Evaluation of integrated anxiety stress states and quality of life of healthcare workers during the COVID-19 process

Nevin Gunaydin[a,*], Ceyda Bol[b], Semsi Yilmaz[c]

[a]Ordu University, Faculty of Health Sciences, Department of Psychiatric Nursing, Ordu, Türkiye
[b]Rize Recep Tayyip Erdogan Training and Research Hospital, Department of Nursing, Rize, Türkiye
[c]Ankara University, Faculty of Medicine, Ibn-i Sina Hospital, Department Of Nursing, Ankara, Türkiye

Abstract

Aim: This study aimed to examine integrated anxiety and stress states and quality of life of healthcare workers during the COVID-19 process and the relationship between them.

Materials and Methods: The population of this descriptive, cross-sectional, and correlational study consisted of all healthcare workers working during the COVID-19 process in Turkey. The research sample consisted of 305 healthcare workers who could be reached online between 12 June and 25 August 2020. In the study, a "Personal Information Form", the "Integrated Anxiety-Stress Scale (IASS)", and the "Professional Quality of Life Scale (ProQOL)" were used.

Results: Of the healthcare workers, 85.2% were female, 72.5% were married, and 81.6% were nurses. 59.7% of them were assigned to COVID-19 units during the pandemic process. The mean total IASS score of the healthcare workers was 56.34 ± 28.70 and the mean IASS index score was 26.17 ± 8.30. The mean scores on the subscales of ProQOL were 32.64 ± 10.17 for professional satisfaction, 15.70 ± 9.32 for empathy fatigue, and 19.88 ± 7.22 for burnout. A strong significant relationship was found between the integrated anxiety/stress scale and the subscales of the professional quality of life scale ($p<0.01$). According to the regression analysis, burnout and empathy fatigue, which are the subscales of the professional quality of life scale, affected the integrated anxiety stress scale score ($p<0.01$).

Conclusion: This study, which was carried out in the middle and advanced periods of the outbreak, showed that the integrated stress-anxiety levels of healthcare workers were moderate and high. Increased integrated anxiety/stress increases burnout and empathy fatigue whereas it reduces professional satisfaction and predicts burnout and empathy fatigue. Therefore, in order to reduce the burnout level and empathy fatigue of healthcare professionals, interventions should be made to control/reduce their anxiety and stress levels.

Introduction

Healthcare workers have become one of the groups that are most affected by the COVID-19 pandemic, both physically and psychologically, and have drawn attention like never before [1-3]. The Geneva-based International Nursing Council reported 23 thousand infected healthcare workers worldwide to the World Health Organization (WHO); this number has exceeded 90 thousand in a short time. It was also reported that at least 7000 healthcare workers died [2,4]. The rate of COVID-19 cases among healthcare workers in Turkey was reported to be 57.4%, much higher than the world data (3% of the world population, at least 14% of all COVID-19 infections) [5].

Workload increasing every passing day, the weight of the patient profile, unpredictable work schedule, difficult working conditions, high perceived risks, the concern brought by a virus that has not yet been fully revealed, delayed results of drug and vaccine studies, unclear treatment protocols and side effects, quarantine, deterioration of work-life balance, neglect of personal and family needs, fear of infecting family members have contributed to the level of anxiety in healthcare workers and the worsening of existing mental problems [3,6-14]. Prolonged exposure to these adverse conditions has seriously impaired the performance of healthcare workers in their attention, cognition, and memory-related tasks and led them to make medical errors [15]. It is vital to maintain and enhance the psychophysical well-being of healthcare workers to effectively

combat emerging infectious diseases such as COVID-19 [16,17]. Many philosophers believe that the main aim of existence is to achieve the highest level of happiness and quality of life [18]. The World Health Organization defines the quality of life as "one's view regarding his/her place in life in terms of objectives, expectations, standards, and concerns" [19,20]. The COVID-19 pandemic, which causes acute and chronic psychophysical (sleep disturbance, burnout, etc.) effects in healthcare workers, affects the quality of life negatively [21].

