The Professional Quality of Life for Healthcare Workers During the COVID-19 Pandemic in Turkey and the Influencing Factors

Türkiye'de COVID-19 Salgını Döneminde Sağlık Çalışanlarında İş Yaşam Kalitesi ve Bunu Etkileyen Faktörler

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ABSTRACT

Objective: It is very important to ensure the professional quality of life of healthcare workers in combating the coronavirus disease-19 (COVID-19) outbreak. It is therefore necessary to determine what factors may lead to compassion satisfaction (CS), burnout (BO) and compassion fatigue (CF) in order to ensure the professional quality of life in healthcare workers, and to develop institutional and national strategies and policies to eliminate these factors. Therefore in this study, we aimed to determine the levels of CS, BO and CF among healthcare workers during the COVID-19 pandemic, as well as the influencing factors.

Methods: A descriptive, descriptive-relational and cross-sectional study was conducted, using the Professional Quality of Life scale, with 796 Turkish healthcare workers after the emergence of the COVID-19 pandemic. In the study, the Professional Life Quality of healthcare workers was examined in three dimensions including CS, BO and CF.

Results: The results indicated that while 77.8% of healthcare workers were above the mean CS level, 62.8% of them were below the mean BO level and 87.3% of them were below the mean CF level. Their title, department, professional working year and workmates' diagnosis with COVID-19 were found to affect the CS, BO and CF of healthcare workers.

ÖZ

Amaç: Koronavirüs hastalığı-19 (COVID-19) salgını ile mücadelede sağlık çalışanlarının iş yaşam kalitesinin sağlanması oldukça önemlidir. Bu nedenle sağlık çalışanlarında iş yaşam kalitesini sağlamak için merhamet tatminine, tükenmişliğe ve merhamet yorgunluğuna hangi faktörlerin yol açabileceğini belirlemek gerekir. Bu nedenle bu çalışmada, COVID-19 salgını döneminde sağlık çalışanlarının mesleki tatmin, tükenmişlik ve eş duyum yorgunluğu düzeylerinin ve bunları etkileyen faktörlerin belirlenmesi amaçlanmıştır.

Yöntemler: Bu çalışma, COVID-19 pandemisinin ortaya çıkmasının ardından 796 Türk sağlık çalışanı ile Profesyonel Yaşam Kalitesi Ölçeği kullanılarak tanımlayıcı-ilişkisel ve kesitsel olarak yapılmıştır. Çalışmada, sağlık çalışanlarının Profesyonel Yaşam Kalitesi mesleki tatmin, tükenmişlik ve eş duyum yorgunluğu olarak üç boyutta incelenmiştir.

Bulgular: Sonuçlar, sağlık çalışanlarının %77,8'inin ortalama mesleki tatmin düzeyinin üzerinde olduğunu, %62,8'inin ortalama tükenmişlik düzeyinin altında ve %87,3'ünün ise ortalama eş duyum yorgunluğu düzeyinin altında olduğunu göstermiştir. Sağlık çalışanlarının mesleki tatmin, tükenmişlik ve eş duyum yorgunluğu üzerinde unvan, çalışılan birim, mesleki çalışma yılı ve

Conclusion: We found that workers had good levels of CS and low levels of BO and CF during the study period. Therefore, we can say that the quality of work life is good. However, due to the increase in the number of cases, we recommend that the study be repeated in future, to continuously evaluate the psychological state of healthcare workers and, using the resulting comparisons, to implement the necessary arrangements timeously.

Keywords: COVID-19 pandemic, healthcare workers, professional quality of life, influencing factors

mesai arkadaşının COVID-19 tanısı alma durumunun etkili olduğu bulunmuştur.

Sonuç: Sonuç olarak, çalışmanın yapıldığı zaman diliminde sağlık çalışanlarının mesleki tatmin düzeylerinin iyi olduğunu, tükenmişliğin ve eş duyum yorgunluğunun düşük olduğunu, dolayısıyla iş yaşam kalitesinin iyi olduğunu söyleyebiliriz. Ancak olgu sayılarının artması nedeniyle çalışmanın ilerleyen zamanlarda tekrarlanması, sağlık çalışanlarının psikolojik durumunun sürekli değerlendirilmesi ve karşılaştırmaların yapılarak gerekli düzenlemelerin bir an önce hayata geçirilmesi önerilmektedir.

