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# The effect of COVID-19 anxiety levels of healthcare professionals on the quality of working life and related factors

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**Abstract**

**Aim:** This study aims to determine the effect of COVID-19 anxiety levels of healthcare professionals on their working life quality.

**Method:** The sample of the descriptive, cross-sectional and correlational study consisted of healthcare professionals working in two university hospitals in western Turkey between May and July 2021. We used the "Personal Information Form, Coronavirus Anxiety Scale, and Working Life Quality Scale" as data collection tools. We used numbers and percentage calculations, arithmetic mean, median (25th–75th percentile), Mann–Whitney $U$ test, Spearmen correlation analysis and Linear Regression analysis to analyse the data.

**Results:** The mean score on the Quality of Life Scale of healthcare professionals was $3.74 \pm 0.28$, and the mean score on the Coronavirus Anxiety Scale (CAS) was $9.66 \pm 6.06$ (min. 0; max. 20). We found a negative and weakly significant relationship between the mean score of the CAS of healthcare professionals and the mean score of the employee quality of life scale. According to the results of the multiple linear regression analysis, we found the factors significantly affecting the anxiety states of healthcare professionals related to the Coronavirus are the quality of working life, age, sex and the state of caring for a patient with COVID-19.

**Conclusion:** As a conclusion of this study, it was determined that healthcare professionals experienced anxiety, and anxiety decreased as ages, working years and the number of children they have increased. In addition, it was determined that as the anxiety of healthcare professionals increased, the quality of working life decreased.

## 1 | INTRODUCTION

Coronavirus-19 (COVID-19) is a recently emerging infectious disease and public health problem caused by the coronavirus.[1,2] The World Health Organization reported more than 61.8 million cases of COVID-19 and more than 1.4 million deaths after 29 November.[3]

During the pandemic process, the health sector is amongst the most demanding and busy institutions. Despite all the developments experienced, negative factors such as the uncertainty of the course of the disease, physical pressure, the loss of isolation and social support, intense working hours, insufficient isolation measures and the excess of deaths and contamination have increased the anxiety level of healthcare professionals.[4,5]

In affected countries, many healthcare workers have been on the front lines. Because of the uncertainty of the disease and transmission, the isolation measures (mask, glasses, gloves, etc) have increased both mental and physical workload. Coping with such situations as insufficient support, lack of resources, especially protective equipment are the conditions that wear out healthcare workers.[6,7]

In the literature, it has been emphasised that healthcare professionals taking an active role in this process are concerned about being infected with the disease and infecting others (their family, friends and other employees) because of their direct contact with COVID-19 patients. It has also been mentioned that exposure to

traumatic events such as difficulties in working life, the suffering and the death of patients increase the anxiety experienced.[8]

As a result of the COVID-19 pandemic, the routine working conditions of healthcare professionals working on the front line changed, and the demand for healthcare professionals increased tremendously.[9,10] In the literature, it is reported that many factors, such as stigma, lack of support and sense of responsibility, increase the anxiety experienced by healthcare professionals. It is also stated that they are exposed to mental loads because of the heavy workload during the pandemic, and their quality of working life is affected accordingly.[11,12]

The course of clinical applications because of the pandemic has changed. Health workers working in different fields had to work in intensive care.[13] COVID-19, which has a high level of contagiousness and mortal symptoms, has been characterised not only as an infectious pandemic but also as a public health problem to be concerned about.[14] The teams and areas where healthcare professionals work during the pandemic have also changed. Guidelines have been prepared in many clinics against the pandemic, and different approaches to diseases and drugs have come to the fore.[15,16] In addition, it has been reported that because of the lack of resources and the high occupancy rate of the intensive care units, the anxiety about the pandemic increases[17] and decreases the quality of working life.[18]

The number of studies to determine the effect of COVID-19 anxiety on the quality of working life is quite limited.[19-21] The anxiety and changes in working life quality experienced by healthcare professionals during the COVID-19 pandemic may affect professional competence. In previous studies, it has been reported that factors such as quarantine, fear of contamination, stigma and fear of infecting the family during the pandemic process trigger anxiety.[22,23] Raising awareness on this issue is imperative in the fight against the virus and in providing competence. Therefore, in this study, we aimed to determine the effect of anxiety levels, which increased because of the pandemic, on the quality of working life, especially in healthcare professionals.