Feelings such as fear and anxiety must be managed and their spread must be prevented, especially in situations that arise suddenly, such as an outbreak. Otherwise, the factors that reveal these feelings begin to govern individuals who constitute society [22]. Therefore, this research aimed to determine the integrated anxiety stress levels and quality of life, the relationship between them, and the affecting factors. The secondary goal of the study was to help explain the factors that are effective in reducing burnout and empathy fatigue and increasing professional satisfaction, which is among the determinants of the quality of life of healthcare workers at risk. Accordingly, the research questions are as follows:

- What is the level of integrated stress anxiety of healthcare workers?

- What is the level of quality of life of healthcare workers?

- Is there a relationship between the integrated stress anxiety levels of healthcare workers and their quality of life?

- What are the factors affecting the integrated stress anxiety levels and quality of life of healthcare workers?

Materials and Methods

The research has a descriptive, correlational, and cross-sectional design. The data of the study were collected voluntarily after obtaining approval from Ordu University Clinical Research Ethics Committee (decision dated 11/06/2020 and numbered 136-KAEK 119) and legal permission from the Ministry of Health of the Republic of Turkey (Decision dated 25/05/2020 and numbered 2020-05-25T18_48_27). The universe of the study consisted of individuals residing in Turkey. As it was not possible to meet face-to-face during the pandemic and due to time constraints, an online survey was prepared. The study was conducted with 305 healthcare workers between June 12 and August 25, 2020. Post hoc power analysis was performed to assess the adequacy of the sample size of the study. In the power analysis, it was determined that the power was 0.99 at a significance level of 0.05 and a confidence interval of 95% (Correlation H1=0.717, lower critical r=-0.112, Upper Critical r=0.112, power 0.99). This value indicated that the sample size was adequate [23]. Healthcare workers who have taken an active part in the field during the COVID-19 process, who agreed to participate in the research, who could be reached online, and who did not have a psychological or mental disorder were included in the study. Healthcare workers who were on leave during the COVID-19 process, who were pregnant, who had

a chronic disease, and who did not agree to participate in the study were excluded from the study.

Dependent variables of this research were integrated anxiety-stress and professional quality of life. The independent variables were gender, marital status, place of residence during the pandemic, educational status, occupation, hospital, the working year, working status in a unit related to COVID-19, psychological complaints in the process of COVID-19, use of psychiatric drugs, and the dose of psychiatric drugs taken during the COVID-19 pandemic.

A survey was created with the Google Forms tool and distributed to healthcare workers via social media. The data of the research were collected using a "Short Descriptive Form", the "Integrated Anxiety Stress Scale", and the "Professional Quality of Life Scale":

Short Descriptive Form: A 16-question form was prepared by the researchers to determine the data regarding the demographic and professional characteristics of the healthcare workers.

Integrated Anxiety Stress Scale (IASS): The scale was developed by Ebadi by reviewing the relevant literature to determine anxiety and stress levels. It has a 5-point Likert-type scale (between 0 and 4) and consists of 33 items. The score obtainable from the scale varies between 0-132. Also, the symptom index score varying between 0-33 is used in the calculation of the scale. The symptom total index range is divided into five parts: 0-7 indicating very low anxiety stress level, 8-14 indicating a low level, 15-21 indicating a moderate level, 22-28 indicating a high level, and 29-33 indicating a very high anxiety stress level. The Cronbach alpha of the scale was 0.964 [9]. In this study, the Cronbach alpha of the scale was found to be 0.970.

Professional Quality of Life Scale (ProQOL): The scale developed by Stamm is a 5-point Likert-type self-report tool consisting of 30 items and 3 subscales. The Cronbach alpha reliability coefficient was .87 for the professional satisfaction subscale, .72 for the burnout subscale, and .80 for the empathy subscale [24].

In this study, the Cronbach alpha coefficient was found to be 0.899 for professional satisfaction, 0.642 for burnout, and 0.874 for empathy fatigue. In this study, only the integrated stress-anxiety levels and quality of life of healthcare workers were examined. Also, this study covers only some part of the healthcare workers in Turkey. Therefore, it has limitations and it cannot be generalized to all healthcare professionals. Another limitation is that the study was carried out during the COVID-19 outbreak and does not cover the period other than the COVID-19 process. Another important limitation is that the research was conducted based on participants' self-report and is not generally valid.

