

# Examining the burnout levels of healthcare employees and related factors during the COVID-19 pandemic: A cross-sectional study

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## Abstract.

**BACKGROUND:** The high prevalence, severe contagious nature, and associated morbidity and mortality rates of COVID-19 increased the demand for healthcare and social care services worldwide. No doubt, the COVID-19 pandemic affected frontline healthcare employees the most.

**OBJECTIVE:** The purpose of the present study was to examine the burnout levels of healthcare employees and related factors during the COVID-19 pandemic in Turkey.

**METHODS:** The descriptive, cross-sectional study was completed with 478 healthcare professionals. The study's sampling included all healthcare professionals who were actively working in Turkey during the COVID-19 pandemic and agreed to participate in the study. The study data were collected through the internet (online) between 10.05.2021 and 10.08.2021. The Healthcare Staff Information Form and Maslach Burnout Inventory were used to collect the study data.

**RESULTS:** Emotional burnout ( $p < 0.001$ ) and desensitization ( $p = 0.007$ ) scores were higher in those who lived separately from people they normally lived with. Emotional burnout and desensitization scores of the nurses were significantly higher than those of doctors and other healthcare professionals ( $p < 0.001$ ).

**CONCLUSION:** It was determined that healthcare professionals in Turkey experienced moderate levels of burnout in terms of emotional burnout and desensitization, and high levels of burnout in terms of personal achievement. It is recommended to improve working conditions, monitor employees in high-risk units more closely, and provide psychological support to prevent or reduce the burnout of healthcare employees during the pandemic period.

Keywords: Coronavirus, emotional stress, health workers

## 1. Introduction

The coronavirus disease 2019 (COVID-19) emerged in the last month of 2019 in the city of Wuhan, Hubei province of China. The rapid spread of

COVID-19 and its effects on the entire world caused the World Health Organization (WHO) to declare it a pandemic on March 11, 2020. The first case detected in Turkey was announced by the Ministry of Health of T.R. on March 11, 2020 [1, 2]. The increased morbidity and mortality rates because of the high prevalence and contagiousness of this novel virus, COVID-19, increased the demand for healthcare and social care services worldwide [3].

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No doubt, the COVID-19 pandemic affected front-line healthcare employees the most [4]. Healthcare employees have been working under heavy workload conditions worldwide since the beginning of the pandemic [5]. Extended working hours, limited resources, and changes in the work-life balance of healthcare professionals might have caused them to experience more stress than others in the community because they worked in the same environment with people who are likely to be infected or carriers [5]. Also, all kinds of words and actions that devalue the efforts of healthcare employees who put their lives on the line when performing their duties that require resilience can lead to burnout [1, 4, 5].

Burnout is an occupational health problem involving emotional and physical burnout [6]. Burnout is defined as the syndrome of emotional burnout (EB), desensitization (D), and decreased professional achievement (PA) that appear among various people-oriented professions, including healthcare professionals [7]. Emotional burnout describes the depletion of emotional resources because of the work performed by the person, the feelings of emotional overload, and burnout. Desensitization describes a person's insensitive and indifferent response to those they provide care for or serve. Personal success, on the other hand, defines the feelings of competence and success in the work performed with people [8].

Studies reported that some factors determine the frequency of burnout of health care employees. In general, these factors are divided into two groups: Personal (demographics) and environmental (organizational and work) factors. Several studies have found that organizational factors and work features were more highly correlated with burnout than personal factors. Some demographic characteristics, such as age, gender and marital status were found to be related to burnout in several studies [9–11].

In studies that were conducted before the pandemic, it was reported that the burnout levels of healthcare employees were high in our country and the world [6, 12]. Further studies are required to determine that the burden on healthcare professionals increases when factors such as the unique risk of rapid transmission of the pandemic, illness anxiety, and increased workload are added to these high rates, and to better understand the effects of such factors on burnout levels [4].

In the present study, the purpose was to examine the burnout levels of healthcare employees and related factors during the COVID-19 pandemic in Turkey.