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**What's already known about this topic**

In the literature, it is reported that many factors such as stigma, lack of support and a sense of responsibility increase the anxiety experienced by healthcare professionals. It is also stated that they are exposed to mental loads because of the heavy workload during the pandemic and their quality of working life is affected accordingly.

**What does this article add**

The number of studies to determine the effect of COVID-19 anxiety on the quality of working life is quite limited. In studies, the variables that can affect the quality of working life are mostly limited to factors such as socio-demographic relations, fatigue and burnout, and there exists no relationship with anxiety. Therefore, in this study, we aimed to determine the effect of anxiety levels, which increased because of the pandemic, on the quality of working life, especially in healthcare professionals.

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## 2 | MATERIALS AND METHODS

### 2.1 | Study design

This study is descriptive, cross-sectional and correlational. As a result of the COVID-19 pandemic, we collected the data online via Google form. We used the STROBE checklist during the study writing phase.

### 2.2 | Population and sample of the study

The population of the study consisted of healthcare professionals working in two university hospitals in the Marmara region of Turkey. We gathered the data through the Snowball sampling method between May and July 2021. At the beginning of the study, contact was established with several healthcare professionals working at the university hospital. Then, with the help of these contacts, someone else was contacted, and then another person was contacted in the same way. Thus, the sampling of the study was completed by continuing in a chained manner, in the form of the sampling snowball effect. To get the sample size, it was calculated that 643 healthcare workers should be taken into the sample when the sample calculation was made through the OpenEpi programme in the range of 50% observation rate, 5% standard deviation and 99% power. After obtaining the necessary permissions for the study, an online survey form was prepared with the Google forms web application and sent to the smartphones of the healthcare workers via WhatsApp. As a result of the study, we included the data of 692 healthcare professionals (the response rate was 78%).

### 2.2.1 | Inclusion criteria

- Agreeing to participate in the study voluntarily,
- Living in Turkey,
- Having no impairment in mental and cognitive functions.

### 2.3 | Data collection tools and data collection

In this study, we collected the data using the Personal Information Form, the Coronavirus Anxiety Scale (CAS) and the Quality of Working Life Scale. After obtaining the necessary institution permission and ethics committee approval for this study, we filled the forms with the permission of the healthcare professionals who agreed to participate in the study.

**TABLE 1** CAS and the Quality of Working Life Scale score averages of healthcare professionals (n = 692)

| Scale | | Number | % | Mean ± SE | min.-max |
|---|---|---|---|---|---|
| Coronavirus Anxiety Scale | <9 | 220 | 31.8 | 2.60 ± 3.11 | 0-9 |
| | >9 | 470 | 68.2 | 12.96 ± 3.88 | 10-20 |
| Scale total | | | | 9.66 ± 6.06 | 0-20 |
| The Quality of Working Life Scale | | | | 3.74 ± 0.28 | 2.60-4.56 |

**TABLE 2** The relationship between some socio-demographic characteristics of healthcare professionals, CAS and the Quality of Working Life scale (n = 692)

| Characteristics | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Age | 1 | | | | |
| The number of children | $r = 0.416$ $P < .001$ | 1 | | | |
| Years of employment | $r = 0.918$ $P < .001$ | $r = 0.410$ $P < .001$ | 1 | | |
| Working time in a week | $r = 0.036$ $P = .348$ | $r = 0.018$ $P = 648$ | $r = 0.082$ $P = .149$ | 1 | |
| CAS | $r = -0.309$ $P < .001$ | $r = -0.145$ $P < .001$ | $r = -0.296$ $P < .001$ | 1 | |
| 1. The Quality of Working Life Scale | $r = -0.013$ $P = 746$ | $r = -0.038$ $P = 349$ | $r = 0.013$ $P = 748$ | $r = -0.081$ $P = .048$ | 1 |

## 2.4 | Personal introduction form

This form includes questions about the sex, marital status, presence of chronic disease, working style of healthcare professionals and COVID-19 outbreak.

## 2.5 | Coronavirus Anxiety Scale (CAS)

The validity and reliability of the Turkish version of the scale developed by Lee et al[24] were made by Evren et al.[25] The CAS is a self-reported mental health screening tool for dysfunctional anxiety associated with the coronavirus crisis. Since a significant number of people experience clinically great fear and anxiety during an infectious disease outbreak, the CAS was developed to assist clinicians and researchers identify individuals effectively with impaired functionality because of coronavirus-related anxiety. A CAS total score ≥9 indicates coronavirus-related dysfunctional anxiety. High scores on a particular item or a high overall scale score (≥9) may show the individual's problematic symptoms that may require further evaluation and/or treatment. The Cronbach's alpha of the scale for this study was 0.98.

