



EVALUATION OF FACTORS AND ASSOCIATED WITH THE ANXIETY, DEPRESSION AND BURNOUT LEVELS OF HEALTHCARE PROFESSIONALS AT THE LAST PERIOD OF COVID-19 PANDEMIC IN TURKEY

Türkiye’de COVID-19 pandemisinin son periyodunda sağlık çalışanlarının anksiyete, depresyon ve tükenmişlik düzeyleri ve ilişkili faktörlerin değerlendirilmesi

Nihan AK¹ , Gül den SARI² , Belgin ORAL³ , Cebra il ŞİMŞEK² 

Abstract

The prevalence of depression, anxiety, and burnout syndrome in healthcare workers is so high that it can't be underestimated, because of the intense workload, shift work, night shifts, and problems encountered during working hours. This study was planned to evaluate the factors related to anxiety, depression, and burnout levels of healthcare professionals working in a training and research hospital. This descriptive study included 196 health care workers working in the hospital. Statistical analysis of the categorical data was performed by Chi-square test. Statistical analysis of quantitative data was performed by Mann Whitney U test and by Kruskal Wallis variance analysis because it did not fit normal distribution. In this study, the frequency of depression was found to be 24.0% in healthcare workers and the frequency of anxiety was 29.6%. It was determined that the presence of depression was more common in night and shift workers. Anxiety was statistically higher in health workers with chronic diseases and sleep problems. Compared to other health workers, it was found that the emotional exhaustion and depersonalization levels of the Maslach burnout scale sub-headings were higher in physicians. These results are very important in terms of identifying psychosocial risk factors in health workers and forenlightening to improve working conditions.

Keywords: Anxiety, burnout, COVID-19, depression, healthcare workers.

Özet

Yoğun iş yükü, vardiyalı çalışma, gece vardiyaları ve çalışma esnasında yaşanan sorunlar nedeniyle sağlık çalışanlarında depresyon, anksiyete ve tükenmişlik sendromu görülme sıklığı azımsanmayacak kadar yüksektir. Bu çalışma, bir eğitim ve araştırma hastanesinde görev yapan sağlık çalışanlarının anksiyete, depresyon ve tükenmişlik düzeyleri ile ilişkili faktörlerin değerlendirilmesi amacıyla planlanmıştır. Bu tanımlayıcı çalışmaya hastanede görev yapan 196 sağlık çalışanı dahil edilmiştir. Kategorik verilerin istatistiksel analizi Ki-kare testi ile yapılmış olup nicel verilerin istatistiksel analizi normal dağılıma uymadığı için Mann Whitney U testi ve Kruskal Wallis varyans analizi ile yapılmıştır. Bu çalışmada sağlık çalışanlarında depresyon sıklığı %24,0, anksiyete sıklığı %29,6 olarak bulunmuştur. Gece ve vardiyalı çalışanlarda depresyon varlığının daha fazla olduğu belirlenmiştir. Kronik hastalığı olan sağlık çalışanlarında ve uyku problemi olan sağlık çalışanlarında anksiyete varlığının istatistiksel olarak daha fazla olduğu tespit edilmiştir. Hekimlerde Maslach tükenmişlik ölçeği alt boyutlarından duygusal tükenme ve duyarsızlaşma düzeylerinin diğer sağlık çalışanlarına göre daha yüksek olduğu saptanmıştır. Bu sonuçlar, sağlık çalışanlarında psikososyal risk faktörlerinin belirlenmesi ve çalışma koşullarının iyileştirilmesine yönelik ön bilgi verilmesi açısından oldukça önemlidir.

Anahtar kelimeler: Kaygı, tükenmişlik, COVID-19, depresyon, sağlık çalışanları.

1- Occupational Diseases Specialist, Erzurum City Hospital, Occupational Diseases Clinic. Erzurum, Türkiye

2- University of Health Sciences, Atatürk Pulmonary Diseases and Thoracic Surgery Training and Research Hospital, Occupational Diseases Clinic. Ankara, Türkiye

3- Occupational Diseases Specialist, Kayseri City Hospital, Occupational Diseases Clinic. Kayseri, Türkiye

Sorumlu Yazar / Corresponding Author: Nihan AK, MD

e-posta / e-mail: nihan.onuk@hotmail.com

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ORCID: Nihan AK : 0000-0002-8524-659X
Gül den SARI : 0000-0003-1098-4405
Belgin ORAL : 0000-0002-2246-4733
Cebra il ŞİMŞEK : 0000-0003-4767-6393

