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COVID-19-associated healthcare worker depression: An increasingly common condition

Giderek yaygınlaşan bir hastalık: Sağlık çalışanında COVID-19 ile ilişkili depresyon

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ABSTRACT

Objectives: This study aimed to evaluate the mood of the employees of the ear-nose-throat (ENT) department with the Beck Depression Inventory (BDI) during the coronavirus disease 2019 (COVID-19) pandemic and determine the relationship between the mood and the quality and quantity of the work done.

Patients and Methods: A total of 62 healthcare workers (24 males, 38 females; mean age: 34.3±1.1 years; range 24 to 52 years) of our ENT clinic, who have been actively managing COVID-19 patients since April 2020, were included in the study. Those in the study were classified into two groups as nurses (Group 1) and doctors (Group 2). Group 1 consisted of 33 (53.2%) nurses, and Group 2 consisted of 29 (46.8%) doctors. The participants were assessed with a questionnaire by a clinical psychologist, and BDI was conducted to evaluate depressive mood in these individuals.

Results: A statistically significant difference was found between the groups in thinking they have sufficient knowledge on COVID-19, and the employees in Group 2 were more of the opinion that they did not have sufficient information (p=0.002). A statistically significant difference was found between the groups in terms of their viewpoint on the precautions against COVID-19 (p=0.001). Group 2 was more inclined to think that the precautions taken were inadequate (p=0.001). There was no statistically significant difference between the groups in terms of BDI severity, age, and BDI score (p=0.252, p=0.137, p=0.053, respectively).

Conclusion: Employees of high-risk departments such as ENT may be more prone to a depressed mood. The increased risk of contamination in correlation with the work done can lead to increased BDI scores and depressive mood disorder.

Keywords: COVID-19, depression, nurses, otolaryngology, physicians.

ÖZ

Amaç: Bu çalışmada, kulak burun boğaz (KBB) bölümü çalışanlarının Beck Depresyon Envanteri (BDE) ile koronavirüs hastalığı 2019 (COVID-19) pandemisi sırasındaki ruh hallerinin değerlendirilmesi ve ruh hali ile yapılan iş miktarı ve niteliği arasındaki ilişkinin belirlemesi amaçladı.

Hastalar ve Yöntemler: Nisan 2020'den bu yana COVID-19 hastalarını aktif olarak yöneten KBB kliniğimizin 62 sağlık çalışanı (24 erkek, 38 kadın; ort. yaş: 34.3±1.1 yıl; dağılım 24-52 yıl) çalışmaya dahil edildi. Çalışmaya dahil edilenler hemşireler (Grup 1) ve doktorlar (Grup 2) olmak üzere iki gruba ayrıldı. Grup 1'de 33 (%53.2) hemşire, Grup 2'de 29 (%46.8) doktor yer aldı. Katılımcılar klinik psikolog tarafından bir anket ile değerlendirildi ve bu bireylerde depresif duygudurumunu değerlendirmek için BDE kullanıldı.

Bulgular: Gruplar arasında COVID-19 hakkında yeterli bilgiye sahip olduğunu düşünme konusunda istatistiksel olarak anlamlı bir fark bulundu ve Grup 2'deki çalışanlar yeterli bilgiye sahip olmadıklarını düşünme eğilimindelerdi (p=0.002). Gruplar arasında COVID-19'a karşı alınan önlemlere bakış açıları açısından istatistiksel olarak anlamlı bir fark bulundu (p=0.001). Grup 2, alınan önlemlerin yeterli olmadığını düşünmeye daha yatkındı (p=0.001). Gruplar arasında BDE şiddeti, yaş ve BDE skoru açısından istatistiksel olarak anlamlı bir fark bulunamadı (sırasıyla, p=0.252, p=0.137, p=0.053).

Sonuç: Kulak burun boğaz gibi yüksek riskli bölümlerin çalışanları, depresif bir ruh haline daha yatkın olabilir. Yapılan işle ilişkili olarak artan bulaş riski, BDE skorlarının artmasına ve depresif duygudurum bozukluğuna yol açabilir.

Anahtar sözcükler: COVID-19, depresyon, hemşireler, otolarengoloji, doktorlar.

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Coronavirus disease 2019 (COVID-19), which emerged in China in 2019, has become a global health problem.[1] The disease has spread to all parts of China, and the World Health Organization (WHO) declared the COVID-19 pandemic a public health emergency.[2] Symptoms are tremor, cough, nasal flow, sore throat, respiratory disorder, myalgia, nausea, vomiting, and diarrhea; however, it is not pathognomonic to the disease.[3] In severe cases, pneumonia, severe respiratory failure, renal failure, and death may occur.[4] Coronavirus disease 2019, the new coronavirus infection, is transmitted by respiratory secretions as in other coronavirus infections. Droplets of respiratory secretion released from infected people spread to the environment while coughing, sneezing, laughing, and talking, and contact with the mucous membranes of healthy people can cause people to get sick.[5]

The first COVID-19 case in Turkey was detected on March 10th, 2020, and the first death due to the virus was reported on March 17th, 2020.[6] The COVID-19 pandemic can cause high levels of anxiety in healthcare workers due to the risk of disease transmission.[7]

Our aim in this study was to evaluate the mood of the employees of the ear-nose-throat (ENT) department with the Beck Depression Inventory (BDI) during the COVID-19 pandemic and determine the relationship between the mood and the quality and quantity of the work done.

