



## RESEARCH ARTICLE


# Evaluation of Job Satisfaction and Quality of Life Among Employees of a University Hospital During the Pandemic

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**ABSTRACT**

**Objective:** Health workers perform vital functions such as protecting, improving, treating and rehabilitating the health of individuals who make up the society. Satisfying health workers professionally, keeping financial livelihoods at a sufficient level, and improving living and working conditions are important factors in fulfilling these duties. Support with material and moral incentives, which will increase the job satisfaction and quality of life of health personnel, will also encourage the new generations to make their professional choices in the field of health sector. For this reason, it is important to identify the factors that negatively affect job satisfaction and quality of life, and to take measures against them, and to increase the job satisfaction and quality of life of employees. In this study, it is aimed to determine the factors affecting the job satisfaction and quality of life of healthcare workers, especially during the pandemic period, and to guide managers.

**Methods:** This descriptive, cross-sectional study was conducted with a sample of 317 healthcare workers at Tokat Gaziosmanpaşa University Hospital between October 2021 and January 2022. Job satisfaction was assessed using the Minnesota Job Satisfaction Scale, while the World Health Organization Quality of Life- Bref (WHOQOL-Bref) scale was employed to measure quality of life. Data were analysed using IBM SPSS Statistics 20. Statistical significance was set at  $p < 0.05$ .

**Results:** The average internal, external, and overall job satisfaction scores were  $3.42 \pm 0.65$ ,  $2.98 \pm 0.70$ , and  $3.25 \pm 0.63$ , respectively. Quality of life scores for the sub-dimensions were as follows: general health  $59.14 \pm 17.93$ , physical health  $70.0 \pm 16.90$ , psychological health  $66.0 \pm 15.07$ , social relationships  $65.64 \pm 14.64$ , and environmental health  $58.36 \pm 10.7$ . Correlation analysis revealed a positive relationship between job satisfaction and quality of life ( $p < 0.001$ ). Factors associated with higher job satisfaction and quality of life included being married, having children, having a higher education level, and voluntarily choosing their profession.

**Conclusion:** Job satisfaction and quality of life levels among hospital staff were moderate during the pandemic. These findings highlight the need for policies that enhance job satisfaction and quality of life among healthcare workers, particularly during crises such as pandemics. Continuous and effective strategies are essential to ensure healthcare worker retention and to maintain efficient healthcare services.

**Keywords:** Coronavirus Disease-2019, Job Satisfaction, Quality of Life, Healthcare Workers.

## Introduction

Coronavirus Disease-2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), emerged in December 2019 in Wuhan, China, and quickly turned into a health crisis and pandemic affecting the whole world. Although the mortality rate (2.6%) was lower than other coronaviruses, it was much more severe worldwide due to its high transmission rate, and millions of people were infected. The pandemic has severely affected not only sick individuals, but also healthcare professionals who work on the front lines in treating patients. Healthcare workers play a crucial role in managing public health crises by providing essential services, treating patients and reducing the spread of disease. During the pandemic period, long working hours, increased workload, insufficient resources and concerns related to the risk of infection have increased physical and psychosocial stress levels in healthcare workers.<sup>1-3</sup>

Job satisfaction is defined as an individual's level of satisfaction with his/her job and is a factor directly affecting the mental, physical and professional performance of the employee. While high job satisfaction has a positive effect on the performance of employees, decreased job satisfaction may lead to burnout, absenteeism and even leaving the profession. Job satisfaction in the health sector is critical not only for employee productivity but also for the quality of patient care.<sup>4</sup> Similarly, quality of life refers to the general well-being of the individual in physical, psychological, social and environmental dimensions and is closely related to the ability of healthcare professionals to cope with stress and fulfil their responsibilities.

The limited number of studies on job satisfaction and quality of life of healthcare workers during the pandemic process shows that healthcare workers face significant psychosocial effects, especially due to the challenging working conditions of the pandemic. Previous studies have shown that factors such as age, marital status, education level and work experience can affect job satisfaction and quality of life among healthcare workers. However, the pandemic has added a new dimension to the challenges faced by healthcare workers and emphasised the need to understand the impact of COVID-19 on job satisfaction and quality of life.

This study aims to evaluate the job satisfaction and quality of life of healthcare workers working in a university hospital during the COVID-19 pandemic. The findings obtained may contribute to the development of strategies to improve the well-being of healthcare workers in crisis situations affecting public health such as pandemics.