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Introduction

The World Health Organization (WHO) defined the concept of health as "not only the absence of disease and disability but also a state of complete physical, mental, and social well-being" (1). As it can also be understood from this definition, mental health is also important, in order to mean absolute health. Depression can be defined as a miserable mood disorder (2). Not enjoying life, reluctance and apathy, a decrease in one's energy, feelings of guilt, and changes in sleep routine and appetite are the conditions that can be seen in depressive mood disorder (3). Anxiety is a common, unpleasant, vague premonition of negativity that everyone can experience occasionally (2). Anxiety is a feeling of worry or a specific fear with a sense of impending disaster for an unknown reason or a state of unconsciousness (4). Burnout is the drain of mental and physical energy after long-term work-related stress (5). According to Maslach et al., burnout is a syndrome that manifests itself with desensitization against people who are encountered due to occupational reasons, feeling emotionally exhausted, and a decrease in personal success and competence in professions where people work one-on-one as a requirement of their job (6). The prevalence of depression, anxiety, and burnout syndrome in healthcare workers is so high that it can't be underestimated, because of the intense workload, shift work, night shifts, and problems encountered during working hours. The prevalence of depression is 15% in the general population, while it is 38% in physicians (7). In a study conducted with healthcare professionals, clinical depression was detected in 16.7% of the participants according to the Beck Depression Scale (5). In a study conducted with nurses working in the emergency department, it was observed that nearly half of the nurses experienced burnout (8). In a study conducted with healthcare professionals at a university

hospital in Ankara, the depression rate of the participants was 11.2% according to the Beck Depression Scale and the anxiety rate was 43.2% according to the Beck Anxiety Inventory (9).

After the first case was reported in Wuhan, China's Hubei province in December 2019, the COVID-19 viral infection, which spread rapidly all over the world, was declared as a global health emergency by the WHO on January 30, 2020 (10). Since the beginning of the COVID-19 pandemic, healthcare professionals all over the world have worked with great devotion. Infection-related deaths and permanent damage to various organs and systems have occurred in healthcare workers as a result of virus contact. Besides the infection-related death or systemic damage, the psychological effects of the pandemic on healthcare workers have also been devastating. In a meta-analysis, during the COVID-19 pandemic, the prevalence of anxiety in healthcare workers was reported as 30.0%, depression and depressive symptoms was 31.1%, posttraumatic stress disorder was 31.4%, and sleep problems were 44.0% (11). To be in complete mental and social well-being is very important for all healthcare professionals, especially physicians, who have an intense workload and high work pace and are faced with various stress factors during working hours. How the healthcare workers feel mentally during and after working hours, whether they experience burnout related to their work and the causative factors should be determined, and studies should be carried out to control and eliminate these factors that impair psychosocial health. This study was planned to evaluate the factors related to anxiety, depression, and burnout levels of healthcare professionals working in a training and research hospital.

Material and Method

This descriptive study was carried out with the participation of healthcare

professionals over the age of 18, who were working at Ankara Atatürk Chest Diseases

and Thoracic Surgery Training and Research Hospital. Data collection was carried out in March-May 2022. The population of this study consisted of healthcare professionals working in the hospital (n = 1342). The G Power 3.1 program was used to calculate the number of samples and perform power analysis. Based on a research article with similar hypotheses, it was determined that at least 210 samples should be studied with 95% power and 5% alpha error. Simple random sampling method was used in this study. 14 healthcare professionals didn't accept to be included in the study. 93% of the sample was reached. The study was conducted with the analyses of 196 participants.

The inclusion criteria involved being 18 years of age or older and being a permanent healthcare professional. The exclusion criteria involved interns and temporary healthcare professionals.

A survey form, designed by the study team, entitled "Anxiety, Depression and Burnout Level of the Employees in the Training and Research Hospital and Evaluation of the Related Factors" was used as the data source. The survey form consisted of four parts. The first part included questions about the demographic characteristics of the participants. The second part included the Beck Depression Inventory, the third part included the Beck Anxiety Inventory, and the fourth part included the Maslach Burnout Inventory. The data was collected by face-to-face interview method. The mean duration of the survey was 10 minutes. Dependent variables of the research were Beck Depression Inventory, Beck Anxiety Inventory, and Maslach Burnout Inventory. Independent variables were socio-demographic characteristics (age, gender, marital status) and characteristics related to working life (task, place of work, and working time in the profession).