## 2. Materials and methods

### 2.1. Study design and participants

The study had a cross-sectional design and was conducted between 10.05.2021 and 10.08.2021. The study population consisted of all healthcare professionals actively working in Turkey during the COVID-19 pandemic. The sampling included all healthcare professionals who were actively working in Turkey during the COVID-19 pandemic and agreed to participate in the study. The sampling method of unknown universe was used in the study. Sampling calculation in the Epi Info 7.2.5.0 statistics package program, the minimum sample size was calculated as 384 ( $p=0.50$ ,  $\alpha=0.05$ ). The study data were collected through the internet (online) with the participation of 482 healthcare employees because of the pandemic measures. A total of 4 people who did not meet the inclusion criteria were excluded from the study, and the study was completed with 478 participants.

### 2.2. Ethical approval

Written permissions to conduct the study were obtained from the Ethics Committee of the Institute of Healthcare Sciences of Kırklareli University (19.04.2021/PR0323R0/E-69456409-199-9967 number) and the COVID-19 Scientific Study Evaluation Commission of the Ministry of Health (05.04.2021). Permission to use the scale was obtained from the author through e-mail. Before the online questionnaire application, the consent of the healthcare employees to participate in the study was obtained.

### 2.3. Data collection

The study data were collected by sharing online over the social media accounts with a questionnaire that was prepared in Google Forms. After the healthcare employees were informed by the researchers, it was shared over the social media and WhatsApp groups of the healthcare employees. The answers of the healthcare staff participating in the study were displayed on Google forms by paying attention to confidentiality only by the e-mails defined on behalf of the researchers.

## 2.4. Variables and instruments

Two data collection tools, the Healthcare Employee Information Form and the Maslach Burnout Scale, were used to examine the sociodemographic characteristics, working characteristics, attitudes, and thoughts of healthcare employees about COVID-19 and to evaluate the dependent variable (i.e. burnout).

### 2.4.1. Healthcare professional information form

The Healthcare Employee Information Form, which was prepared by the researcher in line with the literature data [1, 5, 13], consisted of 19 questions on the age, gender, marital status, presence of children, with whom the employee lived, educational status, profession, the institution worked for, the unit worked in, how many years worked in the field of health, working conditions during the pandemic period, and the concern of infecting the people with whom the employee shared the same house.

### 2.4.2. Maslach Burnout Inventory (MBI)

The inventory was developed by Maslach and Jackson [8]. Ergin conducted the validity study of the scale for Turkey [11]. MBI is a 22-item 5-point Likert-type scale developed to measure burnout levels, and consists of 3 sub-dimensions: Emotional burnout (EB), desensitization (D), and personal achievement (PA). Nine items (1, 2, 3, 6, 8, 13, 14, 16, 20) are used for emotional burnout; 5 items (5, 10, 11, 15, 22) for desensitization; and 8 items (4, 7, 9, 12, 18, 19, 21) for personal success to calculate the scores. Scoring is made as “Never = 0” at the lowest and “Always = 4” at the highest. Scoring must be done separately for each sub-dimension. Scores between 0–36 are obtained for the emotional burnout sub-dimension, 0–20 for the desensitization sub-dimension, and 0–32 for the personal achievement sub-dimension. The items in the emotional burnout and desensitization sub-dimensions must be scored in the same way, and the items in the personal achievement sub-dimension must be scored and added later. High scores in emotional burnout and desensitization sub-dimensions and low scores in the personal achievement sub-dimension indicate high burnout [14].

## 2.5. Statistical analysis

The Cronbach’s Alpha Coefficient was used to evaluate the reliability (i.e. internal consistency) of the MBI. The conformity of the scale scores to the

normal distribution was examined with the Shapiro Wilk Test. Mean  $\pm$  standard deviation was used as the descriptive statistical value for the scale scores, and numbers and % were used as the descriptive statistical values for the categorical data. When the distribution of the data was evaluated, the Mann-Whitney U Test was used to compare the MBI sub-dimension scores of the variables consisting of two categories.

The Kruskal Wallis Test was used to compare the MBI sub-dimension scores of the variables that consisted of three or more categories by considering the distribution of the data. Bonferroni-Corrected Dunn’s Test was used for multiple comparisons when significant differences were detected.

The Spearman correlation analysis was used to examine the relationships between MBI sub-dimension scores, age, and working times in the healthcare sector. The  $p < 0.05$  value was considered significant as the cut-off value of statistical significance.