Statistical analysis

The IBM SPSS 25.0 program was used for statistical analysis of the data. Descriptive statistics were used for the distribution of the sociodemographic characteristics of healthcare workers. Numbers, percentages, minimum and maximum values, means and standard deviations were employed to analyze the data. The Kruskal-Wallis test, one-way analysis of variance (ANOVA), the

Table 1. Demographic characteristics of participants.

		n	%
Sex	Male	45	14.8
	Women	260	85.2
Marital Status	Married	84	27.5
	Single	221	72.5
Living Area	Marmara	61	20.0
	Central Anatolia	125	41.0
	Aegean/Mediterranean	13	4.3
	Black Sea	90	29.5
	Eastern/southeastern Anatolia	16	5.3
Place of Stay during the Pandemic Process	With family	172	56.4
	At home with friends	21	6.9
	Alone	112	36.7
Education Status	High School	18	5.9
	Associate Degree	19	6.2
	Licence	221	72.5
	Graduate	47	15.4
Occupation	Other Health personnel (EMT,ANT,HCP)	36	11.8
	Nurse	249	81.6
	Physician	20	6.6
Working Hospital	Public Hospital	62	20.3
	Training and Research Hospital	98	32.1
	Private Hospital/City Hospital	59	19.3
	University Hospital	86	28.2
Working Year	0-4 year	229	75.1
	5-10 year	50	16.4
	10+	26	8.5
Unit of work	COVID/COVID IC service	116	38.0
	Areas outside the inpatient ward	78	25.6
	Non-COVID service/IC	111	36.4
Assignment to a Unit Related to COVID-19 in the COVID-19 Process	Yes	182	59.7
	No	123	40.3
Satisfaction With This Assignment	Yes	74	40.7
	No	108	59.3
Psychological Complaint Status in the COVID-19 Process	Yes	246	80.7
	No	59	19.3
Experienced Psychological Complaints	Worry (anxiety)	117	47.6
	Horror	28	11.4
	Unhappiness	42	17.1
	Despair	46	18.7
	Loneliness	13	5.3
Using Psychiatric Medication	Yes	24	7.9
	No	281	92.1
How to use the drug	Dose increase	2	8.3
	Dose remained stable	8	33.3
	It started during the COVID process	14	58.3

Continuous Variables	n	Min.	Max.	Ort.	SS.
Age	305	18	48	26.94	5.19

*EMT: Emergency Medicine technician, ANT: Anesthesia Technician, HCP: Home care Personnel.

Table 2. Distribution of scores from scales and their sub-dimensions.

Scale and Subscales	n	Min.	Max.	Ort.	SD.
Integrated Anxiety Stress Scale	305	0	132	56.34	28.70
Professional Satisfaction	305	2	50	32.64	10.17
Burnout	305	0	39	19.88	7.22
Compassion Fatigue	305	0	50	15.70	9.32
Integrated Anxiety Stress Scale – Groupings of Symptoms	n	%	-	-	-
Very Low Anxiety Stress	167	54.8	-	-	-
Low Anxiety Stress	49	16.1	-	-	-
Moderate Anxiety Stress	44	14.4	-	-	-
High Anxiety Stress	35	11.5	-	-	-
Very High Anxiety Stress	10	3.3	-	-	-

Mann-Whitney U test, and the Independent two-sample t-test were used to compare the total scores and subscale scores with sociodemographic characteristics. Pearson correlation analysis and linear regression analysis were used to determine the effect of sociodemographic characteristics on the scale score. It was determined whether the variables offered quantitative, independence, homogeneity, randomness, and normal distribution to determine which parametric and non-parametric tests should be used. The Kolmogorov-Smirnov Normality Test was used to evaluate if the variables had a normal distribution or not.

Results

In terms of the descriptive characteristics of the healthcare workers, the mean age was 26.94±5.19 (Min:18, Max:48); 85.2% of the healthcare workers were female; 72.5% were married; 72.5% had a bachelor's degree; 81.6% were nurses. Of the participants, 41% had lived in the Central Anatolia Region; 75.1% had been working for 0-4 years; 59.7% had been assigned to COVID-19 units. 80.7% of the participants had psychological complaints and they experienced the feeling of "anxiety (concern)" the most (47.6%). The rate of using psychiatric drugs was 7.9% (Table 1). The mean score of the participants was 56.34±28.70 on IASS, 32.64±10.17 on the professional satisfaction subscale, 19.88±7.22 on the burnout subscale, and 15.70±9.7032 on the empathy fatigue subscale. 70.9% of the participants had a low level of anxiety stress and their mean IASS index score was 26.17±8.30 (Table 2). Accordingly, the difference in the mean IASS score according to the region of residence, profession, unit, satisfaction with the assignment, psychological complaints during the COVID-19 process, and drug use was statistically significant (p<0.05) (Table 3).