Beck Anxiety Inventory is a likert-type scale containing 21 statements. Each proposition is scored between 0 and 3 points. As the scale score increases, the level of anxiety increases. In this study, individuals with a scale score of 16 and above were accepted as "having anxiety" (12). In the

Beck Anxiety Scale scoring, regarding cut-off scores, 0-7 points were accepted as minimal anxiety, 8-15 points as mild anxiety, 16-25 points as moderate anxiety, and 26-63 points as severe anxiety (13).

Beck Depression Inventory is a likert-type scale containing 21 statements. Each statement is scored between 0 and 3 points. As the scale score increases, the level of depression increases. In this study, individuals with a scale score of 17 and above were accepted as "having depression" (12). In Beck Depression Scale scoring, cut-off values were 0-9 points as no depression, 10-16 points as mild depression, 17-29 points as moderate depression, and 30-63 points as severe depression (13).

Maslach Burnout Scale is a 5-point likert type scale with 22 propositions. Each proposition is scored between 0 and 4 points. There are sub-dimensions of emotional exhaustion, depersonalization and lack of personal accomplishment. While emotional exhaustion and depersonalization include negative propositions, lack of personal accomplishment includes positive propositions and is scored on the contrary (14).

In order to perform the research and use the data, approval was obtained from the Ethics Committee of Keçiören Training and Research Hospital (23.02 .2021 date and 2012-KAEK-15/2240 number). The research was carried out in accordance with the Principles of the Declaration of Helsinki.

Statistical analysis; the research data were evaluated using the SPSS 23.0 statistical package program. Descriptive statistics were presented as mean value±standard deviation, median (minimum-maximum), frequency, and percentage. The conformity of continuous variables to normal distribution was evaluated by using visual (histogram and probability graphs) and analytical methods (Kolmogorov-Smirnov/Shapiro-Wilks tests). Statistical analysis of the categorical data was performed by Chi-square test. Statistical analysis of quantitative data was performed by Mann Whitney U test and by Kruskal Wallis variance analysis because it did not fit normal distribution. The statistical significance level was accepted as $p < 0.05$.

Results

In the study, 38.8% of the participants were between the ages of 18-29 years, 74.0% were women, 57.1% were married and 24.1% were primary school graduates. Of the participants, 22.4% stated that they

had a chronic disease, 59.7% stated that their general health status was good, and 31.6% stated that their economic condition was well (Table 1).

Table 1: Demographic data of the participants, Ankara, 2023.

Variables	n	%*
Age Groups (n=196)		
18-29 years	76	38.8
30-39 years	59	30.1
40-49 years	44	22.4
50 years and older	17	8.7
Gender (n=196)		
Female	145	74.0
Male	51	26.0
Marital Status(n=196)		
Married	112	57.1
Single	78	39.8
Divorced	6	3.1
Education (n=196)		
Primary School	47	24.1
Secondary School	24	12.2
High School	83	42.3
University	42	21.4
Having Any Chronic Disease (n=196)		
Yes	44	22.4
No	152	77.6
Perceived Health Situation (n=196)		
Good	117	59.7
Middle	69	35.2
Bad	10	5.1
Economical Situation (n=196)		
Good	62	31.6
Middle	117	59.7
Bad	17	8.7

*Column percentage

Table 2: Working conditions and health problems of the participants, Ankara, 2023.

Variables	n	%*
Title (n=196)		
Physician	57	29.1
Nurse	39	19.9
Medical officer and secretary	29	14.8
Other**	71	36.2
Working year (n=196)		
≤20 years	166	84.7
>20 years	30	15.3
Shift Work and Night Shift (n=196)		
Yes	165	84.2
No	31	15.8
Receiving Psychological support (n=196)		
Yes	50	25.5
No	146	74.5
Having Sleeping Problem (n=196)		
Yes	56	28.6
No	140	71.4

*Column percentage; **The most frequent responses in this group were 'traniee', 'radiology technician', 'dietician', and 'cleaning staff'

Also, 29.1% of the participants were physicians, 19.9% nurses and 84.7% of them had been working for 20 years or less. As it can be seen in Table 2, 25.5% of the participants stated that they received psychological support and 28.6% reported that they had sleep problems (Table 2).