## 3. Results

Cronbach’s alpha coefficients were calculated to evaluate the reliability (i.e. internal consistency) of the MBI. The Cronbach Alpha coefficients were found to be 0.933 for the emotional burnout sub-dimension, 0.780 for the personal achievement sub-dimension, and 0.779 for the desensitization sub-dimension, and the answers to the scale were evaluated as reliable.

The mean age of the 478 participants who were included in the study was  $35.6 \pm 11.9$  (min.21-max.69), and 66.5% of them were women. The mean working time of the participants in the healthcare sector was found to be  $14.2 \pm 11.2$  years and ranged from 1 to 43 years. The distribution of socio-demographic characteristics of the participants in the study is shown in Table 1.

The mean score of the sub-dimensions of MBI is shown in Table 2. The mean score of the emotional burnout sub-dimension of the MBI was  $18.9 \pm 9.0$ , the mean score of the personal achievement sub-dimension was  $21.8 \pm 4.8$ , and the mean of the desensitization sub-dimension was  $6.4 \pm 4.2$  (Table 2). It was found that the sampling had a moderate level of emotional burnout and desensitization and a low level of personal achievement. These results show that the sampling experienced moderate burnout in terms of emotional burnout and desensiti-

Table 1  
The distribution of socio-demographic characteristics of the participants in the study

		n	%
Gender	Woman	318	66.5
	Man	160	33.5
Marital status	Married	263	55.0
	Single	215	45.0
Do you have children?	Yes	243	50.8
	No	235	49.2
With whom does she/he live?	I live alone	96	20.1
	With my parents and/or siblings	98	20.5
	With my spouse and/or children	266	55.6
	With my friends	18	3.8
Have you lived separately from the people you normally live with during the pandemic process?	I live alone	43	9.0
	Yes	127	26.6
Educational status	No	308	64.4
	High school	45	9.4
	Associate degree	56	11.7
	Undergraduate education	239	50.0
Profession	Postgraduate education	138	28.9
	Nurse	221	46.2
	Doctor	111	23.2
Did you choose your profession voluntarily?	Other healthcare staff	146	30.5
	Yes	398	83.3
	No	80	16.7
Institution	Public institutions	304	63.6
	Private institutions	174	36.4
Unit/clinic/ward where you work	Intensive care units	42	8.8
	COVID-19 intensive care unit	22	4.6
	COVID-19 service	38	7.9
	Emergency services / polyclinics	102	21.3
	Non-COVID-19 services/units	215	45.0
	Other	51	10.7
Working order	Filiation unit	8	1.7
	Daytime work	191	40.0
	Shift	67	14.0
	Day+shift system	220	46.0
Are you satisfied with your working conditions?	Yes	210	43.9
	No	268	56.1
Salary based on working conditions	Adequate	93	19.5
	Inadequate	385	80.5
Do you think that the physical conditions such as equipment and staff in your hospital are adequate during the COVID-19 pandemic?	Yes, adequate	178	37.2
	No, not adequate	263	55.0
	I have no idea	37	7.7
How professionally competent do you feel in the tasks assigned to work with COVID-19 patients?	Very inadequate	11	2.3
	Inadequate	56	11.7
	Moderately adequate	135	28.2
	Adequate	141	29.5
	Completely adequate	44	9.2
To what extent do you worry about the possibility of infecting people with whom you share the same house (family, friends, etc.) when returning home at the end of the working day?	I do not work with COVID-19 patients	91	19.0
	Very little	28	5.9
	Little	35	7.3
	Moderate	93	19.5
	A lot	128	26.8
Have you considered quitting your job during the COVID-19 pandemic?	Too much	194	40.6
	Yes	108	22.6
	No	312	65.3
	I am indecisive	58	12.1

zation sub-dimensions, and high levels of burnout in the personal achievement sub-dimension.