Anahtar Sözcükler: COVID-19 salgını, sağlık çalışanları, iş yaşam kalitesi, etkileyen faktörler

Introduction

The Coronavirus disease-19 (COVID-19) emerged in Wuhan, China in December 2019 and led to a global pandemic. The World Health Organization (WHO) declared the COVID-19 outbreak a public health emergency of international concern on 30 January 2020 (1). The first case of COVID-19 in Turkey was observed on 11 March 2020, and it quickly became a pandemic in the country.

Although the WHO and public health officials all over the world have tried to control the COVID-19 pandemic, the rapid spread and severe clinical course of the virus have made the fight against the pandemic difficult and protracted (2). The most important tasks in this struggle undoubtedly fall to healthcare workers.

Healthcare workers have been adversely affected by long working hours and difficult working conditions during the pandemic, the disease's rapid transmission and the high mortality rate, fears of contracting COVID-19 and passing it on to their families and prolonged separation from loved ones (3-7). These reasons cause healthcare workers to have burnout (BO) and compassion fatigue (CF), which lead healthcare workers to develop severe mental problems such as depression and anxiety (1,8-11). These problems cause the compassion satisfaction (CS) of healthcare workers to decrease, and ultimately, the quality of their working life also decreases.

Research has indicated that CS decreases in healthcare workers who constantly experience BO and CF (12,13), and this causes a decreased health service performance and quality of patient care, and negative job attitudes, while also increasing service delivery costs and the number of staff who think of quitting their jobs (14). Therefore BO, CF and CS are important factors that affect the fight against the pandemic and need to be addressed immediately.

The WHO, highlighting the excessive burden on healthcare workers during the pandemic, called for action to address urgent needs and measures to save lives and prevent serious adverse effects on the physical and mental health of healthcare workers (2). Therefore, in this study, we investigated the CS, BO and CF levels of healthcare workers during the COVID-19 pandemic and examined influencing factors.

Methods

Study Design and Setting

A descriptive cross-sectional online survey design and a quantitative research method were used. With permission obtained, a copy of the survey was converted into an online survey using one of the free survey websites, and a link to it was shared on social media platforms (Facebook, Instagram and Twitter) and WhatsApp groups that included healthcare workers. The data were collected between 25 and 30 June 2020. The participants responded to the survey after agreeing to participate in the study. Surveys were completed after data entry were deleted from the website. The researcher protected against multiple uses by exporting the data.

Sample Size and Sampling

Healthcare workers working in healthcare services constituted the population of our study. According to the latest data announced by the Turkish Statistical Institute (15), there were 160,810 doctors, 198,103 nurses, 55,972 midwives and 182,456 other medical staff in 2019 in Turkey. The other medical staff group includes healthcare personnel employed in fields including surgery, anaesthesia, environmental health, dental prosthetics, dentistry, physiotherapy, first and emergency aid, biology, child development, dietetics, laboratory work and audiometry.

With the population known, it was sufficient to reach at least 384 healthcare workers with a confidence interval of 95% by using the sample calculation formula. This study reached 796 healthcare workers using the online survey method. Since there was no existing data on the prevalence of quality of life, p and q-values were taken as 0.5.

Data Collection Tool

The online survey form consisted of 12 questions investigating the sociodemographic and working style of the study participants, and 30 questions from the Professional Quality of Life scale.

Demographic and Work-Related Information Form

The researchers prepared the survey in accordance with the literature (16,17). It consisted of questions related to respondents' age; gender; marital status; title; department; professional, weekly

and daily working hours and the pandemic. It also included questions about providing care for COVID-positive patients during the COVID-19 pandemic and being diagnosed as having COVID-19.

