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ARAŞTIRMA YAZISI / RESEARCH ARTICLE

COVİD-19 PANDEMİSİNDE BİR ÜNİVERSİTE HASTANESİNDE DOKTOR VE HEMŞİRELERDE TÜKENMİŞLİK SENDROMU

BURNOUT SYNDROME AMONG DOCTORS AND NURSES DURING THE COVID-19 PANDEMIC IN A UNIVERSITY HOSPITAL

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ÖZET

AMAÇ: Tükenmişlik sendromu sağlık çalışanlarında önemli bir sorundur. Covid-19 pandemisinde sağlık çalışanları emsalsiz bir çaba ile mücadele etmişlerdir. Bu çalışmanın amacı, Covid-19 pandemisinde Afyonkarahisar Sağlık Bilimleri Üniversitesinde çalışan sağlık çalışanlarında mesleki tükenmişlik düzeylerini araştırmaktır.

GEREÇ VE YÖNTEM: Bu çalışma 01 Şubat - 01 Mart 2021 tarihleri arasında Afyonkarahisar Sağlık Bilimleri Üniversitesi'nde gerçekleştirilmiştir. Örnek hesaplamada G* power paket programı kullanılmıştır. Katılımcıların demografik verileri ve iş hayatına ilişkin 20 parametreden oluşan anket formu kullanılmıştır. Tükenmişlik ölçeği olarak Maslach Tükenmişlik Envanteri kullanılmıştır.

BULGULAR: Bu çalışmaya toplam 312 sağlık çalışanı katılmıştır. Katılımcıların 139'u erkek (%44.6), 173'ü kadın (%55.4) idi. Katılımcıların yaş ortalaması 30.7± 7.28 idi. Katılımcıların 138'i doktor (%44.2), 174'ü hemşire (%55.8) idi. Katılımcıların 110'u Covid servis veya Covid yoğun bakım ünitesinde (%35.3), 202'si (%64.7) diğer bölümlerde çalışıyordu. Ortalama duygusal tükenme puanı 19.21 ± 7.28, duyarsızlaşma puanı 7.31 ± 7.19 ve kişisel başarı puanı 20.05 ± 3.88 idi. Bu sonuçlar, sağlık çalışanlarının duygusal tükenme ve kişisel başarı alt boyutlarına göre yüksek düzeyde tükenmişlik, duyarsızlaşma alt boyutuna göre ise orta düzeyde tükenmişlik yaşadıklarını göstermektedir.

SONUÇ: Bu çalışmanın sonuçları, gelecekte önleme protokollerinin oluşturulması ve sağlık profesyonellerinin pandemi karşısında eğitilmesi için çok değerlidir. Çalışmamızın sonuçlarına göre doğrudan Covid-19 hastaları ile çalışan risk gruplarının yakından takip edilmesi ve gerektiğinde psikolojik destek verilmesi önemlidir. Ayrıca sağlık çalışanlarında iş doyumunun artırılması ve tükenmişliğin azaltılması için çalışma koşullarında düzenlemelerin yapılması oldukça önemlidir.

ANAHTAR KELİMELER: Pandemi, Covid-19, Tükenmişlik, Sağlık çalışanları

ABSTRACT

OBJECTIVE: Burnout syndrome is an important problem among healthcare workers. During the Covid-19 pandemic, healthcare professionals have struggled with an unprecedented effort. The aim of this study is to investigate occupational burnout levels among healthcare professionals working at Afyonkarahisar Health Sciences University during the Covid-19 pandemic.

MATERIAL AND METHODS: This study was carried out at the Afyonkarahisar Health Sciences University between February 1st and March 1st, 2021. G* power package software was used in the sample calculation. A questionnaire form consisting of 20 parameters on demographic data and work life was used. Maslach Burnout Inventory was used as the burnout scale.

RESULTS: A total of 312 healthcare professionals participated in this study. 139 of the participants were men (44.6%) and 173 were women (55.4%). The mean age of the participants was 30.7± 7.28. 138 of the participants were doctors (44.2%) and 174 were nurses (55.8%). 110 of the participants were working in a covid ward or covid intensive care unit (ICU) (35.3%) and 202 were working in other departments (64.7%). The mean subscale scores were 19.21±7.28 for emotional exhaustion, 7.31±7.19 for depersonalization, and 20.05±3.88 for personal accomplishment. These results show that healthcare workers experience high levels of burnout according to the emotional exhaustion and personal accomplishment subscales and moderate burnout according to the depersonalization subscale.