Relationships between MBI sub-dimension scores and age and working time in the health sector is shown in Table 3. A negative and significant correlation was

Table 2  
The mean score of the sub-dimensions of the Maslach Burnout Inventory

	Emotional burnout	Personal achievement	Desensitization
Mean $\pm$ Standard deviation	18,9 $\pm$ 9,0	21,8 $\pm$ 4,8	6,4 $\pm$ 4,2

Table 3  
Relationships between Maslach Burnout Inventory sub-dimension scores and age and working time in the health sector

		Emotional burnout	Personal achievement	Desensitization
Age	r	-0.211	0.157	-0.248
	p*	<0.001	0.001	<0.001
Working time in the healthcare sector (year)	r	-0.244	0.143	-0.283
	p*	<0.001	0.004	<0.001

\*Spearman Correlation Analysis.

detected between the age and working times in the healthcare sector and emotional burnout and desensitization scores ( $p < 0.001$ ). In this respect, when age and working time increased, emotional burnout and desensitization scores decreased. A positive and significant correlation was detected between the age, working times in the healthcare sector, and personal achievement scores ( $p < 0.01$ ); and, as age and working times increased, so did the personal achievement scores (Table 3).

The comparison of the sub-dimensions of the MBI according to various socio-demographic factors is given in Table 4. Emotional burnout ( $p < 0.001$ ) and desensitization ( $p = 0.005$ ) scores of women were higher than those of men, and personal achievement ( $p < 0.001$ ) scores were lower. Emotional burnout ( $p < 0.012$ ) and desensitization ( $p = 0.048$ ) scores of married people were lower than those of singles. Although the personal achievement scores of married people were higher than singles, no significant differences were detected ( $p = 0.083$ ). Emotional burnout ( $p = 0.007$ ) and desensitization ( $p = 0.002$ ) scores of those who had children were lower than those who had no children, and personal achievement scores ( $p = 0.014$ ) were higher. No significant differences were detected in the sub-dimension scores of the MBI in terms of whom the participants lived with ( $p > 0.05$ ). Emotional burnout ( $p < 0.001$ ) and desensitization ( $p = 0.007$ ) scores were found to be high in those who lived separately from people they normally lived with during the pandemic, but there were no differences in personal achievement scores ( $p = 0.407$ ). As a result of *post hoc* evaluations using the Dunn-Bonferroni test, emotional burnout scores of those who had undergraduate education were found to be significantly higher than those who had high school and post-graduate groups ( $p < 0.001$ ). Desensitization

scores of those who had undergraduate education levels were found to be significantly higher than those of the post-graduate and associate degree groups ( $p = 0.005$ ). Personal achievement scores of those who had post-graduate education were found to be significantly higher than those with associate degrees and undergraduate degrees ( $p = 0.001$ ). Emotional burnout and desensitization scores of nurses were found to be significantly higher than doctors and other healthcare staff ( $p < 0.001$ ), and personal achievement scores of nurses were found to be significantly lower than doctors ( $p = 0.003$ ). Emotional burnout and desensitization scores of those who chose their profession voluntarily were found to be low, and personal achievement scores were high ( $p < 0.001$ ).

The comparison of the sub-dimensions of the MBI according to work characteristics is given in Table 5. Emotional burnout ( $p = 0.011$ ) and desensitization ( $p = 0.001$ ) scores of those who worked in public institutions were higher than those who worked in private institutions, and personal achievement scores ( $p < 0.001$ ) were lower. No significant differences were detected in the sub-dimension scores of the MBI in terms of the unit/clinic/ward worked at ( $p > 0.05$ ). As a result of *post hoc* evaluations using the Dunn-Bonferroni test, emotional burnout and desensitization scores of the daytime employees were found to be lower than those who worked on shift and day+shift system ( $p < 0.001$ ). The personal achievement score of those who worked during the day was found to be higher than those who worked in the shift and day+shift system ( $p = 0.005$ ). Those who were satisfied with their working conditions had low emotional burnout and desensitization scores, and high personal achievement scores ( $p < 0.001$ ). The emotional burnout and desensitization scores of those who found their salary to be adequate according to the