Professional Quality of Life Scale

The Professional Quality of Life scale was developed by Stamm in 2005 (18), and its validity and reliability in Turkish studies were confirmed by Yeşil et al. (16) in 2010. This scale is a self-report evaluation tool consisting of 30 items and three subscales. The items are evaluated on a six-step chart ranging from "never" (0) to "very often" (5). Three subscales consist of CS (10 items), BO (10 items) and CF (10 items) parts. Higher scores obtained from each dimension indicate higher levels of CS, BO and CF, respectively. The minimum and maximum scores obtained from the scale are zero and 50 points, respectively. The Turkish version of the scale has CS.87, BO.72 and CF.80 Cronbach's alpha values, respectively (16). In this study, the Cronbach's alpha coefficient was found to be 0.88 for CS, 0.70 for BO and 0.84 for CF,.

Statistical Analysis

The SPSS 24.0 statistical package programme was used for statistical analysis of the data. Descriptive statistics were used while investigating the prevalence of CS, burnout and CF within the data on demographic and working styles. The independent samples t-test and one-way analysis of variance (ANOVA) were used as parametric tests; the Kruskal-Wallis and Mann-Whitney U tests were used as nonparametric tests. Skewness and kurtosis values were required to be between +1.5 and -1.5 to evaluate the homogeneity of variance (19). Pearson's correlation analysis was used for the prediction results. The results were evaluated at a confidence interval of 95% and a significance level of $p < 0.05$.

Ethical Considerations

Permission was obtained for the study from the Ministry of Health (2020-05-21T15_40_06) and KTO Karatay University Medicine and Non-Medical Device Research Ethics Committee (2020/023).

Results

The demographic characteristics of the participants and the descriptive statistics of their working conditions are presented in Table 1. Most of the healthcare workers were female, married and between the ages of 36 and 45. While 39.57% of the study participants were nurses, 45.73% of them worked in departments unrelated to COVID-19. Of the participants 38.57% had been working in their fields for between six and ten years. Furthermore, while 28.26% of the healthcare workers participating in the study worked for more than 45 hours a week, participants working eight hours a day were in the majority (60.05%), while day and shift workers were almost equal in number. While 50.13% of the participants were providing service (care) for COVID-19 positive patients, 98.49% of them were not diagnosed as having COVID-19. Of the study participants, 56.28% reported that their workmates were not diagnosed as having COVID-19 either (Table 1).

The mean scores of the dimensions of CS, BO and CF were found to be 32.93±8.83 (minimum (min)-maximum (max): 5-50 points, median: 33.00), 18.39±6.91 (min-max: 2-42 points, median: 18.00), and 16.09±8.27 (min-max: 0-49 points, median: 15.00), respectively. Furthermore, it was determined that while 77.8% of the participants were above the mean CS level, 62.8% of them were below the mean BO level and 87.3% of them were below the mean CF level. In the paired correlation analysis, CS was found to be moderately but negatively correlated with burnout (r=-0.572, p=0.000) and weakly and negatively (r=-0.157, p=0.000) correlated with CF. Burnout was correlated with CF above moderate and in the same direction (r=0.622, p=0.000).(Table 2).

The statistical analysis of the CS, BO and CF levels of the healthcare workers who participated in the study according to demographic data and working conditions was presented in Table 3.

In terms of CS, differences in age, marital status, title, field, professional working year, weekly working time, daily working hours and workmate's diagnosis with COVID-19 were found to be statistically significant ($p < 0.05$ for each). The highest CS was found in those younger than 25 years (35.29±8.71), single (33.84±8.85), working as radiology technicians (35.71±8.54) or in the radiology unit (35.54±8.69), those with less than five years of professional experience (37.35±8.04), those working over 45 hours a week (34.50±8.89), those working 12-hour shifts (36.41±8.55) and those with no COVID-positive workmates (33.71±8.71).

Concerning BO, doctors had the highest average (19.81±7.88), and we found the difference between professions to be statistically significant. Healthcare workers in the COVID-19 intensive care (20.87±7.12), those with six to ten years of professional experience (19.15±.13), those working 24 hours a day (19.70±7.42), those working in shifts (19.63±7.37) and those with COVID-positive workmates (19.76±7.15) had the highest mean BO score, and the difference between the groups was statistically significant ($p < 0.05$ for each) (Table 3).