PATIENTS AND METHODS

A total of 62 (24 males, 38 females; mean age: 34.3±1.1 years; range 24 to 52 years) healthcare workers of our ENT clinic, who have been actively handling COVID-19 patients since April 2020, were included in the study. Those in the study were classified into two separate categories as nurses (Group 1) and doctors (Group 2). Group 1 consisted of 33 (53.2%) nurses, and Group 2 consisted of 29 (46.8%) doctors. The doctors in Group 2 were divided according to their academic titles: 13 assistant doctors, 10 specialists, four associate professors, and two professors. The participants were assessed with a questionnaire by a clinical psychologist, and BDI was conducted to evaluate depressive mood in these individuals. The survey questions are shown in Table 1. Beck Depression Inventory score and severity were calculated separately (0-9 points: minimal depression; 10-16 points: mild depression; 17-29 points: moderate depression; 30-63 points severe depression). A written informed consent was obtained from each patient. The study protocol was approved by Adana City Training and Research Hospital Hospital Clinical Research

Table 1
Questionnaire for groups
What is your gender?
What is your age?
What is your marital status? (married-single)
Do you have children?
How is your family structure? (elementary family, extended family)
How many years have you been a health worker? (0-5 years, 5-10 years, 10 years and above)
Have you worked in the COVID-19 field?
Have you followed-up COVID-19 suspected patients?
Have you followed-up COVID-19 positive patients?
What is your occupation?
Do you have sufficient information about COVID-19?
What is your source of COVID-19 information?
Do you think you have taken adequate precautions against COVID-19?
Are you worried about getting COVID-19?
Are you worried about transmitting COVID-19 to family members?
What is your average weekly working hours?
BDI score
COVID-19: Coronavirus disease 2019; BDI: Beck Depression Inventory.

Table 2 Average hours worked per week								
Work time per week (h)	40	45	48	52	56	70	90	108
Healthcare workers (n)	24	2	10	2	4	2	12	6
h: Hours; hcw: Healthcare workers.								

Ethics Committee (Meeting number: 70, Decision number: 1131,11.18.2020). The study was conducted in accordance with the principles of the Declaration of Helsinki.

Statistical analysis

Statistical analysis was performed using the R version 3.6.0 software (TIBCO Software Inc., Palo Alto CA, USA). The descriptive statistics were expressed as mean ± standard deviation for continuous variables, while percentages and frequencies were used for categorical variables. The assumption of normality was tested by Shapiro-Wilk and Kolmogorov-Smirnov tests. Student t-test was used for independent and normally distributed variables. The Pearson correlation coefficient was used when examining the linear relationship between variables. Chi-square test was used in the analysis of categorical variables. A p value of <0.05 was considered statistically significant.

RESULTS

As a result of the questionnaire, it was determined that 38 participants were married, and 24 were single. While 34 participants had no children, 28 had children. Sixty participants had an elementary family (husband, wife, and children), whereas two participants had an extended family (elementary family + relatives). Thirty-six participants had 0 to 5 years of experience, while 26 had 10 years of experience or more. There were no participants with 5 to 10 years of experience. Experience ranged between 1 and 31 years, with a mean of 10.3±1.7 years. The average working hours per week ranged from 40 to 108 hours and are presented in Table 2.

All participants had managed and followed up COVID-19 positive patients. While 60 participants had followed up COVID-19 suspected patients, two had not. These two healthcare workers were in Group 1. While 32 participants thought that they had sufficient information on COVID-19, 30 participants thought that they did not have sufficient information. Of those who believed they did not have sufficient information, two were in Group 1, and 28 were in Group 2. Fourteen participants accepted the Ministry of Health, 20 accepted the clinical guides, six accepted social media, and 22 accepted scientific articles as a source for information on COVID-19 (Table 1). In Group 1, 11 participants (most common, 33.3%) accepted clinical guides, and 13 participants (most common, 44.8%) in Group 2 accepted scientific articles as a source of information. Thirty-four healthcare workers thought that they were not taking sufficient precautions against COVID-19, and 28 felt that they were taking adequate precautions. Eight of the participants in Group 1 and 20 in Group 2 believed that they were taking adequate precautions. While 60 participants were worried about getting COVID-19, two were not. One of these two healthcare workers was in Group 1, and the other one was in Group 2. All participants had concerns about transmitting COVID-19 to family members.

Beck Depression Inventory scores ranged from 0 to 32, with a mean of 10.6±0.7. According to the BDI score, 32 participants had minimal depression, 16 had mild depression, 12 had moderate depression, and two had severe depression. Those with severe depression were in Group 2 (Table 3).

Table 3 Groups and BDI violence				
	Minimal depression	Mild depression	Moderate depression	Severe depression
Groups	hcw	hcw	hcw	hcw
Group 1	20	8	5	0
Group 2	12	8	7	2
BDI: Beck Depression Inventory; hcw: Healthcare workers.				