## 2.6 | Working life quality questionnaire

The scale items were developed by Cacioppe,[26] and its validity and reliability in the Turkish version were determined by Macit et al,[27]

based on the items used in the study by Cacioppe and Mock. The questionnaire items were scored in Likert type as follows: "(1) Strongly Disagree," "(5) Strongly Agree." There is no reverse-scored item on the scale, which consists of 25 questions. It is reported that the higher score, the higher the quality of working life. The Cronbach alpha of the scale for this study was 0.66.

## 2.7 | Ethical considerations

Approval for this study was obtained from the Ethics Committee of Kirklareli University, approval number 2021/E-69456409-11130-PR0324. Consent was obtained from the participants before starting the study. The participant could leave the survey at any time without giving any reason. This study was carried out under the Declaration of Helsinki. Permission was obtained from the authors who made the validity and reliability of the scales via e-mail.

## 2.8 | Data analysis

We used Statistical Package for the Social Sciences (SPSS), V23 programme for statistical analysis. We used the Kolmogorov-Smirnov distribution test to examine the normal distribution and also descriptive statistical methods such as frequency, percentage, average and the standard deviation to evaluate the data. We observed that the data did not show normal distribution. We performed Mann–Whitney $U$ test and Kruskal–Wallis test analyses to determine the relationship between healthcare professionals' scale scores and

socio-demographical variables. We evaluated the relationship between the CAS of healthcare professionals and the quality of working life scale through the Spearman correlation. Multivariate linear regression analysis (method: enter) was used to determine the factors associated with coronavirus anxiety levels of healthcare professionals. The statistical significance level was determined as $P < .05$.

## 3 | RESULTS

The mean age of the healthcare professionals was $29.24 \pm 7.09$ (min. 20; max. 54) years; 77.7% are females, 62.5% are single, 72% have no child and 85.8% had no chronic disease. It was determined that the average working year of the employees was $6.50 \pm 7.11$ (min. 1; max. 32), 67.3% of them worked more than 45 hours a week, 69.9% of them looked after patients with COVID-19 and 87.3% of their close relatives did not develop coronavirus disease.

The mean score on the Quality of Life Scale of healthcare professionals was $3.74 \pm 0.28$, and the mean score on the CAS was $9.66 \pm 6.06$ (min. 0; max. 20). When the scores from the CAS were below and above the threshold, it was determined that 67.9% of the healthcare professionals had a total score of ≥9, indicating coronavirus-related dysfunctional anxiety (Table 1).

A negative and weakly significant correlation was found between the mean score of the CAS of healthcare professionals and the mean score of the quality of working life scale ($P = .048$). A negative correlation was determined between age ($P < .001$), the number of children ($P < .001$), years of employment ($P < .001$) and CAS score averages (Table 2).

It was determined that the CAS scores of married healthcare workers were statistically significantly higher ($P < .001$). However, there was no significant difference between marital status and the Employee Quality of Life scale ($P > .005$). There was no statistically significant difference between occupation and CAS and Employee Quality of Life Scale ($P = .415$, $P = .417$, respectively).

According to the results of multiple linear regression analysis, it was found that the factors significantly affecting the coronavirus-related anxiety of healthcare workers are the quality of working life, age, sex and the condition of caring for a patient with a diagnosis of COVID-19. These variables explain 10% of the total variance (Table 3).

## 4 | DISCUSSION

It is reported that health professionals worked at the forefront during the COVID-19 pandemic, which brought many risk factors.[28] Some studies have reported that healthcare professionals who fear infecting their relatives do not experience symptoms of high levels of anxiety and stress that may be long-lasting.[11,29] In a multicentre cross-sectional study conducted on more than 1000 Chinese, the anxiety level of healthcare professionals was 44.6%.[11] Another study said that anxiety and fear in health professionals appeared as the first psychological finding and increased gradually.[30] We found that the majority of healthcare professionals experienced anxiety during the pandemic process. It can be thought that the process experienced due to the COVID-19 pandemic triggered anxiety.