The difference between the groups of gender, title, department, professional working year, and workmates' diagnosis with COVID-19 was statistically significant ($p < 0.05$ for each) when it came to CF. The highest CF was seen in women (16.17±8.09), Emergency Medical Technician (EMT)-paramedics (17.85±8.88), those working in family medicine and community health (18.31±7.68), those with six to ten years of professional experience (16.82±8.72), and healthcare workers with COVID-positive workmates (17.11±8.49) (Table 3).

Discussion

This study showed that during the COVID-19 pandemic to date, while 77.8% of healthcare workers were above the mean CS level, 62.8% of them were below the mean BO level and 87.3% of them were below the mean CF level. No research was found on healthcare workers' CS during the COVID-19 period throughout Turkey, and similar results were found in a study

Table 1. Demographic data of the participants and descriptive statistics of working conditions

Characteristics	Variable	n	%
Age	≤25	147	18.47
	26-35	245	30.78
	36-45	313	39.32
	>45	91	11.43
Gender	Female	537	67.46
	Male	259	32.54
Marital status	Married	543	68.22
	Single	253	31.78
Title	Doctor	52	6.53
	Nurse	315	39.57
	Midwife	60	7.54
	EMT-paramedic	104	13.07
	Health officer	74	9.30
	Laboratory technician	31	3.89
	Radiology technician	58	7.29
	Pharmacist	25	3.14
	Anaesthesia technician	77	9.67
Department	Policlinic	23	2.90
	Emergency department	44	5.53
	112 emergency healthcare services	87	10.93
	Laboratory	41	5.15
	Radiology unit	61	7.66
	Family medicine-community health	51	6.40
	COVID-19 service	71	8.92
	COVID-19 intensive care	54	6.78
	Other departments	364	45.73
Professional working time	<5 years	43	5.40
	6-10 years	307	38.57
	11-15 years	146	18.34
	16-20 years	148	18.59
	>20 years	152	19.10
Weekly working time for the last month	<40 hours	195	24.50
	40 hours	195	24.50
	40–45 hours	181	22.74
	> 45 hours	225	28.26
Daily working hours for the last month	8 hours	478	60.05
	12 hours	73	9.17
	16 hours	60	7.54
	24 hours	185	23.24
Weekly working style for the last month	Daytime	238	29.90
	Shift	191	23.99
	Both daytime/shift	251	31.54
	Flexible work	116	14.57
Providing service (care) for COVID-19 positive patients	Yes	399	50.13
	No	397	49.87
Diagnosis with COVID-19 during the pandemic	Yes	12	1.51
	No	784	98.49
Workmate's diagnosis with COVID-19 during the pandemic	Yes	348	43.72
	No	448	56.28
Total		796	100

COVID-19: Coronavirus disease-19

Table 2. Sub-dimensions of the Quality of Life scale for employees and the correlation of the sub-dimensions with one another

The Professional Quality of Life scale	X̄ ± SD	Min-max	Median	Quartiles (25-75%)	Pearson's correlation		
					1.	2.	3.
Compassion satisfaction	32.93±8.83	5-50	33.00	27.00-39.00	1		
Burnout	18.39±6.91	2-42	18.00	13.00-23.00	**r=-0.572 p=0.000**	1	
Compassion fatigue	16.09±8.27	0-49	15.00	10.00-21.00	**r=-0.157 p=0.000**	**r=0.622 p=0.000**	1

r: Correlation coefficient, p<0.05: Statistically significant, SD: Standard deviation, Max: Maximum, min: Minimum

conducted using the same scale during the Chinese COVID-19 pandemic (20). However, in an Iranian study, healthcare workers' CS was found to be low (21). Similar studies on BO in Turkey demonstrated that healthcare workers had a moderate BO desensitisation score (22) and that healthcare workers were very optimistic during the COVID-19 period, despite experiencing stress and emotional exhaustion (8). Arpacioglu et al. (10) revealed that frontline healthcare workers in Turkey had high CF during the COVID-19 pandemic to date.