## Material and Method

### PLACE AND TIME OF THE RESEARCH:

This study is a descriptive and cross-sectional study to evaluate job satisfaction and quality of life of healthcare workers during the COVID-19 pandemic. The study was conducted at Tokat Gaziosmanpaşa University Hospital between October 2021 and January 2022.

### POPULATION AND SAMPLE OF THE STUDY:

The population of our study was determined as a total of 1110 individuals (290 physicians, 585 allied health personnel, 201 janitors and 34 administrative services) working in Gaziosmanpaşa University Hospital during the

period of our study. With the help of G\*Power version 3.1.9.7 programme, a total of 140 individuals were found to be sufficient with a power of 90%, a margin of error of 5% and an effect size of 0.60 according to two sample levels in independent groups. However, in our study, it was planned to conduct a study to reach at least twice the number of people and 330 people were reached in total. 13 people were excluded from the study due to missing data and a total of 317 people were included in the study.

### DATA COLLECTION TOOLS:

In the first part of the questionnaire we used in the study includes about the sociodemographic characteristics of the individuals, and in the second part, Minnesota Job Satisfaction Scale and World Health Organization Quality of Life-Bref (WHOQOL-Bref) Scale were used to measure job satisfaction and quality of life. Our questionnaire was applied by face-to-face interview method.

### MINNESOTA JOB SATISFACTION SCALE

It was developed in 1967 by Weiss et al. It is a five-point Likert scale consisting of 100 questions in long form and 20 questions in short form. The scale was adapted into Turkish by Baycan in 1985 and reliability and validity studies were conducted.<sup>5</sup> The scale has three sub-dimensions: intrinsic job satisfaction, extrinsic job satisfaction and general job satisfaction. Intrinsic satisfaction shows the individual's success, ability, creativity, independence, appreciation, recognition, opportunity for promotion, work, social status, relationship with colleagues and working conditions. External satisfaction questions the view of the manager, the rules of the organisation, recognition, security, relations with superiors, supervision and diversity.

### WHOQOL-BREF SCALE

The World Health Organization (WHO) developed the WHO Quality of Life Assessment Questionnaire (WHOQOL) to measure the well-being of individuals and compare their quality of life levels. The long form of this questionnaire consists of a total of 100 questions. Among these 100 questions, 26 questions were selected and WHOQOL-Bref was formed. WHOQOL-Bref consists of 4 domains: physical health, psychological health, social relationships and environmental health domains in addition to the general health perception domain, one of which questions quality of life and the other health satisfaction.<sup>6</sup> The Turkish version of WHOQOL-Bref was adapted by Eser et al. In the WHOQOL-Bref-Turkey version, 1 more question was added to these 26 questions to measure the level of environmental pressure and a total of 27 questions were included.<sup>7</sup>

### ANALYSING THE DATA:

Descriptive analyses were performed to give information about the general characteristics of the study groups. Data related to continuous variables were given as mean  $\pm$  standard deviation and data related to categorical variables were given as n (%). The compatibility of the analysed variables with normal distribution was checked by Kolmogorov Smirnov, Shapiro-Wilk Test, histogram graph, skewness and kurtosis and homogeneity of variations by Levene Test. Significance Test of the Difference Between Two Means and One-way Analysis of Variance (ANOVA) were used to compare the groups.

Pearson Correlation analysis was performed to show the relationship between the Minnesota Job Satisfaction Scale (JSS) and WHOQOL-Bref Scale. Statistical significance level was accepted as  $p < 0.05$ . IBM SPSS Statistics 20 was used in calculations.

**ETHICAL APPROVAL:**

The study was conducted with the approval of Tokat Gaziosmanpaşa University Faculty of Medicine Clinical Research Ethics Committee (21-KAEK-198). Written informed consent was obtained from the participants and the principle of confidentiality was meticulously

maintained.

**Results**

A total of 317 healthcare workers with a mean age of  $31.02 \pm 6.98$  years participated in the study. The participants were mostly in the 20-29 age group with 52.1%. Of the participants, 53.6% were female, 50.5% were married, 52.7% had a bachelor's degree, 44.5% were smokers and 10.7% were alcohol users, and 13.9% had at least one chronic disease (Table 1).