CONCLUSIONS: The results of this study are very valuable for establishing future prevention protocols and educating healthcare professionals in the face of a pandemic. Based on our findings, we suggest closely monitoring risk groups that work directly with Covid-19 patients and providing psychological support when necessary. Also, making the necessary arrangements in working conditions is crucial to increase job satisfaction and reduce burnout in healthcare workers.

KEYWORDS: Pandemic, Covid-19, Burnout, Healthcare workers

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INTRODUCTION

The Covid-19 outbreak started in Wuhan and quickly expanded all over the world, turning into a pandemic. Healthcare professionals have been working very selflessly and under difficult conditions during this process. The pandemic has changed the lives and attitudes of healthcare professionals as well as all people (1). The pandemic has had some psychological effects on the general population, particularly on healthcare professionals (2, 3). Healthcare workers were exposed to the intimidation of infection, which was defined as fatal, causing a sense of threat and uncertainty (4). Healthcare workers have been struggling with this disease with unprecedented effort. Recent studies show that working under the pressure of COVID-19 has a remarkable effect on healthcare workers (5, 6). Burnout is defined as the disconnection of professionals from the original meaning and purpose of their profession, where they can no longer really care about the people they serve. It includes a person's psychological withdrawal from their job in response to excessive stress and dissatisfaction, especially in cases where the human factor has a key place in terms of quality of service. There are studies in the literature on burnout syndrome in healthcare workers, but only a few during the Covid pandemic (7 - 9). In this research, we intended to evaluate burnout syndrome in healthcare workers during the Covid pandemic at the Faculty of Medicine at Afyonkarahisar Health Sciences University.

MATERIALS AND METHODS

This study was conducted at the Afyonkarahisar Health Sciences University between February 1st and March 1st, 2021. All nurses and doctors who volunteered to participate in the study were included. Participants were grouped as those working in the covid ward or covid intensive care unit and those working in other departments.

Sample Size Calculation

There were 813 doctors and nurses at our hospital. 351 of them were doctors and 462 were nurses. The minimum sample size was calculated as 250, considering the effect size as medium (0.3), type I error rate= 0.05 and power = 95% using the G* power package software. According to this calculation, at least 107 doctors and 142 nurses should be included in the study.

Survey Form

A survey form consisting of 20 parameters on sociodemographic data and work life was used. Maslach Burnout Inventory is a 22-item 5-point Likert-type questionnaire containing the following subscales: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). Of the 22 items, 9 are for evaluating emotional exhaustion, 5 for depersonalization, and 8 for personal accomplishment. The values used to evaluate burnout levels for each subscale are given in **Table 1** (10).

Table1: Maslach Burnout Inventory subscale scores

Subscale	High	Medium	Low
EE	≥18	12-17	0-11
DP	≥10	6-9	0-5
PA	≥26	22-25	0-21

EE: Emotional Exhaustion DP: Depersonalization PA: Personal Accomplishment

A total burnout level cannot be obtained, as each factor is considered separately. High levels of emotional exhaustion and depersonalization and low levels of personal accomplishment are characteristic of burnout. Individuals suffering from burnout are expected to have high emotional exhaustion and depersonalization scores and low personal achievement scores. The score ranges are 0-36 for the emotional exhaustion subscale, 0-20 for the depersonalization subscale, and 0-32 for the personal accomplishment subscale. **Table 2** shows the assessment of burnout syndrome subscales.

Table 2: Burnout syndrome level assessment chart

Burnout Level	EE score	DP score	PA score
Low	Low	Low	High
Medium	Medium	Medium	Medium
High	High	High	Low

EE: Emotional Exhaustion DP: Depersonalization PA: Personal Accomplishment

Ethical Committee

This study was approved by the Afyonkarahisar Health Sciences Clinical Research Ethics Committee (dated 08.01.2021, numbered 2021/32). The study complied with the principles of the Declaration of Helsinki.