The comparison of the ProQOL subscale scores according to demographic characteristics is presented in Table 4. For the Professional Satisfaction subscale, as seen in Table 4, the difference in the mean score on the "professional satisfaction" subscale according to profession and satisfaction with the assignment to a COVID-19 unit was statistically significant (p<0.05). For the Burnout subscale, as seen in Table 4, the difference in the mean "burnout" subscale score according to the region of residence, hospital, assignment to a COVID-19 unit, satisfaction with this assignment, the psychological complaints experienced, and

drug use was statistically significant (p<0.05). For the Empathy Fatigue subscale, as seen in Table 4, the difference in the mean "empathy fatigue" subscale score according to the hospital, psychological complaints, region of residence, and the professional group was statistically significant (p<0.05).

The IASS score (p<0.05) had a strong statistically significant relationship with the participants' "professional satisfaction," "burnout," and "empathy fatigue" subscale scores (Table 5). There was a strong relationship between burnout and empathy fatigue factors and the IASS score according to the results of multiple regression analysis (R=0.712, R2adjusted=0.502, F(3.301)=103.047; p=0.000). These variables accounted for half of the variation in the IASS score. Burnout (=0.516) and empathy fatigue (=0.300) were the most important predictor variables on IASS according to the standardized regression coefficients (Table 6).

Discussion

The COVID-19 pandemic globally threatens both physical and mental health. Healthcare workers constitute one of the most vulnerable professional groups during the COVID-19 pandemic in terms of well-being [25]. This study examined the relationship between the quality of life, which is an important determinant of well-being, and integrated stress anxiety in healthcare workers during the COVID-19 process. According to the findings obtained, it was determined that "burnout" and "empathy fatigue" levels increase and "professional satisfaction" decreases as the integrated anxiety stress score increases.

In this study, it was determined that 59.7% of healthcare workers were assigned to COVID-19 units and that 59.3% of them were not satisfied with this assignment (Table 1). In a relevant study conducted in England in April 2020, it was found that 60% of nurses were not satisfied with their professional life and were demoralized [26]. Again, in a study conducted during the COVID-19 period, it was determined that community nurses were more satisfied with their working conditions than nurses working in hospitals [27]. These results show that the majority of healthcare workers are not satisfied with working in COVID-19 units.

In this study, it was determined that 80.7% of the healthcare workers had psychological complaints during the

Table 3. Comparison of integrated anxiety stress scale scores by demographic characteristics.