**Table 1:** Descriptive characteristics of participants.

Descriptive Characteristics	n	%
<b>Age (Year)</b>		
20-29	165	52.1
30-39	108	34.1
40 and above	44	13.9
<b>Gender</b>		
Female	170	53.6
Male	147	46.4
<b>Marital Status</b>		
Married	160	50.5
Single	157	49.5
<b>Having a Child</b>		
Yes	144	45.4
No.	173	54.6
<b>Education Level</b>		
Primary education	8	2.5
High School	59	18.6
Licence	167	52.7
Master's Degree/PhD	83	26.2
<b>Smoking</b>		
Yes	141	44.5
No.	176	55.5
<b>Alcohol</b>		
Yes	34	10.7
No.	283	89.3
<b>Chronic Disease</b>		
Yes	44	13.9
No.	273	86.1

Of the study group, 52.1% had COVID-19 and 18.3% had lost at least one family member due to COVID-19. While 95.6% of participants were vaccinated against

SARS-CoV-2, 87.3% were not vaccinated when they contracted COVID-19 infection (Table 2).

**Table 2:** COVID-19 Infection and Vaccination Status of Participants

	n	%
<b>COVID-19 History</b>		
Yes	165	52.1
No.	152	47.9
<b>Family History of Death Due to COVID-19</b>		
Yes	58	18.3
No.	259	81.7
<b>COVID-19 Vaccination</b>		
Yes	303	95.6
No	14	4.4
<b>Vaccination status before COVID-19</b>		
Yes, a single dose	12	7.3
Yes, at least two	9	5.5
Unvaccinated	144	87.3

**JOB SATISFACTION SCORES**

The mean intrinsic, extrinsic and general job satisfaction

scores of the participants were found to be  $3.42 \pm 0.65$ ,  $2.98 \pm 0.70$ ,  $3.25 \pm 0.63$ , respectively (Table 3).

**Table 1:** Job Satisfaction Scoring of Participants

Sub-dimensions of Minnesota Job Satisfaction Scale	Scores (Mean±SD)
Intrinsic Job Satisfaction Score	3.42±0.65
Extrinsic Job Satisfaction Score	2.98±0.70
General Job Satisfaction Score	3.25±0.63

Married participants had significantly higher job satisfaction compared to single participants ( $p < 0.05$ ). Higher job satisfaction scores were also observed in participants with higher education level and those who

had children ( $p < 0.05$ ). There was no significant difference in job satisfaction sub-dimension scores according to gender, chronic disease, smoking and alcohol use (Table 4).

**Table 4:** Comparison of Participants' Descriptive Characteristics and Job Satisfaction Scores

Descriptive Characteristics	Intrinsic Satisfaction (mean±ss)		Extrinsic Satisfaction (mean±ss)		General Satisfaction (mean±ss)	
		p		p		p
<b>Age (Year)</b>						
20-29	3.32±0.60 <sup>a</sup>		2.85±0.65		3.13±0.58	
30-39	3.45±0.66		3.02±0.69		3.28±0.62	
40 and above	3.72±0.76 <sup>b</sup>	<b>0.002</b>	3.37±0.77 <sup>a</sup>	<b>&lt;0.001</b>	3.58±0.75 <sup>a</sup>	<b>&lt;0.001</b>
<b>Gender</b>						
Female	3.37±0.68		2.92±0.71		3.19±0.65	
Male	3.48±0.62	0.164	3.05±0.68	0.082	3.31±0.61	0.103
<b>Marital Status</b>						
Married	3.54±0.65		3.10±0.71		3.37±0.63	
Single	3.30±0.64	<b>0.001</b>	2.86±0.67	<b>0.002</b>	3.12±0.61	<b>0.001</b>
<b>Having a Child</b>						
Yes	3.55±0.68		3.14±0.73		3.39±0.67	
No	3.32±0.61	<b>0.002</b>	2.85±0.65	<b>&lt;0.001</b>	3.13±0.58	<b>&lt;0.001</b>
<b>Education Level</b>						
Primary Education	3.13±1.06		2.68±0.92		2.95±0.99	
High School	3.16±0.57 <sup>a</sup>		2.73±0.59 <sup>a</sup>		2.99±0.55 <sup>a</sup>	
Licence	3.48±0.53 <sup>b</sup>		2.98±0.66 <sup>b</sup>		3.28±0.53 <sup>b</sup>	
Master's Degree/PhD	3.51±0.83 <sup>b</sup>	<b>0.002</b>	3.20±0.78 <sup>b</sup>	<b>0.001</b>	3.39±0.78 <sup>b</sup>	<b>0.001</b>
<b>Smoking</b>						
Yes	3.45±0.52		2.96±0.61		3.25±0.51	
No	3.40±0.75	0.499	2.99±0.77	0.704	3.24±0.72	0.804
<b>Alcohol</b>						
Yes	3.35±0.62		2.87±0.62		3.16±0.59	
No	3.43±0.66	0.489	2.99±0.71	0.335	3.26±0.64	0.394
<b>Chronic Disease</b>						
Yes	3.37±0.83		2.94±0.81		3.20±0.75	
No	3.43±0.62	0.659	2.99±0.68	0.691	3.25±0.62	0.610