Statistical Analysis

During the evaluation of this study, frequency, percentage, and arithmetic mean and standard deviation were used as descriptive statistics. Categorical data were analyzed using Pearson's chi-squared test. Quantitative data were analyzed using the Mann-Whitney test. Statistical significance was set at $p<0.05$. Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) 22.0 package software.

RESULTS

A total of 312 healthcare professionals participated in this study. 139 of the participants were men (44.6%) and 173 were women (55.4%). The mean age of the participants was 30.7± 7.28. 138 of the participants were doctors (44.2%) and 174 were nurses (55.8%). 64 of the doctors were specialists and 74 were residents. 110 were working in a covid ward or covid intensive care unit (ICU) (35.3%) and 202 were working in other departments (64.7%). Chronic disease was present in 63 (20.2%) of all participants. **Table 3** summarizes the sociodemographic characteristics and work life information of the healthcare workers.

Table 3: Sociodemographic characteristics and work life questionnaire

Sociodemographic characteristics and work life questionnaire	n (%)
Professional category	
Specialist	64 (20,5%)
Resident	74 (23,7%)
Nurse	174 (55,8%)
Department	
Covid ward or intensive care unit	110 (35,3%)
Other departments	202 (64,7%)
Sex	
Female	173 (55,4%)
Male	139 (44,6%)
Marital Status	
Single	150 (48,1%)
Married	162 (51,9%)
Chronic disease	
No	245 (78,5%)
Yes	67 (21,5%)
Child	
No	181 (58%)
Yes	131 (42%)
Working time	
1-5 years	166 (53,2%)
6-10 years	59 (18,9%)
>10 years	87 (27,9%)
Working shifts	
Day	80 (25,6%)
Night	33 (10,6%)
Day+ Night	199 (63,8%)
Monthly working time	
<160 hours	57 (18,3%)
160-184 hours	141 (45,2%)
185-217 hours	69 (22,1%)
>217 hours	45 (14,4%)
Reason for choosing your profession	
Voluntarily	180 (57,7%)
By family request	49 (15,7%)
For job opportunities	69 (22,1%)
The influence of the society	14 (4,5%)
Is your monthly income sufficient for living?	
No	85 (27,2%)
Yes/partially	167 (53,5%)
Yes/totally	60 (19,2%)
Are you considering changing your profession?	
I will change it if conditions allow	99 (31,7%)
At the first opportunity	43 (13,8%)
I will carry on as long as I can	109 (34,9%)
I will continue until retirement	61 (19,6%)
Need for psychiatric help before	
Yes/Received	67 (21,5%)
Yes/Have not received	38 (12,2%)
No	207 (66,3%)
Satisfaction with work-life	
Yes	64 (20,5)
Partially	180 (57,7%)
No	68 (21,8%)
Do you have difficulties in obtaining medical supplies?	
Always	68 (21,8%)
Rarely	156 (50%)
Mostly	50 (16%)
No	38 (12,2%)

The mean subscale scores were 19.21±7.28 for emotional exhaustion, 7.31±7.19 for depersonalization, and 20.05±3.88 for personal accomplishment. These results show that healthcare workers experience high levels of burnout according to the emotional exhaustion and personal accomplishment subscales and moderate burnout according to the depersonalization subscale.

Considering professions, emotional exhaustion was found to be significantly higher in nurses (p=0.030). Emotional exhaustion was significantly higher in the covid ward or covid ICU workers (p=0.023). There was no significant correlation between other sociodemographic parameters and emotional exhaustion, depersonalization, and personal accomplishment. **Table 4** summarizes participant's level of burnout by sociodemographic characteristics.