Table 4  
The comparison of the sub-dimensions of the Maslach Burnout Inventory according to various socio-demographic factors

		n	Emotional burnout	Personal achievement	Desensitization
Gender	Woman	318	20.4 ± 8.7	21.4 ± 4.5	6.6 ± 4.3
	Man	160	15.3 ± 8.1	23.0 ± 4.8	5.4 ± 3.9
			<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>0.005</b>
Marital status	Married	263	17.8 ± 8.7	22.2 ± 4.8	5.9 ± 4.1
	Single	215	19.7 ± 8.8	21.5 ± 4.5	6.5 ± 4.3
			<b>0.012</b>	0.083	<b>0.048</b>
Do you have children?	Yes	243	17.7 ± 8.8	22.3 ± 4.8	5.6 ± 4
	No	235	19.7 ± 8.7	21.4 ± 4.5	6.7 ± 4.4
			<b>0.007</b>	<b>0.014</b>	<b>0.002</b>
With whom does she/he live?	I live alone	96	19.3 ± 8.4	21.6 ± 4.8	6.8 ± 4.4
	With my parents and/or siblings	98	20.1 ± 9.4	21.7 ± 4.6	6.3 ± 4.4
	With my spouse and/or children	266	17.9 ± 8.7	22.2 ± 4.7	5.8 ± 4.1
	With my friends	18	20 ± 8.5	19.7 ± 4	7.3 ± 2.8
			0.089	0.081	0.055
Have you lived separately from the people you normally live with during the pandemic process?	Yes	127	21 ± 8.6	21.5 ± 4.8	6.9 ± 4.3
	No	308	17.6 ± 8.6	22 ± 4.6	5.8 ± 4.1
			<b>&lt;0.001</b>	0.407	<b>0.007</b>
Educational status	High school	45	16.7 ± 9.7	22.0 ± 5.3	5.9 ± 4.4
	Associate degree	56	19 ± 8.5	21.3 ± 4.6	5.4 ± 3.6
	Undergraduate education	239	20.1 ± 8.4	21.3 ± 4.7	6.7 ± 4.1
	Postgraduate education	138	16.7 ± 8.9	23.2 ± 4.2	5.6 ± 4.5
			<b>&lt;0.001</b>	<b>0.001</b>	<b>0.005</b>
Profession	Nurse	221	21.2 ± 8.7	21.3 ± 4.7	7.2 ± 4.5
	Doctor	111	15.6 ± 7.2	22.8 ± 4.4	5.3 ± 3.6
	Other healthcare staff	146	17.2 ± 9	22.2 ± 4.8	5.3 ± 3.8
			<b>&lt;0.001</b>	<b>0.003</b>	<b>&lt;0.001</b>
Did you choose your profession voluntarily?	Yes	398	17.6 ± 8.6	22.3 ± 4.5	5.8 ± 4.1
	No	80	24.2 ± 8	19.9 ± 5.3	8 ± 4
			<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>

\*Mann-Whitney U Test,\*\*Kruskal Wallis Test.

working conditions were found to be lower, and their personal achievement scores were high ( $p < 0.001$ ).

The comparison of the sub-dimensions of the MBI according to attitudes and thoughts about COVID-19 is shown in Table 6. As a result of *post hoc* evaluations using the Dunn-Bonferroni test, emotional burnout scores of those who answered “Yes, adequate” to the question “Do you think that the physical conditions such as equipment and staff in your hospital are adequate during the COVID-19 pandemic?” were found to be significantly lower than those who answered “No, not adequate” and “I have no idea” ( $p < 0.001$ ). Desensitization scores of those who answered “Yes, adequate” to the above-mentioned question were found to be significantly lower than those who answered “No, not adequate” ( $p < 0.001$ ). Personal achievement scores of those who answered “Yes, adequate” to this question were found to be significantly higher than those who said “No, not adequate” ( $p = 0.003$ ).

As a result of *post hoc* evaluations using the Dunn-Bonferroni test, the emotional burnout scores of those who said “Adequate” to the question “How

professionally competent do you feel in the tasks assigned to work with COVID-19 patients?” were found to be lower than those who said “very inadequate” and “inadequate”, and the scores of those who said “completely adequate” and “moderately adequate” were lower than those who said “very inadequate” ( $p < 0.001$ ). The desensitization scores of those who said “completely adequate” and “adequate” to this question were found to be significantly lower than those who said “inadequate” or “very inadequate” ( $p < 0.001$ ). The personal achievement scores of those who said “completely adequate” to this question were found to be significantly higher than those who said “very inadequate”, “inadequate”, “moderate” and “adequate” ( $p < 0.001$ ).