The increased workload because of the pandemic, working in complex areas, stigma and uncertain processes have also caused an increase in anxiety levels in healthcare professionals.[2] In the studies, the concepts of anxiety, stress and compassion fatigue, which affect the quality of working life, have come to the fore.[2,31] In studies, it has been reported that the difficulties experienced by healthcare professionals in maintaining their jobs increase their anxiety, and therefore, their quality of working life decreases.[2,21,31] In this study, it was determined that as the anxiety of health professionals increased, the quality of working life decreased. This result, which is in line with the literature, can be considered as the negative effect of difficulties experienced in professional working life on anxiety.

The anxiety experienced by healthcare professionals working at the forefront of the COVID-19 pandemic is a concept that needs to be emphasised, and it is reported that socio-demographical variables are affected by factors such as the presence of support and working conditions.[11] In a cross-sectional study conducted with 512 healthcare professionals in China, it was reported that healthcare professionals experienced anxiety during the pandemic, this anxiety decreased as age and working years increased, and there was no difference according to the number of children.[11] In another study

**TABLE 3** Factors that significantly affect the coronavirus anxiety status of healthcare professionals (n = 236)

| Model | B | SE | 95% CI | t | P |
|---|---|---|---|---|---|
| The Quality of Working Life Scale | −2.752 | 0.826 | (−4.375)-(−1.128) | −3.329 | .001 |
| Age | −0.181 | 0.035 | (−0.250)-(0.111) | −5.111 | <.001 |
| Sex | −2.424 | 0.579 | (−3.560)-(−1.288) | −4.190 | <.001 |
| Working hours | −0.889 | 0.490 | (−1.852)-(−0.074) | −1.813 | .070 |
| Caring for a patient with a diagnosis of COVID-19 | 1.017 | 0.498 | 0.039-1.995 | 2.043 | .042 |
| Status of having a relative with a diagnosis of COVID-19 | −1.533 | 0.786 | −3.077-0.010 | −1.951 | .052 |

*Note*: B, unstandardised coefficient. Model $R = 0.319$; $R^2 = 0.102$; adjusted $R^2 = 0.093$; Durbin-Watson = 1.909, $F = 11.091.30$; $P < .001$. Sex (0:Female, 1:Male) Dependent variable: Coronavirus anxiety levels.

conducted in Saudi Arabia, it was reported that the level of anxiety in healthcare professionals was moderate, anxiety was higher in women, married ones and those with chronic diseases, and there was no difference in other socio-demographical factors.[32] In the study, we observed that the increase in age, working years and the number of children decreased anxiety. Based on the idea that experience increases as age and working years increase, and social support increases as the number of children increases, it has been concluded that anxiety decreases.

It is a known fact that the anxiety experienced during the pandemic process is affected by many factors. Based on the results of the regression analysis of the studies, such variables as the high risk of transmission, the presence of chronic disease, being female and married,[32] working years, having had COVID-19 previously,[11] working in a direct contact unit,[33] increase anxiety. In our study, according to the results of multiple linear regression analysis, we found that the factors significantly affecting the coronavirus-related anxiety states of healthcare professionals are the quality of working life, age, sex and the condition of caring for patients with a diagnosis of COVID-19. We think that this difference may be affected by regional differences.

The most critical methodological limitation of this study is that to obtain data, the sample was not randomly selected, online, subjectively reported questionnaires were used, and the study population did not reflect the general population. The study does not provide an objective assessment as it is based on individual self-report. Another of the most important limitations is the collection of data from individuals working in only two hospitals at a certain period of time.

## 5 | CONCLUSION

In this study, we determined that health professionals experienced anxiety, and the anxiety experienced decreased as age, working years and the number of children increased. The findings can raise awareness in the implementation of measures to improve social support of healthcare professionals amid the increasing demands currently associated with the COVID-19 pandemic. In the future studies, follow-up research using both qualitative and quantitative approaches will be required to understand the psychosocial effects of COVID-19 on healthcare workers over time. In addition, there is a great need for cohort studies with larger samples to determine the impact of the COVID-19 epidemic on healthcare workers, and studies that will reveal the long-term negative effects of this long-lasting and still ongoing process on healthcare workers.

### ETHICAL CONDUCT OF RESEARCH
Ethical Considerations Approval for this study was obtained from the Ethics Committee of Kırklareli University. Verbal consent was obtained from each participant before starting the study.

### DATA AVAILABILITY STATEMENT
Data are available on request because of privacy/ethical restrictions. The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available because of privacy or ethical restrictions.

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