infection? Yes No	249(%62) 152(%37.9)	47 (21-78) 40 (20-67)	**p=0.000**	48 (29-75) 41 (24-58)	**p=0.000**	11 (0-28) 7 (0-27)	**p=0.000**
Did you undergo quarantine during the pandemic? Yes No	153(%38) 249(%61.9)	45 (20-72) 45 (20-78)	p=0.965	46 (24-75) 46 (29-74)	p=0.924	10 (0-28) 10 (0-28)	p=0.913

DISCUSSION

In our study, we found that 68.7% of healthcare workers had moderate to severe anxiety symptoms according to the Spielberger State Anxiety Scale, while 80.1% had similar levels according to the Spielberger Trait Anxiety Scale. Liu et al. conducted a study of 4,679 doctors and nurses in348 hospitals in China during the COVID-19 pandemic, revealing that they experienced high levels of anxiety and received psychological support (Liu et al., 2020). In another study from India during the COVID-19 pandemic, approximately one in three healthcare workers reported symptoms of anxiety and depression (Gupta et al., 2020). In a study by Lai et al., 44.6% of participants reported anxiety symptoms (Lai et al., 2019). A review of 44 studies onthe psychological impactof the pandemic reported that 45% of healthcare workers experienced anxiety symptoms (Preti et al., 2020). El-Hage et al. compiled literature from the 2003 SARS outbreak and the 2009 H1N1 pandemic, updated with current COVID-19 information, and foundthat healthcare workers had elevated anxiety levels and may face long-term psychological problems after the pandemic (El-Hage et al., 2020). Studies conducted in Turkey assessed the mental health status of pediatric residents during the pandemic and found that 89.1% had clinically significant anxiety symptoms based on the Spielberger Trait Anxiety Scale (Özyurt et al., 2021). Another study ofmidwives and nurses in Turkey, using the Trait and State Anxiety Scales, found that participants experienced moderate levels of anxiety (Durmaz et al., 2020). Our findings are consistentwith the existing literature.

In our study, we found that 43.3% of healthcare workers experienced subthreshold insomnia, 19.2% had moderate insomnia, and 1.5% suffered from severe insomnia. According to a study published by Haung et al., one in four healthcare workers reported sleep problems due to exhausting, long, and intense work schedules (Huang et al., 2020). A cross-sectional study conducted during the coronavirus pandemic in China, using the Pittsburgh Sleep Quality Index, revealed high levels of sleep disturbance, particularlyamong pediatric healthcare workers (Wang S et al., 2020). In another study from China, one in three healthcare workers reported symptoms of insomnia (Zhang C et al., 2020). In Turkey, Ataç et al. reported that 53.1% of healthcare workers experienced sleep problems (Ataç et al., 2020). In another study conducted in Turkey, 52.4% of participants reported sleep problems. Our study suggeststhat working in units with close contact with patients, lifestyle changes during the pandemic, a history of high-risk exposure, and receiving pharmacological or verbal support maybe considered risk factors for sleep problems.

Our study did not find a significant relationship between gender and anxiety levels; however, women experienced significantly higher sleep disturbance than men. Wang et al. found that women had statistically significant higher levels of stress, depression, and anxiety than men (Wang C et al., 2020). A study in Turkey during the COVID-19 pandemic found statistically significant increase in anxiety and depression levels in women (Koksal et al., 2020). We believe that the time elapsed since the pandemic (1.5 years) and the fact that most participants were healthcare workers in close contact with infected patients may have attenuated the differences in findings.

Regarding the relationship between gender and sleep disturbance, Şahin et al. found significantly higher levels of sleep disorders in women (Şahin et al., 2020). Similarly, Zhang et al. reported that women experienced more sleep disturbances (Zhang C et al., 2020).

In our study, the state anxiety scores were found to be statistically sihgificantly higher inparticipants aged 50-60 years than in other age groups; however, while trait anxiety scores and sleep disturbance soceres were higher but not statistically significant. A study examining anxiety and depression levels in operating room staff during the COVID-19 pandemic found that participants aged 40 and overhad statistically significantly higher levels of anxiety and depression (Koksal et al., 2020). Sakaoğlu et al. also investigated anxiety levels among healthcare workers during the COVID-19 outbreak; although older participants had higher trait and state anxiety scores, no statistically significant difference was found (Sakaoğlu et al., 2020).

Our study found that single participants had higher trait anxiety levels than married participants, with no significant differences in state anxiety levels and insomnia severity index scores. A study in Turkey foundthat single individuals had statistically significantly higher anxiety and depression levels (Koksal et al., 2020). Elbay et al. found that being single was associated with higher levels of anxiety and depression (Elbay et al., 2020).

When comparing anxiety levels between different professions, varying results emerge in the literature. Liu et al. reported that nurses had statistically significantly higher levels of anxiety and depression than physicians (Liu et al., 2020). In Turkey, a study by Korkmaz et al. Reported that nurses had higher anxiety levels and sleep disturbance than other healthcare workers (Korkmaz et al., 2020). Similarly, Şahin et al. found that nurses experienced

higher anxiety levels and sleep disturbance than other healthcare workers (Şahin et al., 2020). However, there are also studies suggestingthat doctors have higher anxiety levels. Holmes et al. discussed the importance of communication regarding infectious diseases and foundthat doctors had higher anxiety levels than other healthcare workers (Holmes, 2008). In a study by Sakaoğlu et al., although the state anxiety scores of doctors were found to be higher than those of nurses, no statistically significant difference was shown (Sakaoğlu et al., 2020). In our study, we found that doctors had higher trait anxiety scores than other healthcare workers, while nurses exhibited higher levels of sleep disturbance than both doctors and other healthcare workers. We believe that the larger number of doctors in our study and their predominant work in pandemic services, intensive care units, and family health centers contributed to the higher anxiety and insomnia severity levels recorded among doctors.