It was observed that job satisfaction scores were significantly lower in those with a family history of death due to COVID-19 compared to those without ( $p < 0.05$ ).

However, it was found that vaccination status did not make a significant difference in job satisfaction level (Table 5).

**Table 5:** Comparison of Job Satisfaction Scores of Participants According to COVID-19 Survival and Vaccination Status

Variables	Intrinsic Satisfaction (Mean±SD)	p	Extrinsic Satisfaction (Mean±SD)	p	General Satisfaction (Mean±SD)	p
<b>COVID-19 History</b>						
Yes	3.50±0.63		3.03±0.63		3.31±0.60	
No.	3.34±0.67	<b>0.033</b>	2.92±0.77	0.166	3.17±0.66	0.054
<b>Family History of Death Due to COVID-19</b>						
Yes	3.12±0.78		2.80±0.71		3.0±0.71	
No.	3.49±0.60	<b>0.001</b>	3.02±0.69	<b>0.032</b>	3.30±0.60	<b>0.001</b>
<b>COVID-19 Vaccination</b>						
Yes	3.43±0.66		2.99±0.71		3.25±0.64	
No.	3.32±0.64	0.541	2.87±0.50	0.550	3.14±0.56	0.521
<b>Vaccination status before COVID-19</b>						
Yes, a single dose	3.56±0.34		2.94±0.46		3.32±0.37	
Yes, at least two doses	3.56±0.61		2.98±0.68		3.33±0.61	
No.	3.49±0.65	0.883	3.04±0.64	0.842	3.31±0.62	0.996

QUALITY OF LIFE SCORES

When we looked at the scores of the WHOQOL-Bref Scale sub-dimensions of the participants, we found that the general health score was  $59.14 \pm 17.93$ , the physical

health score was  $70.0 \pm 16.90$ , the psychological health score was  $66.0 \pm 15.07$ , the social relationships score was  $65.64 \pm 14.64$  and the environmental health score was  $58.36 \pm 10.7$  (Table 6).

**Table 6:** Quality of Life Scoring of Participants

WHOQOL-Bref Subscales	Scores (Mean±SD)
General Health Domain	$59.14 \pm 17.93$
Physical Health Domain	$70.0 \pm 16.90$
Psychological Health Domain	$66.0 \pm 15.07$
Social Relationships Domain	$65.64 \pm 14.64$
Environmental Health Domain	$58.36 \pm 10.7$

Participants who reported higher job satisfaction also had higher quality of life scores. No significant difference was found between age groups in terms of quality of life sub-dimension scores. Physical, psychological and social relationships sub-dimension scores were significantly higher in males than females ( $p < 0.05$ ). The psychological, social relationships and environmental sub-dimension

scores were significantly higher in married patients than in single participants and in participants with children than in those without children ( $p < 0.05$ ) (Table 7).

It was observed that having COVID-19 and having a family history of death due to COVID-19 significantly affected quality of life. ( $p < 0.05$ ) (Table 8).