		Integrated Anxiety Stress Scale			
		n	Mean±SD	Test	p
Sex	Male	45	49.96±32.05	t=-1.622	0.106
	Women	260	57.45±28.00		
Marital Status	Married	84	58.51±32.55	t=0.749	0.455
	Single	221	55.52±27.13		
Living Area	Marmara	61	61.11±27.77 [c]	F=3.376	0.000
	Central Anatolia	125	58.10±28.73[c]		
	Aegean/Mediterranean	13	79.54±22.16[b]		
	Black Sea	90	46.97±25.65[a]		
	Eastern/southeastern Anatolia	16	58.31±9.26[ac]		
Place of Stay during the Pandemic Process	With family	172	56.44±29.20	F=0.041	0.960
	At home with friends	21	54.62±29.81		
	Alone	112	56.52±27.95		
Education Status	High School	18	59.50±23.14	F=0.638	0.591
	Associate Degree	19	63.42±30.28		
	Licence	221	55.13±28.01		
	Graduate	47	57.98±33.15		
Occupation	Other Health personnel (EMT,ANT,HCP)	36	54.02±28.02[a]	F=4.625	0.011
	Nurse	249	67.64±28.77[b]		
	Physician	20	65.00±31.78[ab]		
Working Hospital	Public Hospital	62	56.34±29.43	F=2.008	0.113
	Training and Research Hospital	98	51.20±27.75		
	Private Hospital/City Hospital	59	57.42±28.36		
	University Hospital	86	61.47±28.96		
Working Year	0-4 year	229	57.25±27.74[c]	F=3.028	0.050
	5-10 year	50	58.96±29.78		
	10+	26	43.35±32.61		
Unit of work	COVID/COVID IC service	116	58.79±28.51[b]	F=3.756	0.024
	Areas outside the inpatient ward	78	60.95±28.25[b]		
	Non-COVID service/IC	111	50.55±28.50[a]		
Assignment to a Unit Related to COVID-19 in the COVID-19 Process	Yes	182	58.43±29.48	t=1.546	0.123
	No	123	53.26±27.32		
Satisfaction With This Assignment	Yes	74	46.28±27.03	t=-4.882	0.000
	No	108	66.75±28.28		
Psychological Complaint Status in the COVID-19 Process	Yes	246	62.50±26.92	t=9.992	0.000
	No	59	30.68±20.61		
Experienced Psychological Complaints	Worry (anxiety)	117	58.76±25.74[bc]	F=3.363	0.011
	Horror	28	53.61±31.70[b]		
	Unhappiness	42	72.76±26.64[a]		
	Despair	46	67.00±26.50[ac]		
	Loneliness	13	66.23±16.98[ab]		
Using Psychiatric Medication	Yes	24	65.75±30.20	t=1.678	0.094
	No	281	55.54±28.48		
How to use the drug	Dose increase	2	89.00±12.73a	F=11.475	0.000
	Dose remained stable	8	35.75±23.26b		
	It started during the COVID process	14	79.57±21.62a		

*EMT: Emergency Medicine technician, ANT: Anesthesia Technician, HCP: Home care Personnel.

COVID-19 process, that 47.6% of these complaints were "anxiety" and that 11.4% were "fear" (Table 1). Moreover, a significant relationship was determined between psychological complaints and integrated anxiety-stress lev-

Table 4. Comparison of Sub-Dimension Scores of the Quality of Life Scale for employees by demographic characteristics.