According to the Beck Anxiety Inventory, 19.4% of the participants had moderate anxiety and 10.2% had severe anxiety. According to the Beck Depression Inventory, 21.4% had moderate depression and 2.6% had severe depression (Table-3).

Table 3: Descriptive analysis of Beck Anxiety Inventory Scores and Beck Depression Inventory Scores, Ankara, 2023.

Variables	n	%*
Beck Anxiety Inventory Scores(n=196)		
Minimal (0-7 range)	81	41.3
Mild (8-15 range)	57	29.1
Moderate (16-25 range)	38	19.4
Severe (26-63 range)	20	10.2
Beck Depression Inventory Scores(n=196)		
No depression (0-9 range)	88	44.9
Mild (10-16 range)	61	31.1
Moderate (17-29 range)	42	21.4
Severe (30-63 range)	5	2.6

*Column percentage

Table 4: Beck Depression Inventory, Beck Anxiety Inventory Scores and demographic characteristics of health care professionals, Ankara, 2023.

Variables	Beck Depression and Beck Anxiety Inventory								p
	Depression%*				Anxiety				
	Yes		No		Yes		No		
	n	(%)*	n	(%)*	n	(%)*	n	(%)*	
Age Groups (n=196)									
≤30 years	5	17.2	24	82.8	5	17.2	24	82.8	p=0.342**
>30 years	42	25.1	125	74.9	53	31.7	114	68.3	p=0.099**
Gender (n=196)									
Female	37	25.5	108	74.5	51	35.2	94	64.8	p=0.388**
Male	10	19.6	41	80.4	7	13.7	44	86.3	p=0.002**
Education (n=196)									
Primary School	8	17.0	39	83.0	7	14.9	40	85.1	p=0.595 p=0.040
Secondary School	7	29.2	17	70.8	11	45.8	13	54.2	
High School	22	26.5	61	73.5	26	31.3	57	68.7	
University	10	23.8	32	76.2	14	33.3	28	66.7	
Marital Status(n=196)									
Married	26	23.2	86	76.8	34	30.4	78	69.6	p=0.772**
Single/Divorced	21	25.0	63	75.0	24	28.6	60	71.4	p=0.786**
Having Any Chronic Disease(n=196)									
Yes	13	29.5	31	70.5	21	47.7	23	52.3	p=0.334**
No	34	22.4	118	77.6	37	24.3	115	75.7	p=0.004**
Having Sleeping Problems(n=196)									
Yes	24	42.9	32	57.1	29	51.8	27	48.2	p<0.001**
No	23	16.4	117	83.6	29	20.7	111	79.3	p<0.001**
Shift Work and Night Shift (n=196)									
Yes	34	20.6	131	79.4	46	27.9	119	72.1	p=0.015**
No	13	41.9	18	58.1	12	38.7	19	61.3	p=0.235**

*Row percentage; **Chi-Square Test With Yates Correction

Regarding gender, the presence of anxiety was found to be higher in females (35.2%) than males (13.7%) ($p=0.002$). The presence of anxiety was found to be higher in healthcare workers with a chronic disease (47.7%) than those without (24.3%) ($p=0.004$). In those who stated that they had sleep problems, the presence of anxiety and depression was found to be higher than in

those without sleep problems ($p<0.001$) (Table 4).

Among the sub-headings of the Maslach burnout scale, the scores of emotional exhaustion and depersonalization were found to be higher in physicians compared to other healthcare workers' levels ($p<0.001$) (Table 5).

Table 5: Maslach Burnout Scale Score of Healthcare Professionals, Ankara, 2023.

	Mean±Standard deviation	p value
Emotional Exhaustion (n=196)		
Physicians	19.87±8.18	p<0.001*
Other	13.97±8.62	
Depersonalization(n=196)		
Physicians	7.85±4.20	p<0.001*
Other	4.69±3.96	
Personal Accomplishment (n=196)		
Physicians	14.17±5.24	p=0.385*
Other	15.64±6.95	

*Mann Whitney U Test.