**Table 7:** Comparison of Descriptive Characteristics of Participants and WHOQOL-Bref Subscale Scores

Features	General Health Score (mean±sd)	p	Physical Health Score (mean±sd)	p	Psychological Health Score (mean±sd)	p	Social Relationships Score (mean±sd)	p	Environmental Health Score (mean±sd)	p
<b>Age (Year)</b>										
20-29	58.40±18.47	0.835	69.17±17.54	0.907	64.14±15.87	0.159	63.83±15.60	0.050	56.89±10.76	0.080
30-39	59.72±16.51		71.06±15.32		68.13±12.32		66.43±11.97		58.99±8.99	
40 and above	60.51±19.42		70.61±18.32		67.80±17.38		70.45±15.91		62.35±13.51	
<b>Gender</b>										
Woman	57.86±17.66	0.172	66.91±17.51	<0.001	63.87±15.19	0.006	63.08±14.80	0.001	58.21±10.32	0.787
Male	60.62±18.17		73.61±15.45		68.48±14.59		68.59±13.93		58.54±11.28	
<b>Marital Status</b>										
Married	60.78±17.02	0.102	71.54±16.43	0.106	68.17±13.88	0.010	68.43±14.46	0.001	59.90±10.88	0.010
Single	57.48±18.71		68.47±17.27		63.80±15.94		62.79±14.32		56.80±10.44	
<b>Having a Child</b>										
Yes	61.19±16.96	0.063	71.87±16.51	0.075	68.54±13.66	0.005	68.92±14.28	<0.001	60.74±10.93	<0.001
No.	57.44±18.57		68.47±17.11		63.89±15.88		62.90±14.41		56.39±10.23	
<b>Education Level</b>										
Primary education	46.87±17.35	<0.001	62.94±21.84	0.207	63.02±23.92	0.042	68.75±16.51	0.229	61.32±17.35	0.001
High School Licence	54.44±16.20		69.97±18.27		63.13±13.59 <sup>a</sup>		63.13±16.09		54.18±9.63 <sup>a</sup>	
Master's Degree/PhD	58.30±18.13		68.92±17.37		66.19±14.82		65.21±14.88		58.12±10.44 <sup>b</sup>	
	65.36±17.05 <sup>a</sup>		72.93±14.03		67.97±15.49 <sup>b</sup>		67.97±12.65		61.55±10.50 <sup>b</sup>	
<b>Smoking</b>										
Yes	58.15±17.09	0.379	71.30±16.94	0.227	67.19±13.95	0.203	65.36±13.52	0.765	57.35±9.65	0.135
No.	59.94±18.57		68.99±16.84		65.05±15.89		65.86±15.52		59.17±11.53	
<b>Alcohol</b>										
Yes	55.51±21.80	0.301	68.38±16.68	0.551	61.64±16.78	0.112	66.42±12.39	0.743	57.26±9.87	0.526
No.	59.58±17.40		70.21±16.94		66.53±14.80		65.54±14.91		58.50±10.87	
<b>Chronic Disease</b>										
Yes	53.40±22.12	0.015	61.85±17.01	0.001	63.63±17.31	0.261	66.66±14.26	0.618	60.08±11.19	0.255
No.	60.07±17.02		71.33±16.54		66.39±14.68		65.47±14.72		58.09±10.68	

**Table 8:** Comparison of WHOQOL-Bref Sub-dimension Scores According to COVID-19 and Vaccination Status of Participants

Variables	General Health Score (mean±sd)	p	Physical Health Score (mean±sd)	p	Psychological Health Score (mean±sd)	p	Social Relationships Score (mean±sd)	p	Environmental Health Score (mean±sd)	p
<b>COVID-19 History</b>										
Yes	62.72±15.70		74.09±14.28		69.09±12.45		66.76±13.17		58.42±9.30	
No.	55.26±19.38	<0.001	65.60±18.39	<0.001	62.66±16.89	<0.001	64.41±16.04	0.157	58.30±12.18	0.921
<b>Family History of Death Due to COVID-19</b>										
Yes	54.95±17.35		65.27±18.07		61.35±14.59		61.92±17.52		54.90±10.58	
No.	60.08±17.95	0.049	71.08±16.47	0.018	67.05±15.0	0.009	66.47±13.82	0.068	59.14±10.66	0.006
<b>COVID-19 Vaccination</b>										
Yes	59.07±18.05		69.94±16.99		66.07±15.16		65.70±14.83		58.15±10.75	
No.	60.71±15.39	0.739	71.68±15.11	0.707	64.58±13.35	0.724	64.28±10.03	0.724	62.94±10.39	0.104
<b>Vaccination status before COVID-19</b>										
Yes, a single dose	60.41±20.52		75.29±11.54		71.52±7.06		68.75±9.48		59.37±6.92	
Yes, at least two doses	59.72±12.14		71.03±15.61		68.51±13.67		66.66±15.02		55.20±9.88	
No.	63.10±15.52	0.717	74.18±14.47	0.779	68.92±12.77	0.779	66.60±13.38	0.865	58.55±9.45	0.545

**CORRELATION BETWEEN JOB SATISFACTION AND QUALITY OF LIFE**

Correlation analysis revealed that there was a significant positive relationship between job satisfaction and quality

of life ( $p < 0.001$ ). In particular, higher intrinsic job satisfaction was associated with higher scores in the physical, psychological and social dimensions of quality of life (Table 9).