		n	Professional satisfaction Mean±SD	Burn out Mean ±SD	Empathy fatigue Mean ±SD
Sex	Male	45	29.78±11.61	19.40±7.66	14.53±10.42
	Women	260	33.13±9.84	19.96±7.16	15.90±9.12
	Test and Significance		t=-1.828/p=0.073	t=-0.478/p=0.633	t=-0.911/p=0.363
Marital Status	Married	84	31.96±10.21	19.54±7.20	15.69±10.05
	Single	221	32.89±10.17	20.00±7.24	15.71±9.05
	Test and Significance		t=-0.711/p=0.478	t=-0.506/p=0.613	t=-0.013/p=0.990
Living Area	Marmara	61	30.21±11.43	21.74±6.29^c	17.16±10.69^{bc}
	Central Anatolia	125	33.64±9.17	19.79±7.06^{ac}	16.38±8.63^{bc}
	Aegean/Mediterranean	13	31.08±8.70	26.92±6.99^b	20.92±9.90^b
	Black Sea	90	33.22±10.29	17.94±6.84^a	13.42±8.39^a
	Eastern/southeastern Anatolia	16	32.00±10.17	18.56±9.43^{ac}	13.44±10.87^{ac}
	Test and Significance		F=1.343/p=0.254	F=6.261/p=0.000	F=3.233/p=0.013
Place of Stay during the Pandemic Process	With family	172	33.12±9.92	19.42±7.16	15.93±9.44
	At home with friends	21	31.62±11.85	18.71±7.96	13.71±9.20
	Alone	112	36.09±10.28	20.79±7.14	15.72±9.19
	Test and Significance		F=0.457/p=0.634	F=1.502/p=0.224	F=0.528/p=0.590
Education Status	High School	18	32.61±9.56	20.00±5.99	16.50±9.90
	Associate Degree	19	31.74±14.84	19.32±8.14	14.05±12.34
	Licence	221	32.97±9.56	19.82±6.99	15.65±9.10
	Graduate	47	31.45±11.14	20.30±8.46	16.30±8.97
	Test and Significance		F=0.340/p=0.796	F=0.096/p=0.962	F=0.306/p=0.821
Occupation	Other Health personnel (EMT,ANT,HCP)	36	35.64±10.23^b	20.11±7.29	19.14±12.80^b
	Nurse	249	32.62±10.10^b	19.58±7.12	15.35±8.77^a
	Physician	20	27.45±9.18^a	23.15±7.92	13.90±7.45^a
	Test and Significance		F=4.259/p=0.015	F=2.306/p=0.101	F=3.040/p=0.049
Working Hospital	Public Hospital	62	32.06±11.50	20.24±8.09^c	15.73±9.18^b
	Training and Research Hospital	98	33.37±9.60	18.23±7.59^b	13.61±9.25^b
	Private Hospital/City Hospital	59	32.81±10.65	20.54±6.68^{ac}	17.07±9.27^a
	University Hospital	86	32.09±9.55	21.02±6.20^{ac}	17.13±9.25^a
	Test and Significance		F=0.320/p=0.811	F=2.657/p=0.047	F=2.784/p=0.041
Working Year	0-4 year	229	32.63±10.14	20.29±7.03	16.12±9.45
	5-10 year	50	31.98±10.49	19.62±6.97	14.30±8.59
	10+	26	33.92±10.11	16.69±8.71	14.69±9.52
	Test and Significance		F=0.311/p=0.733	F=2.978/p=0.052	F=0.951/p=0.388
Unit of work	COVID/COVID IC service	116	30.87±11.66	20.65±7.53	15.84±9.55
	Areas outside the inpatient ward	78	33.09±10.09	20.14±7.39	15.81±10.20
	Non-COVID service/IC	111	33.40±9.07	19.05±6.79	15.49±8.48
	Test and Significance		F=1.608/p=0.202	F=1.250/p=0.288	F=0.046/p=0.955
Assignment to a Unit Related to COVID-19 in the COVID-19 Process	Yes	182	31.88±10.37	20.73±7.31	16.55±9.32
	No	123	33.76±9.81	18.61±6.92	14.45±9.22
	Test and Significance		t=-1.585/p=0.114	t=2.539/p=0.012	t=1.941/p=0.053
Satisfaction With This Assignment	Yes	74	35.76±10.54	17.99±6.74	15.05±9.36
	No	108	29.22±9.41	22.61±7.12	17.57±9.19
	Test and Significance		t=4.383/p=0.000	t=-4.399/p=0.000	t=-1.804/p=0.073
Psychological Complaint Status in the COVID-19 Process	Yes	246	32.26±9.93	21.11±6.90	16.96±9.49
	No	59	34.22±11.08	14.75±6.24	10.46±6.35
	Test and Significance		t=-1.334/p=0.183	t=6.471/p=0.000	t=6.347/p=0.000
Experienced Psychological Complaints	Worry (anxiety)	117	32.80±10.26	19.88±6.95^a	16.66±8.95
	Horror	28	35.86±9.43	18.79±5.92^a	19.32±12.86
	Unhappiness	42	29.45±11.00	25.19±6.47^b	18.60±9.89
	Despair	46	30.91±8.28	21.65±6.46^a	15.11±8.12
	Loneliness	13	33.38±7.39	22.00±6.34^{ab}	15.85±8.49
	Test and Significance		F=2.139/p=0.077	F=5.965/p=0.000	F=1.263/p=0.285
Using Psychiatric Medication	Yes	24	32.75±10.13	22.17±6.83	17.08±7.53
	No	281	32.63±10.19	19.68±7.23	15.58 ±9.46
	Test and Significance		t=0.057/p=0.955	t=1.624/p=0.105	t=0.756/p=0.450
How to use the drug	Dose increase	2	31.00±1.41	30.50±0.71^a	27.00±8.49
	Dose remained stable	8	38.88±7.86	17.00±7.15^b	14.38±8.45
	It started during the COVID process	14	29.50±10.64	23.93±4.95^a	17.21±6.07
	Test and Significance		F=2.501/p=0.106	F=6.136/p=0.008	F=2.555/p=0.102

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*EMT: Emergency Medicine technician, ANT: Anesthesia Technician, HCP: Home care Personnel.