Discussion

In this study conducted in the last quarter of the COVID-19 pandemic, with healthcare professionals working in a training and research hospital, the mean age of the participants was found to be 33.53 ± 10.6 years. In this study, the depression rate is found to be 24.0% and the anxiety rate is 29.6% in health workers. It was found that 10.2% of the participants had severe anxiety and 2.6% had severe depression. In a similar study conducted with healthcare workers in 2020, it was observed that 13.0% of the participants had severe anxiety (15). The fact that the anxiety levels are relatively lower in our study may be due to the study being conducted in the last quarter of the COVID-19 pandemic, the success of the preventive measures and vaccination programs against the pandemic, and the increased knowledge and awareness levels of healthcare workers for fighting the infection. In a study conducted with medical students in Iran, 4.6% of the students had severe anxiety and 2.8% had

severe depression, and in the same study, it was observed that 38.1% of the students had anxiety (16). In a study conducted in Istanbul in the middle of 2020, similar results were reported with our study, and it was found that 14.0% of healthcare professionals had severe anxiety and 3.5% had severe depression (12).

In our study, it was determined that the level of anxiety was higher in women and secondary school graduate health workers (Table 4). In a similar study conducted with healthcare professionals during the pandemic period in our country, it was stated that being female and single was significant in terms of anxiety development (12). The fact that healthcare professionals working as nurses during the pandemic period in healthcare institutions, especially in intensive care units and inpatient pandemic services, more commonly encountered the need of applying one-on-one treatment to infected patients and the necessity of action in cases requiring intervention, supports the fact

that the development of anxiety is more common in female healthcare professionals.

In this study, it was determined that the presence of anxiety was higher in those who stated that they had a chronic disease (Table 4). Since the mortality and morbidity of COVID-19 infection are quite high, especially in individuals with advanced age and chronic disease, and the course of the disease is more complicated in these individuals, it is an expected result that healthcare workers with chronic diseases are more likely to have higher anxiety levels. It was determined that the presence of anxiety and depression was higher in the participants who stated that they had sleep problems. It was also determined that the presence of depression was higher in night and shift workers (Table 4). Shift work causes physiological and psychological deterioration by disrupting the circadian rhythm of the health of individuals. Shift work can be the cause of many problems such as sleep disorders, fatigue, stress, gastrointestinal system-related problems, and cardiovascular problems (17). The fact that depressive mood disorders are higher in health workers who do shift work under intense stress such as during the pandemic period seems compatible with the literature.

In this study, it was found that the levels of emotional exhaustion and depersonalization, which are the sub-headings of the Maslach burnout scale, were higher in physicians compared to other health workers (Table 5). In recent years, we see an increase in burnout, especially in physicians, due to reasons such as physical violence, intense work pace, and post-traumatic stress caused by the COVID-19 pandemic. Unlike our study, in a

Conclusions

In this study, the frequency of depression was found to be 24.0% in healthcare workers and the frequency of anxiety was 29.6%. It was observed that 10.2% of the participants had severe

study conducted in the first quarter of the pandemic in our country, the scores of emotional exhaustion and depersonalization sub-headings of the Maslach burnout scale were found to be higher in nurses (18). Due to the fact that this study was conducted in the first quarter of the pandemic, the nurses, who are in close contact with patients because of applying treatment, are expected to have higher burnout due to the stress created by many unknowns such as the structure of the virus, transmission routes, methods of protection from infection, mortality and morbidity of the disease in the world and in our country. In this study, which was conducted in the middle of 2020, it was determined that the emotional exhaustion level of the Maslach burnout scale sub-headings was lower in healthcare workers who did not have night shifts (18). Concurrent with the a for mentioned study, in our study, emotional exhaustion and depersonalization levels, which are sub-headings of Maslach burnout scale, were found to be higher in those who had night shifts and shift workers.

The strengths of this study are that it provides information about the depression, anxiety, and burnout levels of health workers in the last quarter of the pandemic and that it can be a guide for the preventive measures that will be taken against the psychosocial risk factors they face. The limitations of this study are that the reliability of the data collection depends on the answers of the participants because the face-to-face survey method was used and that the number of health professionals who agreed to participate in the study was less than expected.

anxiety and 2.6% had severe depression. It was found that the anxiety levels were higher in women and in secondary school graduate healthcare workers, the presence of anxiety and depression was more common in

in the participants who stated that they had sleep problems. In addition, it was determined that the presence of depression was more common in night and shift workers.

Compared to other health workers, it was found that the emotional exhaustion and

depersonalization levels of the Maslach burnout scale sub-headings were higher in physicians. These results are very important in terms of identifying psychosocial risk factors in health workers and forenlightening to improve working conditions.

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