Table 4: Participant's level of burnout by sociodemographic characteristics

Sociodemographic characteristics	Emotional Exhaustion				Depersonalization				Personal Accomplishment			
	Low	Medium	High	P	Low	Medium	High	P	Low	Medium	High	P
Professional category												
Specialist	15	10	39	0.030	22	22	20	0.120	37	20	7	0.030
Resident	6	16	52		15	30	29		58	14	2	
Nurse	24	50	100		61	68	45		103	50	21	
Department												
Covid ward or ICU	10	11	89	0.023	28	40	42	0.056	72	26	12	0.582
Other departments	61	89	52		70	80	52		126	58	18	
Sex												
Female	22	35	116	0.059	54	63	56	0.584	109	50	14	0.469
Male	23	41	75		44	57	38		89	34	16	
Marital Status												
Single	24	43	83	0.115	53	48	49	0.075	94	38	18	0.366
Married	21	33	108		45	72	45		104	46	12	
Child												
No	27	44	110	0.957	58	59	64	0.520	119	41	21	0.080
Yes	18	32	81		40	41	50		79	43	9	
Residential												
With family	23	39	125	0.023	52	78	57	0.392	120	54	13	0.275
Alone	22	31	60		43	37	33		69	28	16	
With friends	0	6	6		3	5	4		9	2	1	

Table 5 illustrates participants' level of burnout by work life. Emotional exhaustion was higher in those working during day and night shifts ($p<0.0001$). Significant correlations were found between monthly working time and emotional exhaustion and depersonalization (p=0.004, p=0.043). Emotional exhaustion was lower in those who chose their profession willingly (p=0.047.) Emotional exhaustion was higher in those who thought that their monthly income was not enough to make a living (p=0.002).

Emotional exhaustion and depersonalization were significantly higher in those considering changing their profession ($p<0.0001$). Personal accomplishment was lower in those considering changing their profession (p=0.048). Emo-

tional exhaustion and depersonalization were significantly higher and personal accomplishment was significantly lower in those who were not satisfied with their work life (p<0.0001, p<0.0001, p<0.0001). Emotional exhaustion and depersonalization were significantly higher in those having difficulty obtaining medical supplies (p<0.0001, p<0.0001). There was no significant correlation between other demographic or work life parameters and emotional exhaustion, depersonalization, and personal accomplishment.

Table 5: Participant's level of burnout by work life

Work life characteristics	Emotional Exhaustion				Depersonalization				Personal Accomplishment			
	Low	Medium	High	P	Low	Medium	High	P	Low	Medium	High	P
Working time												
1-5 years	22	39	105	0.437	49	61	56	0.230	112	38	16	0.539
6-10 years	7	19	33		15	28	16		35	18	6	
>10 years	16	18	53		34	31	22		51	28	8	
Working shifts												
Day	21	22	37	<0.0001	29	30	21	0.067	47	26	7	0.458
Night	0	4	29		4	13	16		22	10	1	
Day+ Night	24	50	125		65	77	57		129	48	22	
Monthly working time												
<160 hours	9	22	26	0.004	18	23	16	0.043	34	17	6	0.330
160-184 hours	27	33	81		57	44	40		82	44	15	
185-217 hours	6	15	48		14	31	24		52	13	4	
>217 hours	3	6	36		9	22	14		30	10	5	
Reason for choosing your profession												
Voluntarily	35	46	99	0.047	66	68	46	0.180	100	59	21	0.014
By family request	6	12	31		13	18	18		32	12	5	
For job opportunities	4	14	51		17	26	26		56	9	4	
The influence of the society	0	4	10		2	8	4		10	4	0	
Is your monthly income sufficient for living?												
No	7	17	61	0.002	21	39	25	0.450	57	21	7	0.344
Yes/ partially	21	41	105		55	60	52		107	41	19	
Yes/ totally	17	18	25		22	21	17		34	22	4	
Are you considering changing your profession?												
I will change it if conditions allow	5	22	72	<0.0001	25	38	36	<0.0001	71	19	9	0.048
At the first opportunity	2	6	35		4	15	24		26	15	2	
I will carry on as long as I can	17	28	64		38	47	24		72	26	11	
I will continue until retirement	21	20	20		31	20	10		29	24	8	
Satisfaction with work-life												
Yes	31	22	11	<0.0001	40	19	5	<0.0001	21	26	17	<0.0001
Partially	13	48	119		51	75	54		125	45	10	
No	1	6	61		7	26	35		52	13	3	
Do you have difficulties in obtaining medical supplies?												
Always	3	20	45	<0.0001	14	33	21	<0.0001	46	18	4	0.001
Rarely	27	47	82		54	59	43		104	36	16	
Mostly	0	3	47		7	23	20		36	12	2	
No	15	6	17		23	5	10		12	18	8	

DISCUSSION

Burnout syndrome is an issue that should be emphasized because it affects the work performance of 25-60% of healthcare workers, causes a decrease in employee participation, and deteriorates the quality of the service provided (11, 12). The purpose of this study is to disclose how the Covid-19 pandemic affects healthcare workers using the Maslach burnout inventory.