Table 5. Investigation of the relationship between the integrated Anxiety Stress Scale and the Quality of Life Scale for Employees and its Sub-Dimensions.

		Professional satisfaction	Burn out	Compassion fatigue
Integrated	r	-0.199	0.665	0.592
Anxiety Stress	p	0.000	0.000	0.000
Scale	n	305	305	305

Table 6. Regression model analysis between the Integrated Anxiety Stress Scale and the Sub-Dimensions of the Quality of Life Scale for Employees.

	Beta	Standart Error	Standart Beta	t	p
Constant coefficient	-4.256	7.260	-	-0.586	0.558
Professional satisfaction	0.164	0.144	0.058	1.139	0.256
Burnout	2.050	0.243	0.516	8.453	0.000
Compassion fatigue	0.923	0.168	0.300	5.489	0.000

F=103.047; p=0.000; R2(a)= 0.502; SH.= 301.

els (p<0.05) (Table 3). In a systematic review in which 148 studies were examined, the level of fear of healthcare workers was found to be 71.3% [28]. In studies conducted with healthcare workers during the COVID-19 pandemic, it was determined that healthcare workers experience anxiety at a rate of between 20-58.6% [12,29,30]. These findings reveal that the negative feelings of healthcare workers during the pandemic are associated with anxiety and stress levels.

The healthcare workers in this study had a moderate total anxiety-stress score (mean IASS score: 56.34±28.70) and a high mean anxiety-stress index (mean IASS index: 26.17±8.30 "22-28 high level"). 29.2% of the healthcare workers had moderate and high levels of anxiety-stress (Table 2). In a study conducted in countries where the COVID-19 pandemic was seen, it was found that mild symptoms of depression and anxiety were common in most healthcare workers whereas moderate and severe symptoms were less common among workers [12]. In another study, it was determined that 3.8% of healthcare workers had moderate to severe psychological distress [31]. In terms of the prevalence of mild mental symptoms, the study findings are consistent with the results reported in the literature. In the study, the moderate and severe mental symptoms were not at very high levels. This is thought to be because the time period in which the study was carried out coincided with the middle and advanced periods of the pandemic when the vaccine was available, and that the healthcare workers who constituted the sample had less working experience.

In this study conducted with 305 healthcare workers, the IASS score was 67.64±28.77 for nurses, 65.00±31.78 for

physicians, and 54.02±28.02 for other healthcare personnel, and a significant difference was determined between them (p<0.05). In a relevant study, it was reported that the anxiety symptoms of nurses/midwives (30.3%) and dentists (22.7%) were higher than those of other professions (15.2%) and that physicians (0%) constituted the professional group with the least anxiety symptoms [29]. These findings show that the level of anxiety is higher in professions that are in close contact with patients.

In this study, the mean score of the healthcare workers on the professional satisfaction subscale, a subscale of quality of life, was 32.64±10.17 (3.26±1.01 when divided by the number of items). The mean score was lower in those working in the units where patients with COVID-19 were given care (30.87±11.66) compared to those working in units other than the inpatient service (33.09±10.09) and other services (33.40±9.07). In a study conducted during the pandemic period, it was reported that the professional satisfaction score of healthcare workers was 3.6±0.6, that the professional satisfaction of community nurses was higher than those working in hospitals (β=0.24, p=.032), and that the professional satisfaction of nurses providing care to COVID-19 positive patients was significantly lower (β=-0.48, p=.009) [3]. Furthermore, in studies conducted before the pandemic, it was seen that the professional satisfaction level of healthcare workers varied between 3.3-3.87 (52-55). These results show that the professional satisfaction levels of healthcare workers decreased compared to the pre-pandemic period.

In this study, the average score on empathy fatigue, a subscale of quality of life, for healthcare workers was 15.70±9.32. It was found that the score was higher in those working in the units where patients with COVID-19 were given care (15.84±9.55) compared to those working in Non-COVID-19 services/ICUs (15.49±8.48) and units other than inpatient services (15.81±10.20). In a study conducted with 506 healthcare workers, it was reported that empathy fatigue was higher in healthcare workers working in COVID-19 units (24.3±8.1), intensive care units (20.3±7.4), and emergency services (18.9±6.8) and that 60.5% of healthcare workers had a high level of empathy fatigue [32]. These results show that the level of empathy fatigue is higher in healthcare workers working in units where patients with COVID-19 are given care.