As a result of *post hoc* evaluations using the Dunn-Bonferroni test, emotional burnout scores of those who said “Little” to the question “To what extent do you worry about the possibility of infecting people with whom you share the same house (family, friends, etc.) when returning home at the end of the working day?” were found lower than those who said “Moderate”, “A lot”, and “Too much”, and the scores of

Table 5  
The comparison of the sub-dimensions of the Maslach Burnout Inventory according to work characteristics

		n	Emotional burnout	Personal achievement	Desensitization
Institution	Public institutions	304	19.5 ± 8.8	21.3 ± 4.8	6.7 ± 4.4
	Private institutions	174	17.2 ± 8.7	23 ± 4.2	5.2 ± 3.7
			<b>0.011</b>	<b>&lt;0.001</b>	<b>0.001</b>
Unit/clinic/ward where you work	Intensive care units	42	19.4 ± 5.5	21.8 ± 4.1	6.5 ± 3.7
	COVID-19 intensive care unit	22	18.5 ± 10.1	20.9 ± 5.7	6 ± 4.7
	COVID-19 service	38	20.8 ± 8.8	21.8 ± 5.1	6.2 ± 4.4
	Emergency services / polyclinics	102	17.5 ± 9	22.7 ± 4.5	6.5 ± 4.4
	Non-COVID-19 services/units	215	18.9 ± 9	21.6 ± 4.7	6.1 ± 4.1
	Other	51	18.2 ± 9.6	22.5 ± 4.9	5.9 ± 4.3
	Filiation unit	8	17.1 ± 4.5	20 ± 2.6	4.6 ± 2.8
			0.420	0.300	0.911
Working order	Daytime work	191	16.6 ± 8.8	22.7 ± 4.7	5.2 ± 3.8
	Shift	67	20.8 ± 8.7	21 ± 4.3	6.9 ± 4.9
	Day+shift system	220	19.8 ± 8.5	21.5 ± 4.7	6.8 ± 4.1
			<b>&lt;0.001</b>	<b>0.005</b>	<b>&lt;0.001</b>
Are you satisfied with your working conditions?	Yes	210	13.4 ± 7.3	22.7 ± 4.8	4.8 ± 3.8
	No	268	22.8 ± 7.6	21.2 ± 4.5	7.3 ± 4.2
			<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>
Salary based on working conditions	Adequate	93	10.6 ± 6.2	23.5 ± 5.1	3.6 ± 3.1
	Inadequate	385	20.6 ± 8.2	21.5 ± 4.5	6.8 ± 4.2
			<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>

\*Mann-Whitney U Test,\*\*Kruskal Wallis Test.

Table 6  
The comparison of the sub-dimensions of the Maslach Burnout Inventory according to attitudes and thoughts about COVID-19

		n	Emotional burnout	Personal achievement	Desensitization
Do you think that the physical conditions such as equipment and staff in your hospital are adequate during the COVID-19 pandemic?	Yes, adequate	178	14.4 ± 7.9	22.8 ± 4.7	4.7 ± 3.6
	No, not adequate	263	21.7 ± 8.2	21.4 ± 4.6	7.2 ± 4.3
	I have no idea	37	17.8 ± 8.3	21.2 ± 4.8	5.7 ± 4
			<b>&lt;0.001</b>	<b>0.003</b>	<b>&lt;0.001</b>
How professionally competent do you feel in the tasks assigned to work with COVID-19 patients?	Very inadequate	11	29.9 ± 3.9	18.3 ± 4	11.3 ± 5.3
	Inadequate	56	21.6 ± 8.7	21.3 ± 5.1	7.8 ± 4.1
	Moderately adequate	135	19.3 ± 8	21.3 ± 4.4	6.6 ± 4.2
	Adequate	141	17.1 ± 8.8	21.8 ± 4.7	5.4 ± 3.5
	Completely adequate	44	17.3 ± 10.9	25 ± 4.7	5.7 ± 5
			<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>
To what extent do you worry about the possibility of infecting people with whom you share the same house (family, friends, etc.) when returning home at the end of the working day?	Very little	28	13.6 ± 9.7	24.3 ± 5.5	5 ± 5.4
	Little	35	10.7 ± 6.2	22.1 ± 4.5	4.3 ± 4
	Moderate	93	16.2 ± 8	21.1 ± 5.3	5.9 ± 4
	A lot	128	18.3 ± 7.3	21.4 ± 3.9	5.9 ± 3.4
	Too much	194	22.3 ± 8.6	22.3 ± 4.6	7 ± 4.5
			<b>&lt;0.001</b>	<b>0.026</b>	<b>&lt;0.001</b>
Have you considered quitting your job during the COVID-19 pandemic?	Yes	108	25.4 ± 7.7	20.6 ± 5.2	8.6 ± 4.7
	No	312	15.8 ± 8	22.5 ± 4.5	5.1 ± 3.6
	I am indecisive	58	21.9 ± 6.9	21.3 ± 3.9	7.4 ± 4
			<b>&lt;0.001</b>	<b>0.001</b>	<b>&lt;0.001</b>