**Table 9.:** Correlation Analysis of WHOQOL-Bref Scores and Minnesota Job Satisfaction Scale Scores

	Intrinsic JobSatisfaction	Extrinsic JobSatisfaction	General JobSatisfaction
<b>General Health Domain</b>			
r	0.519	0.553	0.556
p	<0.001	<0.001	<0.001
<b>Physical Health Domain</b>			
r	0.551	0.497	0.561
p	<0.001	<0.001	<0.001
<b>Psychological Health Domain</b>			
r	0.614	0.494	0.598
p	<0.001	<0.001	<0.001
<b>Social Relationships Domain</b>			
r	0.436	0.380	0.438
p	<0.001	<0.001	<0.001
<b>Environmental Health Domain</b>			
r	0.449	0.457	0.480
p	<0.001	<0.001	<0.001

**Discussion**

Ensuring the continuity and improving the quality of health services depends on the degree of job satisfaction and quality of life of healthcare professionals serving in this field. It has been observed that job satisfaction and quality of life are very important variables in order to meet the dedication expected from healthcare professionals, especially during the pandemic period.

While the general and intrinsic job satisfaction scores of the participants were found to be moderate, the extrinsic job satisfaction score was found to be lower than normal. In the study conducted by Atalay and Cakirel, intrinsic job satisfaction was found to be at a moderate level, while extrinsic and general job satisfaction scores were found to be lower than normal.<sup>8</sup> In a study conducted by Yu et al. on 455 health workers, intrinsic, extrinsic and general job satisfaction scores were found to be moderate.<sup>9</sup> The reason for the low extrinsic job satisfaction score in the studies conducted in our country may be that the health workforce compensation is not sufficient at the economic level compared to other countries.

In Guduk et al. study, general, intrinsic and extrinsic job satisfaction scores were found to be lower than normal in both genders. However, job satisfaction sub-dimension scores of women are higher than those of men. However, no statistically significant difference was found between men and women.<sup>10</sup> In the study conducted by Uzuntarla et al. general, intrinsic and extrinsic job satisfaction scores were found to be higher in males than females. However, general and extrinsic job satisfaction scores were lower than normal in both genders. Intrinsic job satisfaction score was lower than normal in women and higher than normal in men.<sup>11</sup> In our study, general, intrinsic and extrinsic job satisfaction scores were higher in males than females. While the general and intrinsic scores of both

genders were higher than normal, the extrinsic job satisfaction score was higher than normal in men and lower than normal in women.

The effect of age on job satisfaction has been examined by many researchers. In the studies conducted by Aydin, Ozturk, Tekir et al. it was observed that job satisfaction levels increased with age, but increasing age did not have a significant effect on job satisfaction.<sup>12-14</sup> Similarly, in our study, it was observed that job satisfaction scores increased with increasing age. However, a significant difference was found between the age groups in our research, and this difference was between the 20-29 age range and the 40 and over age range. This difference may have emerged as a result of the fact that the expectations of new recruits could not be met as desired. At the same time, it is thought that the job satisfaction scores of older health care workers are higher than those of younger age groups due to reasons such as the experience gained by them and the achievability of their expectations from the job.

When the participants were evaluated according to their marital status, the job satisfaction levels of married individuals were significantly higher than those who were not married. In the study conducted by Bakirci and Ozata with 261 health workers, it was observed that the level of job satisfaction of single employees was higher than married employees, but no significant difference was found.<sup>15</sup> In a study conducted with 171 nurses, job satisfaction levels of single individuals were found to be higher than married individuals.<sup>16</sup> In another study conducted with 368 healthcare workers, it was reported that although job satisfaction levels were higher in married workers than single workers, there was no significant difference.<sup>17</sup> In our study, it was thought that the fact that married individuals had higher levels of job satisfaction than single individuals was due to the fact that

married individuals overcame the difficulties experienced especially during the pandemic period as a result of their sharing with each other, focusing more on their work due to their responsibility towards someone other than themselves, and the economic income obtained economically in the case of both working of some married individuals was higher than single individuals.