Frontline healthcare workers face challenges due to increased workload, busy work schedule, and increased likelihood of exposure to positive cases. Mental health effects can also be seen in healthcare professionals who actively care for COVID-19 patients. Studies interested in mental health during the COVID-19 pandemic show that healthcare workers deal with strains such as risk of infection, family distress, and moral quandaries (13, 14). Personal protection, the safety of loved ones, the death of one's own colleagues, working overtime, worrying about household needs, and ethical concerns about sharing ventilators between patients can have a negative impact on the psychological state of healthcare workers. A study carried out in China reported that a significant ratio of healthcare workers directly involved in diagnosis, treatment, or nursing care of patients with suspected or confirmed Covid-19, experienced symptoms of depression, anxiety, insomnia, and distress (13). Another study in Italy notified that the perception of risk and anxiety levels of healthcare workers were higher than the general population during the COVID-19 pandemic (15). Naushad et al. reported that healthcare workers, especially those working in emergency departments, ICUs, and infectious disease services have a higher risk of developing adverse psychiatric effects (16). Study by Ünal et al. reported a high frequency of anxiety because of uncertainty, anger, and hopelessness by the community's neglect of precautions, striving to create a more hygienic environment at home, being adversely impacted by news of colleagues getting infected (17). In our study, in accordance with the literature, emotional exhaustion and depersonalization levels were found high and personal achievement levels were low in those who worked directly with COVID-19 patients.

One study conducted in Sweden in 2010 showed that the rate of burnout in work life is generally higher in women than in men (18). Lai et al. stated that being a woman was associated with higher anxiety, depression, and distress (13). Unlike many burnout syndrome studies conducted before the pandemic, we found no correlation between burnout syndrome and sex or age (19 - 21). These findings suggest that the effect of the pandemic on mental health is a gender-neutral situation.

In our current study, we found that emotional exhaustion was significantly higher in nurses. Regarding the other studies carried out in this area, our findings are compatible with the literature. In a study conducted during the pande-

mic, desperation and anxiety levels were found to be higher in nurses than doctors (22). Zhang et al. also reported that nurses felt more anxious and nervous than other professionals (23). In a study conducted by Şahin and Kulakaç, the anxiety scores of nurses were found significantly higher (24). Our finding in this regard is consistent with the literature; this may be because of the working conditions of nurses were affected more than other healthcare professionals during the pandemic and nurses had more physical contact with patients than doctors, especially in inpatient services. Besides, the physical fatigue, stress, and negative mental state experienced by nurses due to the intense tempo during the pandemic may reduce their job satisfaction, causing burnout.

Studies have shown that emotional exhaustion and depersonalization levels are much less in healthcare workers with children than those without children (25, 26). Arpacıoğlu et al. stated that that emotional exhaustion and depersonalization levels are significantly higher in healthcare workers without children (27). In our study, unlike these, we found no correlation between having a child and emotional exhaustion, depersonalization, or personal accomplishment.

In a study from China, nurses who worked longer in quarantine areas tended to show higher burnout (23). Studies conducted before the Covid-19 and during the Covid-19 pandemic both have shown that longer working hours have negative effects on burnout (28, 29). Consistent with the literature, here, there was a significant correlation between monthly working time and emotional exhaustion and depersonalization.

The strengths of the study were that the number of participants was calculated using the G* power package software, the scales were filled in face-to-face interviews, and all the participants completed the forms.

The cross-sectional design and the use of self-report scales are the limitations of this study. The other missing part of our study was that burnout syndrome was not evaluated in our hospital before covid pandemic, so a comparison between before and after covid could not be made.

The findings obtained here are valuable for establishing future prevention protocols and educating healthcare workers in the face of a pandemic. Based on our results, closely monitoring risk groups that work directly with Covid-19 patients and providing psychological support when necessary are very important. Also, arrangements should be made in the healthcare workers' working conditions to increase their job satisfaction and reduce their burnout.

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