In our study, healthcare workers in internal medicine units had higher trait and state anxiety levels and insomnia severity index scores compared to those in other units. This difference may be due to increased exposure to infected patients. During the SARS pandemic, the majority of healthcare workers in high-risk units reported avoiding social contact and experiencing high levels of anxiety (Chua et al., 2004). Our findings are consistent with the literature.

Regarding the relationship between smoking and anxiety, our study found that current smokers reported higher anxiety levels. A study comparing COVID-19 data with smoking habits showed that both current smokers and quitters reported higher levels of concern about illnessthan non-smokers (Jackson SE et al., 2020). Similarly, another study linked smoking to increased anxiety, depression, and sleep disturbance (Szylińska et al., 2020). Stanton et al. also found that smoking was associated with higher symptoms of stress, anxiety, and depression (Stanton et al., 2020).

When examining lifestyle changes during the coronavirus pandemic and their association with anxiety levels, a study in France surveyed 37,252 individuals about changes in diet and physical activity during the COVID-19 pandemic, and found that 53% reported decreased physical activity, increased consumption of processed foods, and decreased consumption of fresh foods (Deschasaux-Tanguy et al., 2021). Another study conducted in Spain with 1,155 participants reported that participants' eating habits had worsened, and 23.1% reported taking vitamin and mineral supplements, with vitamin D being the most commonly used supplement (25.8%), followed by vitamin C (22.2%) and other vitamins, minerals, and herbal products (Pérez-Rodrigo et al., 2021). A study by the University of California utilized step count data from smart phone applications during the COVID-19 pandemic and reported a global decreasein step count due to social distancing and restrictions (Tison et al., 2020). In a study assessing the relationship between physical activity levels and mental health status in adult twin pairs during the COVID-19 pandemic, 42% reported decreased physical activity levels, 31% reported no change, and 27% reported increased activity. Those with decreased physical activity levels showed higher levels of stress and anxiety, with a statistically significant negative association reported between physical activity levels and anxiety/stress levels (Duncan et al., 2020). Another study also found that decreased physical activity was associated with higher levels of stress, anxiety, and depression symptoms (Stanton et al., 2020). In our study, 52.4% of participants reported decreased physical activity, 30.8% reported no change, and 16.6% reported increased activity. When the relationship between physical activity levels was examined, it was found that those with decreased physical activity levels had higher anxiety levels. Regarding the relationship between physical activity levels and insomnia severity index scores, it was observed that both the increased and decreased physical activity groups had higher scores compared to those whose activity levels remained the same.

In terms of compliance with pandemic-related rules, a study conducted in Turkey found that two-thirds of participants believed that wearing masks, practicing hand hygiene, and maintaining social distance were sufficient for disease prevention, while one-third hada fatalistic attitude and did not comply with the rules (Öncü et al., 2021). When examining the attitudes and practices of healthcare workers regarding mask use during the pandemic, another study reported a generally positive attitudes towards mask use, although knowledge and practical application remained at low to moderate levels (Kumar et al., 2020). In our study, 62% of participants reported compliance with social distancing rules and 81.8% reported taking apprropriate precautions regarding mask use.

The reluctance to wear masks was associated with a higher likelihood of anxiety and stress, suggesting that anxiety symptoms lead to difficulties in following health measures. In our study, anxiety levels were found to be higher inthose who did not wear masks consistently compared to those who did wear them consistently. In addition, participants reporting inadequate precautions regarding mask use had significantly higher anxiety and insomnia severity index scores.

In our study, participants with pharmacological support exhibited significantly lower trait anxiety levels compared to those without. Similarly, verbal support was found to be beneficial inreducing

anxiety levels. Studies have demonstrated that supportive communication is crucial in managing anxiety during healthcare crises (Holmes et al., 2020). Furthermore, effective communication and psychological support can reduce stress and anxiety levels among healthcare workers during crises (Holmes et al., 2020). In our study, the role of psychological support was significant; it was found that healthcare workers receiving verbal or pharmacological support had lower anxiety levels.

Our study aimed to evaluate the anxiety, mental health, and burnout levels of healthcare workers during the COVID-19 pandemic and yielded significant findings. However, we believe that healthcare workers are similarly negatively affected not only during the pandemic, but also in all emergency health crises where workload, stress, and uncertainty increase, such as earthquakes, wars, and floods.

Our study only assessed the situation during the pandemic and did not look at long-term effects. While it is hoped that this study will provide insights into future research on similar health crises, the lack of investigation into long-term impacts can be considered as a limitation of the study.

In conclusion, our findings highlight that healthcare workers face moderate to severe levels of anxiety and insomnia due to pandemic conditions. Psychological support is essential to alleviate these problems. The study highlights the importance of identifying those at risk and providing appropriate support to improve the mental well-being of healthcare workers during health crises.

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Ethics Approval

Approval was obtained from the Non-Interventional Clinical Research Ethics Committee of Hatay Mustafa Kemal University (Approval No: 14.01.2021/7).

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Conflict of Interest

The authors declare that there are no personal or financial conflicts of interest related to this study.

Author Contributions

Idea/Concept: Ümmühan YILMAZ, Erhan YENGİL; **Design:** Ümmühan YILMAZ, Erhan YENGİL; **Supervision/Consulting:** Ümmühan YILMAZ; **Data Collection and/or Processing:** Ümmühan YILMAZ; **Analysis and/or Interpretation:** Ümmühan YILMAZ, Erhan YENGİL; **Literature review:** Ümmühan YILMAZ, Erhan YENGİL; **Writing of the Article:** Ümmühan YILMAZ, Erhan YENGİL; **Critical Review:** Ümmühan YILMAZ, Erhan YENGİL.

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