Our findings showed that most healthcare professionals were satisfied with their job and did not experience BO and CF during the period examined. The fact that Turkey experienced low case numbers, low mortality rates and low numbers of critically ill patients relative to other countries (23) might affectthis outcome. Other studies indicated that the severity of disease complications and high mortality rates in COVID-19 had adverse psychological effects on healthcare workers (24,25). Healthcare workers might be positively affected by the increased employment of healthcare workers in Turkey during the pandemic, their perception of adequate working conditions (26), and the provision of adequate protective equipment, drugs and test materials (8). Mobilization was declared in the country at the time of the study, and with media announcements praising healthcare professions, healthcare workers felt supported, praised and motivated. This strengthened healthcare workers emotionally and psychologically and protected them from BO and CF. This, in turn, ensured that CS was at a good level.

According to the results of this study, CS was higher in those younger than 25, single individuals, radiology technicians and other radiology workers, those with less than five years of professional experience and those working for 12-hour shifts. A similar study reported that age, gender, educational status and access to protective equipment affected CS during the COVID-19 process (21). Healthcare workers aged below 25 years of age might have higher CS because they were protected from exhaustion, they had fewer than five years of experience, accordingly worked in low-risk units, were generally single, and had less childcare or other responsibility. The fact that radiology technicians worked "n the background", with relatively little direct contact with patients, might also have a positive effect on CS.

In our study, the BO level of doctors and healthcare workers in COVID-19 intensive care were found to be higher. A similar study found that doctors experienced higher BO, compared to nurses, during the pandemic (13). Matsuo et al. (11) reported that nurses and laboratory workers had higher levels of BO when compared to other workers. Doctors and nurses are at direct risk and therefore experience intense stress, while caring for COVID-19 patients. Due to the problems they experience in the working environment, these medical staff are negatively affected by physical, mental and social issues and face BO (27).

Intensive care units (ICUs) with critically ill COVID-19 patients are locations where healthcare workers face a high risk of infection, and therefore, they are required to wear advanced protective equipment. They are environments with high mortality rates, and in the case of this pandemic, the course and symptoms of the disease have sometimes been unknown (28). Therefore, healthcare workers in the COVID-19 ICUs are severely physically and psychologically affected and experience BO (29,30). A similar study reported that those working in intensive care, emergency and COVID-19-related departments experienced higher levels of BO compared to some others (22). In this study, BO was higher in those with six to ten years of professional experience and those working 24-hour shifts. Contrary to these results, another study reported that healthcare workers with fewer working years had higher levels of BO (11). The Psychiatric Association Mental Trauma and Disaster Study Unit's Guide for the Protection of Healthcare Workers from Burnout during the COVID-19 Pandemic indicates that the working hours of healthcare workers, especially in the COVID-19 intensive care and services, should not be unusually long (31). Factors such as longer working hours, the number of COVID-19 patients being treated, and limited logistical support were associated with mental problems among staff (25). Furthermore, the International Nurses Association's guide states that senior nurses should be employed, especially in places such as COVID-19 ICU (32). Therefore, working in COVID-19 ICU might contribute to BO among senior healthcare workers with ten years of working experience.

According to this study, CF levels were higher in women, and those working in EMT-Paramedic, Family Medicine and Community Health departments. These results are consistent with the existing literature (10). CF is the mood of a person

Table 3. Statistical analysis of compassion satisfaction (CS), burnout (BO) and compassion fatigue (CF) according to demographic data and working conditions (n=96)