\*\* Kruskal Wallis Test.

those who said “Too much” were higher than those who said “Very little”, “Little”, “Moderate” and “Too much” ( $p < 0.001$ ). Desensitization scores of those who said “Too much” to this question were found to be higher than those who said “Very little” and “Little” ( $p < 0.001$ ). The personal achievement scores

of those who said “Very little” to this question were found to be significantly higher than those who said “Moderate” and “A lot” ( $p = 0.026$ ).

Emotional burnout and desensitization scores of those who answered no to the question “Have you considered quitting your job during the COVID-19

pandemic?" were found to be significantly lower than those who said "Yes" and "I am indecisive" ( $p < 0.001$ ). Those who answered "No" to this question had significantly higher personal achievement scores than those who said "Yes" ( $p = 0.001$ ).

#### 4. Discussion

The present study was conducted with the participation of 478 healthcare professionals to examine the burnout levels of healthcare staff and related factors during the COVID-19 pandemic in Turkey. It was found that emotional burnout and desensitization scores decreased as age increased. It was reported in some previous studies that emotional burnout and desensitization sub-dimension scores decrease as age increases [15–17]. However, there are also some other studies in the literature reporting that emotional burnout increases as age increases and desensitization decreases as age decreases [18, 19]. It can be argued that our findings are generally similar to the literature data. The time spent in the profession increases with the increasing age, which may be because of reasons such as the high burnout levels of young healthcare employees, their new starting to the profession, and their lack of experience in the profession.

In the present study, it was found that emotional burnout and desensitization scores decreased as the working times in the healthcare sector increased. When the effects of working times in the healthcare sector on burnout were evaluated, it was reported in studies conducted in China and Spain that as the working time increased, burnout decreased [13, 17]. However, in a study that was conducted in Italy, it was reported that the risk of emotional burnout increased as the working times increased [5]. The present study is similar to the results of studies conducted in China and Spain. It is considered that those working in the healthcare sector for many years can develop better coping skills with the problems they faced with the help of the working culture and experience they gained.

In the present study, emotional burnout and desensitization scores were higher in women. It was reported in some studies that the emotional burnout score is high in women and the desensitization score is high in men [15, 19–23]. When our findings were compared with the literature, they showed similarities in terms of emotional burnout and differed in terms of desensitization scores. The reason for this may be because of factors such as cultural characteristics, personal characteristics, or corporate policies.

In the present study, emotional burnout and desensitization scores of married people were lower than those of singles. When the effects of marital status on burnout were examined, it was found that studies generally reported that there is no relationship between marital status and burnout levels [6, 18, 24]. However, in a study that was conducted in Turkey, it was reported that the emotional burnout of married people was significantly lower than that of single people [1]. As a result of these findings, it can be argued that the social support received during the pandemic is important.

In the present study, emotional burnout and desensitization scores of those who had children were lower than those who did not have children, and their personal achievement scores were higher. Previous studies reported that people with children had low emotional burnout and desensitization scores and high personal achievement scores [1, 6, 15, 23, 24]. It can be argued that it is compatible with the literature data.