The effect of education levels on job satisfaction has been mentioned in many studies. Öztürk et al. reported that the group with high school education level had the highest job satisfaction, while the group with undergraduate education level had the lowest job satisfaction. They also reported that there was a significant difference between education levels in terms of job satisfaction.<sup>18</sup> In a study conducted by Kaya and Oguzoncul with 282 healthcare workers, it was reported that the level of job satisfaction increased significantly as the level of education increased.<sup>19</sup> Similar to the literature, we found that the level of job satisfaction increased significantly with the level of education. The increase in job satisfaction levels in parallel with the level of education was thought to be the result of the self-confidence brought by knowledge, experience and knowledge as a result of the education of the individual. The rapid advancement of technology in this period has shown that individuals should improve themselves to that extent. As the level of education increases, individuals' perspectives on work change and they can fulfil the requirements of the job more accurately. As a result, job satisfaction increases in parallel with the level of education.

In the COVID-19 pandemic, healthcare professionals worked devotedly and there were some deaths among healthcare workers in this period. During the first outbreak of the pandemic, although there was preparedness for any pandemic, there was a state of panic in healthcare workers as well as in the society due to the lack of adequate personal protective equipment, insufficient space in intensive care units, lack of public preparedness for the pandemic, and the lack of a vaccine to limit the outbreak. In some studies, the fear of contracting COVID-19 infection caused a decrease in the job satisfaction levels of healthcare workers.<sup>20,21</sup> They have been the frontline group fighting COVID-19 patients, and many of them have been infected with this disease during the practice of their profession. These negative situations have also affected the job satisfaction levels and quality of life of healthcare workers. In the study conducted by Guduk et al., the job satisfaction levels of healthcare workers diagnosed with COVID-19 were significantly lower than those who were not diagnosed with COVID-19.<sup>10</sup> However, in this study, we found that the job satisfaction levels of those who had COVID-19 infection were higher than those who did not. This may have been caused by the fact that most of the group we studied had COVID-19 infection. However, the idea that healthcare workers who had COVID-19 infection produced antibodies and this situation provided protection for them may have caused them to focus more on their work, thus increasing their job satisfaction levels.

In our study, it was observed that the job satisfaction levels of healthcare workers were significantly lower in all sub-dimensions in case of death after COVID-19 diagnosis in one of the family members compared to those who did not have a death due to COVID-19 in their family. Since healthcare professionals are the occupational group that is most closely related to the disease, there is always a risk of transmitting hospital infections to their families. Especially during this pandemic period, this has become even more important. Healthcare workers are likely to hold themselves responsible for COVID-19-related deaths in their families. Therefore, the individual will not enjoy his/her work and therefore job satisfaction levels will decrease.

In our study, the quality of life of healthcare workers was moderate for each sub-dimension. Reasons such as troubles experienced during the pandemic period, economic concerns, staying away from family members, being in close contact with patients one-on-one and catching the disease affect the quality of life level of healthcare workers. When the literature is examined, the quality of life levels of healthcare workers are generally found to be at a medium level.<sup>22</sup> The fact that our healthcare workers have a moderate quality of life compared to developed countries may be due to the location of our country, inadequate financial support for healthcare workers and intense workload.

When we evaluated the quality of life sub-dimensions according to age groups, no significant difference was found. However, it was observed that the physical and psychological health sub-dimension scores of quality of life were the highest among the 30-39 age group, followed by the 40 and over age group and the 20-29 age group, respectively. When we look at the social and environmental health domain scores of the quality of life scale, it was observed that these scores increased as the age group increased. As the age increases, the social environment, status, knowledge and experience of individuals increase, which affects variables such as self-confidence, economic independence and changes the level of quality of life positively. The fact that the physical and psychological health scores are lower in the young and older age groups compared to the middle age group can be thought to be due to reasons such as the individuals' low mastery of their work at young ages, making more effort to learn the job, having more financial concerns in this age group, and having high expectations for the future and not being met when desired. In older ages, the physical ability of the individual will decrease compared to the younger age group. This situation will also be reflected psychologically. It may cause a decrease in the quality of life of the individual for reasons such as not being in the position he/she wants to be in advanced ages. Similar to our study, Devran et al. reported that quality of life increased at older ages.<sup>23</sup> In the study conducted by Ibrahim et al, it was reported that the quality of life level of nurses over 30 years of age was significantly higher than those under 30 years of age.<sup>24</sup>