Characteristics	Compassion satisfaction $\bar{X} \pm SD$	Test, p	Burnout $\bar{X} \pm SD$	Test, p	Compassion fatigue $\bar{X} \pm SD$	Test, p
Age						
≤25	35.29±8.71		18.47±7.69		15.50±9.11	
26-35	32.88±33.00	**F=4,858**	18.47±7.69	F=0.459	16.56±8.45	F=0.846
36-45	31.96±8.71	**P=0.002**	18.19±6.53	P=0.711	16.24±7.89	p=0.469
>45	32.56±9.00		17.93±6.74		15.26±7.68	
Gender						
Female	33.10±8.61	t=0.803	18.62±6.96	t=1.361	16.17±8.09	**t=3.759**
Male	32.57±9.28	p=0.422	17.91±6.80	p=0.174	14.52±8.45	**p=0.000**
Marital status						
Married	32.50±8.80	**t=-1.993**	18.19±6.77	t=-1.192	16.30±8.26	t=1.041
Single	33.84±8.85	**p=0.047**	18.82±7.19	p=0.234	15.64±8.30	p=0.298
Title						
Doctor	29.92±8.94		19.81±7.88		16.54±9.70	
Nurse	32.92±8.54		18.69±6.89		16.33±8.19	
Midwife	33.42±8.66		18.13±6.50		17.17±6.68	
EMT-paramedic	34.23±9.20	**X²=16.596**	19.26±7.28	**X²=20.660**	17.85±8.88	**X²=19.371**
Health officer	32.38±8.29	**P=0.035**	16.66±6.30	**p=0.008**	15.38±7.98	**p=0.013**
Laboratory technician	30.77±9.44		18.58±5.61		15.36±8.19	
Radiology technician	35.71±8.54		15.69±5.67		13.10±8.25	
Pharmacist	32.64±10.00		16.20±6.74		15.88±5.55	
Anaesthesia technician	32.26±9.11		19.56±7.32		14.90±8.45	
Department						
Policlinic	33.61±9.50		15.57±6.59		14.65±5.57	
Emergency department	34.60±8.73		19.02±6.72		16.07±8.74	
112 emergency healthcare services	33.81±9.06		19.13±7.46		17.72±9.00	
Laboratory	30.95±9.22		18.17±6.27		15.49±8.91	
Radiology unit	35.54±8.69	**X²=15.926**	15.48±5.86	**X²=26.552**	13.97±8.17	**X²=19.074**
Family medicine-community health	31.00±8.62	**p=0.043**	18.80±5.52	**p=0.001**	18.31±7.68	**p=0.014**
COVID-19 service	31.80±9.62		19.80±7.20		17.09±8.25	
COVID-19 intensive care	31.13±7.92		20.87±7.12		18.26±8.80	
Other departments	33.02±8.63		18.13±6.94		15.39±7.99	
Professional working time						
<5 years	37.35±8.04		15.51±5.27		12.26±7.28	
6-10 years	33.15±8.92		19.15±7.13		16.82±8.72	
11-15 years	33.27±8.23	**F=3.863**	17.84±6.48	**F=3.305**	16.38±8.54	**F=3.321**
16-20 years	31.88±8.64	**p=0.004**	18.69±7.18	**p=0.011**	15.32±7.35	**p=0.010**
>20 years	31.93±9.26		17.92±6.78		16.18±7.94	
Weekly working time for the last month						
<40 hours	32.80±8.62		17.60±6.20		15.48±7.64	
40 hours	31.22±8.45	**F=4.885**	18.65±6.90	F=1.266	16.21±7.66	F=0.500
40-45 hours	32.96±9.10	**p=0.002**	17.89±7.02	p=0.285	16.43±8.54	p=0.682
>45 hours	34.50±8.89		18.45±7.37		16.25±9.09	