In the present study, the emotional burnout scores of those who had undergraduate education were found to be significantly higher than those of the high school and post-graduate groups. Desensitization scores of those who had undergraduate education were found to be significantly higher than those of the post-graduate and associate degree groups. Personal achievement scores of those who had post-graduate education were found to be significantly higher than those with associate degrees and undergraduate degrees. When the effects of educational status on burnout were evaluated, it was reported in a study conducted with nurses in the literature that nurses with undergraduate degrees had high emotional burnout and desensitization scores [13]. There are also studies reporting that emotional burnout increased as the educational level increased [18, 25]. It can be argued that our findings are compatible with the literature data. With the increased level of education, more duties and responsibilities can be imposed on healthcare employees. This may cause an increase in the factors that cause stress. For these reasons, it is considered that the level of burnout increases as the level of education increases.

In the present study, emotional burnout and desensitization scores of the nurses were found to be significantly higher than those of doctors and other healthcare professionals. Although it was reported in previous studies that doctors' emotional burnout and desensitization levels were higher than nurses and



other healthcare professional groups, it was reported that nurses' burnout levels were higher in recent studies [5, 6, 18, 26, 27]. Also, in a study that was conducted in China, it was reported that emotional burnout was high in doctors and nurses, and desensitization was high in doctors [28]. It can be argued that the reason for the high level of burnout of nurses is the effects of the pandemic as well as the heavy workload and hours. Also, the fact that nurses spend more time with patients for care may have affected burnout levels when it is considered in terms of increasing the risk of transmission.

In the present study, the emotional burnout and desensitization scores of daytime employees were lower than those working in the shift and day+shift system. The personal success score of daytime employees was higher than those working in the shift and day+shift system. It is reported in the literature that the burnout levels of healthcare employees who work alternately between day and night are high [7, 25]. It can be argued that our findings are compatible with the literature data. Considering that health employees work more overtime and have extra shifts because of the effects of the pandemic, the levels of burnout may increase in this respect. The fact that working in the watch and day+shift system also affects the continuity of a regular life may also have affected the results.

In the present study, the emotional burnout scores of those who answered "Yes, adequately" to the question "Do you think that the physical conditions such as equipment and staff in your hospital are adequate during the COVID-19 outbreak?" were found to be significantly lower than those who answered "No, not adequate" and "I have no idea". The desensitization scores of those who answered "Yes, adequately" to the abovementioned question were found to be significantly lower than those who answered, "No not adequate". The personal achievement scores of those who answered "Yes, adequately" to this question were found to be significantly higher than those who said "No, not adequate" to this question. In a previous study, it was reported that the lack of personal equipment increased the levels of emotional burnout and desensitization and decreased the level of personal success in healthcare employees [24]. It can be argued that our findings are compatible with the literature data. As a result of these data, it can be argued that adequate physical conditions such as the number of equipment and personnel in the working environment during the epidemic are important in reducing burnout.

## 5. Limitations

The present study had some limitations. First, the personality traits and individual psychological traits of healthcare employees were not included as possible predictors in the study. Second, another limitation is the low participation of healthcare professionals due to intense working conditions during the pandemic period. Third, the data of 478 participants could be analyzed in the study. This sampling size is inadequate to represent all healthcare professionals in the country. For this reason, these results restrict the generalizability to the entire country of the study. Lastly, conducting the study using the online survey technique under COVID-19 pandemic conditions constitutes a significant limitation. Most important risk of online survey technique is that it limits the researcher to help when they do not understand the questions or have something on their minds.

## 6. Conclusion

This study has important conclusions for better understanding the healthcare professionals well-being and mental health during the COVID-19. The present study showed that healthcare professionals in Turkey experienced moderate burnout in terms of emotional burnout and desensitization, and high levels of burnout in terms of personal achievement. The socio-demographic factors (age, gender, marital status, occupation, and educational status) and work-related effects (daily working hours, working conditions, and working times) contributed to the increased levels of burnout. The burnout levels of the nurses were found to be higher than those of other healthcare employees.

It is recommended to improve working conditions, monitor employees in high-risk units more closely, and provide psychological support to prevent or reduce the burnout levels of healthcare employees during the pandemic. However, it is important to prioritize nurses in the process of providing psychological support.

## Ethical approval

Written permissions were obtained from the Ethics Committee of the Institute of Healthcare Sciences of Kırklareli University (19.04.2021/PR0323R0/E-69456409-199-9967 number).

## Informed consent

All participants were informed about the study and their consent to participate was obtained before the online questionnaire application.

## Conflict of interest

The authors declare that they have no conflict of interest.

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