When quality of life sub-dimensions were evaluated according to gender, it was observed that men had significantly higher quality of life levels. This may be due to the fact that men are more comfortable in both their work and non-work life, have less dependence on someone, have more social relations with their environment and can participate in more social activities than women. At the same time, apart from the workload of women, it may have been caused by the situations that society imposed on them at home. In studies in the literature, similar to our study, quality of life levels were significantly higher in men than in women.<sup>25-27</sup>

When we evaluated the quality of life sub-dimensions according to the marital status, the quality of life of married individuals was found to be higher in all sub-dimensions than single individuals. Likewise, the quality of life levels of individuals with children were found to be significantly higher than those without children. The level of quality of life may have increased due to reasons such as having someone to live with, not feeling loneliness, feeling responsibility towards another individual other than oneself, the fact that the lives of those who are married or have children are more organised than those who are single or do not have children, and acting in a planned manner. In most of the studies on quality of life in the literature, it has been reported that the quality of life levels of married individuals are significantly higher than single individuals.<sup>23,26,28</sup>

In our study, it was observed that the quality of life levels increased as the level of education increased. As the level of education increases, the quality of life is positively affected due to reasons such as the increase in the knowledge acquired by the individual, the increase in the efficiency obtained from the job with education, the change in the status of the individual with the level of education and the decrease in economic concerns as the level of education increases. In the studies conducted by Yildiz, Ibrahim et al. and Okyay et al. it was reported that quality of life levels increased as the level of education increased.<sup>24,29,30</sup>

When we looked at the quality of life levels of the individuals in terms of smoking, alcohol use and chronic disease, it was seen that there was no significant difference within individuals who did not smoke, did not use alcohol and did not have chronic disease. In terms of chronic disease, there was a significant difference only in the physical health domain, with a lower quality of life score compared to those without chronic disease. This situation is thought to be caused by reasons such as the effect of the disease and the effect of medication. In terms of general health scores, it was observed that individuals who smoked, drank alcohol and had chronic diseases had lower quality of life levels than individuals who did not smoke, drank alcohol and did not have chronic diseases. Similar to our study, Devran et al. reported that smoking and alcohol use and having a chronic disease did not create a significant difference in quality of life levels.<sup>23</sup> However, whether smoking and

alcohol have an effect on quality of life or whether the level of quality of life encourages smoking and alcohol should be evaluated in further studies. In most studies in the literature, it has been reported that individuals with chronic diseases have lower quality of life levels than those without chronic diseases.<sup>30,31</sup>

In our study, the quality of life level of healthcare workers who had COVID-19 infection was found to be higher than those who did not have COVID-19 infection. This may be due to the fact that healthcare workers who have had the disease, knowing that antibodies are formed, feel safer in their work than those who do not have the disease. When those with a family history of death due to COVID-19 were examined, it was observed that there was a significant decrease in quality of life compared to those without a family history of death. Death in family members will cause both physical, social and psychological consequences in individuals. The fact that healthcare workers know that the risk of transmitting the disease from themselves to their family members is higher than professional groups due to reasons such as following COVID-19 patients, following up contacts, lack of adequate personal protective equipment at the beginning of the epidemic, and as a result, the death of one of their family members due to the epidemic will also put the individual in a guilt psychology. This will reduce the satisfaction and quality of life of the healthcare worker from his/her job. In addition, having a history of death in family members will also push the individual to fear of being alone. Both the guilt and the fear of being alone will negatively affect the person's enjoyment of life and the quality of life will decrease.

When we evaluated the relationship between job satisfaction and quality of life of healthcare workers, it was seen that all sub-dimensions of the quality of life scale and all sub-dimensions of the job satisfaction scale had a significant relationship with each other. As job satisfaction levels increase, quality of life levels also increase significantly. Studies in the literature have also shown that job satisfaction is significantly positively correlated with quality of life levels.<sup>32,33</sup>

## Conclusion

This study showed that healthcare workers at a university hospital had moderate levels of job satisfaction and quality of life during the COVID-19 pandemic. It highlights the need for proactive measures to support healthcare workers, especially during public health crises. Addressing factors that influence job satisfaction and quality of life, such as providing psychological support, increasing the number of ancillary staff, and ensuring manageable workloads, can improve the well-being of healthcare workers, reduce burnout, and ultimately improve healthcare service delivery.

Since our study is a cross-sectional study, the results obtained can only be generalised to the population in which the study was conducted. Conducting similar multi-

centre studies will help to interpret the levels of job satisfaction and quality of life of hospital employees more accurately.

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