	Table 3. Continued					
Characteristics	Compassion satisfaction X̄ ± SD	Test, p	Burnout X̄ ± SD	Test, p	Compassion fatigue X̄ ± SD	Test, p
Daily working hours for the last month						
8 hours	32.59±8.86		17.87±6.49		15.96±8.04	
12 hours	36.41±8.55	**F=4.227**	18.99±7.62	**F=3.477**	17.07±9.63	F=2.284
16 hours	32.73±6.84	**p=0.006**	17.82±7.16	**p=0.016**	13.85±7.68	p=0.078
24 hours	32.49±9.19		19.70±7.42		16.78±8.40	
Weekly working style for the last month						
Daytime	32.07±8.76		18.19±6.39		16.10±8.13	
Shift	32.58±9.27	F=2.210	19.63±7.37	**F=3.992**	17.41±9.03	F=2.481
Both daytime/shift	34.05±8.49	p=0.086	18.33±7.09	**p=0.008**	15.42±8.08	p=0.060
Flexible work	32.85±8.83		16.90±6.46		15.36±7.51	
Providing service (care) for COVID-19 positive patients						
Yes	32.73±9.29	t=-0.650	18.82±7.24	t=1.758	16.57±8.54	t=1.624
No	33.13±8.36	p=0.516	17.96±6.54	p=0.079	15.62±7.98	p=0.105
Diagnosis with COVID-19 during the pandemic						
Yes	30.00±9.38	Z=-1.016	17.00±6.59	Z=-0.398	15.25±6.66	Z=-0.036
No	32.98±8.82	p=0.309	18.41±6.91	p=0.691	16.11±8.30	p=0.971
Workmate's diagnosis with COVID-19 during the pandemic						
Yes	31.92±8.90	**t=-2.857**	19.76±7.15	**t=5.020**	17.11±8.49	**t=3.074**
No	33.71±8.71	**p=0.004**	17.32±6.52	**p=0.000**	15.30±8.03	**p=0.002**

X̄: Arithmetic mean, SD: Standard deviation, F: ANOVA, t: Independent Samples T-Test, X2: Kruskal-Wallis test, Z= Mann-Whitney U Test, p<0.05: Statistically significant

arising from experiencing stressful events in their line of work. The COVID-19 pandemic constantly exposes healthcare workers to stress. Some studies reported that female healthcare workers experienced more psychological problems and were more emotionally affected than their male counterparts during the difficult pandemic process (1,8). EMT-paramedics work in conditions requiring rapid intervention in complex and stressful settings. Primary care workers and emergency service providers are healthcare workers who admit COVID-19 patients for the first time. Moreover, they provide services to society as a whole, without knowing who has COVID-19. Therefore, these workers may develop CF by working under constant stress.

According to our results, BO and CF were high and CS was low in healthcare workers who had workmates diagnosed as having COVID-19. The fact that healthcare workers' workmates were diagnosed as having COVID-19 might negatively affect them and caused them feel stress by highlighting the possibility that their workload would increase, or that they too might be infected and infect their families. Therefore, we found that workmates' diagnosis with COVID-19 reduced the CS of healthcare workers by causing BO and CF.

Study Limitations

The study results and the reliability of the scale used were limited to the responses and sample size of the healthcare workers who participated in the study. The sample of this study consisted of

health professionals working in Turkey. Although our sample size was sufficient, we could not reach to an equal number of health professionals working in all regions of Turkey. This was our most important limitation in this study. Also, it was a limitation that the evaluations were not supported by clinical examinations. In subsequent studies, clinical psychiatric examinations of the participants can be performed. There is a need for larger and more universal sample groups to obtain more detailed results.

Conclusion

This study evaluated healthcare workers' CS, BO and CF levels and their influencing factors during the four months of the COVID-19 pandemic in Turkey. We also determined that the title, professional working time, department and workmates' diagnosis with COVID-19 affected the CS, BO and CF levels of healthcare workers. We saw that the number of cases was low and the number of inpatients in health institutions was less in the fourth month of the pandemic throughout the country compared to the present day. This situation potentially led to good CS, BO and CF levels among healthcare workers. However, the psychological state of healthcare workers may change depending on the uncertainty of the pandemic process, the number of cases and the density of hospitals. Therefore, we recommend that CS, BO and CF levels of healthcare workers be continuously evaluated and compared to previous ones, so that the necessary arrangements can be made and implemented as soon as possible.

Ethics

Ethics Committee Approval: Permission was obtained for the study from the Ministry of Health (2020-05-21T15_40_06) and KTO Karatay University Medicine and Non-Medical Device Research Ethics Committee (2020/023).

Peer-review: Externally and internally peer reviewed.

Authorship Contributions

Concept: A.Y., Design: A.Y., B.Ö., Data Collection or Processing: A.Y., F.B., Ö.E., Analysis or Interpretation: F.B., A.Y., Ö.E., Literature Search: A.Y., F.B., B.Ö., Writing: A.Y., Ö.E.

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