In this study, the average score on burnout, which is a subscale of quality of life, for healthcare workers was 19.88±7.22. It was found that the score was higher in those working in the units where patients with COVID-19 were given care (20.65±7.53) compared to those working in Non-COVID-19 services/ICUs (19.05±6.79) and units other than inpatient services (20.14±7.39). Some studies showed that the level of burnout of healthcare workers has increased during the pandemic [33,34], on the contrary, some studies reported that the level of burnout could be lower in physicians who have been actively fighting the virus [34]. Furthermore, in a study conducted with healthcare workers during the COVID-19 pandemic, the rate of burnout was found to be between 55% and 72% [9,35]. In addition, it was stated that there was a strong correlation between the severity of the burnout syndrome and the effect of the pandemic (fatigue, professional satisfaction, de-

pression (p<0.05) [9]. These results show that burnout levels of healthcare workers are higher in units where patients with COVID-19 are given care.

It was found that the integrated anxiety stress level was different in terms of the unit of employment (p<0.05). It was determined that this difference resulted from the difference between the mean scores of the healthcare workers working in the COVID-19 units/COVID-19 intensive care units and those working in the non-COVID-19 services (p<0.05). In a study conducted with healthcare workers, it was determined that healthcare workers showed symptoms of anxiety (44.6%), depression (50.4%), and psychological distress (71.5%) during the pandemic, and that healthcare workers working on the front lines were at a higher risk of anxiety (1.57), depression (1.52), and psychological distress (1.60) than those who had not been working on the front lines [36]. These results show that healthcare workers working in close contact with COVID-19 patients have a higher level of psychological distress (depression, anxiety, stress).

A statistical difference was found between satisfaction with the assignment and burnout during the COVID-19 process (p<0.05). A study reported that the general burnout levels of those who were dissatisfied with their jobs were high [37]. These results show that professional satisfaction and burnout are correlated.

In this study, a highly significant relationship was found between "integrated anxiety stress scale score" and "professional satisfaction" in a negative direction and between "integrated anxiety stress scale score" and "burnout and empathy fatigue" (p<0.001). In a study conducted on healthcare workers, a strong positive correlation was determined between perceived stress and empathy fatigue (r=0.665, p<0.001) and burnout (r=0.547, p<0.001); a strong negative correlation was determined between perceived stress and empathy satisfaction (r=-0.386, p<0.001) [32]. These results show that there is a strong relationship between the level of anxiety stress and professional satisfaction, burnout, and empathy fatigue in healthcare workers.

According to the results of the multiple regression analysis, it was determined that burnout and empathy fatigue had a significant effect on the IASS score and explained 50.2% (R=0.712, $R^2_{adjusted}$=0.502, $F_{(3.301)}$=103.047; p=0.000) (Table 6). In a study, in which a multivariate analysis was performed in the COVID-19 pandemic period, it was reported that the variables associated with burnout explained a very small portion of the variables associated with the COVID-19 pandemic [9]. In another study conducted with 1422 healthcare workers, it was found that emotional burnout had a significant effect on anxiety (B=0.123, 0.374 p<0.001) [38]. In a study carried out with healthcare workers using stepwise multiple regression analysis, it was found that perceived stress had a significant predictive effect on empathy fatigue ($R^2_{adjusted}$ =0.612, β=0.388; p=0.000) and that empathy fatigue had a significant predictive effect on burnout ($R^2_{adjusted}$ =0.598, β=0.576; p=0.000) [39]. These results show that burnout is the most significant predictor of the quality of life on the integrated anxiety stress scale score and that empathy fatigue is the second most significant predictor for health-care workers.

Conclusion

In this study, it was determined that healthcare workers had a high integrated anxiety stress index and a moderate integrated anxiety stress score. It was also found that the quality of life of healthcare workers decreased during the COVID-19 pandemic. The strength of this study is that it helps to improve the quality of life of healthcare service providers, reduces medical errors in healthcare services, and prevents the emergence of mental and related (suicide, substance abuse, etc.) problems. Moreover, the study will contribute to the increase of low professional satisfaction, which causes quits, and to the decrease of burnout and empathy fatigue.

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