There was no statistically significant difference between the groups in terms of following up patients with suspected COVID-19 (p=0.494). A statistically significant difference was found between the groups regarding having sufficient knowledge about COVID-19, and the healthcare workers in Group 2 believed that they did not have sufficient information (p=0.002). There was no statistically significant difference between the groups in terms of information source about COVID-19 (p=0.477). A statistically significant difference was observed between the groups concerning their views on the precautions taken against COVID-19, and Group 2 was more of the opinion that they were not taking adequate precautions (p=0.001). There was no statistically significant difference between the groups in terms of BDI severity, age, and BDI score (p=0.252, p=0.137, p=0.053, respectively). The mean BDI score was 8.6±0.8 in Group 1 and 12.9±1.1 in Group 2.

A statistically significant correlation between age and BDI score was detected. It was observed that the BDI scores of the healthcare workers increase as their age increases (p<0.05). There was a statistically significant relationship between work experience and weekly average working hours. It was observed that the higher the work experience, the shorter the weekly average working time (p<0.01). A statistically significant association was found between the weekly working hours and the BDI score; the lower the working hours, the higher the BDI score (p<0.05). There was a statistically significant correlation between work experience and the BDI score. It was observed that as the work experience increased, the BDI score also increased (p<0.05). There was no statistically significant relationship between sex, having children, family structure, marital status, and BDI severity (p=0.059, p=0.156, p=0.132, p=0.075, respectively).

DISCUSSION

The world is focused on the global pandemic, and almost every country is affected by this event. According to the information received from official authorities, the first COVID-19 case in Turkey was reported on March 10, and the first death due to COVID-19 was reported on March 17.[8]

The COVID-19 pandemic caused psychological problems in the societies of China and other affected countries.[9,10] In one of the pioneering studies that identified the psychological problems of Chinese society, 52,730 people were surveyed. Of the individuals who participated in the survey, 35% stated that they had psychological problems.[11] In another study,

53.8% of the general population of China defined the psychological impact of the pandemic as moderate or severe.[12] After the start of the COVID-19 pandemic, the working hours of many healthcare workers were extended, and the death rate also increased. Thus, the number of patients examined daily and the time spent with each patient increased. All healthcare professionals are at risk of contamination with COVID-19.[4] A meta-analysis including 33,062 participants found that the majority of healthcare workers experienced significant anxiety, depression, and insomnia during the COVID-19 pandemic.[13]

In the study of Ustun,[6] in which participants from all regions of Turkey have participated, the average depression scores of the participants were mild. Of the participants, 47% showed minimal depression symptoms, 25.7% mild depression symptoms, 22.3% moderate depression symptoms, and 5% severe depression symptoms. In a study conducted in Turkey with 270 individuals, including doctors, nurses, and other assistant healthcare professionals, the mean BDI score was demonstrated to be 10.35±8.1.1.[7] In some studies, the BDI score in females has been found to be higher than in males during and before the COVID-19 pandemic.[7,14] Zhang et al.[15] compared doctors and nurses (medical healthcare workers) with other workers (non-medical healthcare workers) in their study. It was determined that medical health workers were depressed with a statistically significantly higher prevalence than other workers (p=0.04). In the same study, being female and having organic diseases was statistically significantly associated with a higher prevalence of depression in medical healthcare workers. In non-medical healthcare workers, living with family has significantly increased depression prevalence. In our study, the sex and family structure did not have a statistically significant relationship with the severity of BDI. In our study, the mean BDI score was 10.6±0.7, and the BDI severity of healthcare workers was minimal, mild, moderate, and severe in 51.6%, 25.8%, 19.4%, and 3.2% of participants, respectively. In the study of Yıldırım et al.,[7] there was no statistically significant difference in BDI between occupational groups (p=0.467). Although we did not find a statistically significant difference between the groups in terms of BDI score and severity, the difference in the mean BDI score between the groups was significant. In our study, the mean BDI score in Group 2 was higher. This might be since Group 2 performed interventions on COVID-19 patients with a high risk of contamination, such as intubation, tracheotomy, swab sampling, otorhinolaryngological endoscopic examination, and rhinological, intraoral, and laryngological surgical procedures, where there is contact with secretions.

Beck Depression Inventory scores of married individuals were generally found to be lower. In their study, Yıldırım et al.[7] found that anxiety and BDI scores were statistically significantly higher in those whose marital status was divorced or widowed compared to those who were married and single. Although they found the mean BDI score higher in those who did not have children, they could not detect a statistically significant difference. Lai et al.[16] stated in their study that females and nurses working due to COVID-19 in China might have psychological problems due to their work in the front-line. In our study, no significant relationship was found between the severity of BDI and sex, having children, family structure, and marital status.

In conclusion, employees of high-risk departments such as ENT may be more prone to a depressed mood. The increased risk of contamination in correlation with the work done can lead to increased BDI scores and depressive mood disorder. As the age and work experience increase, so does the thought of being contaminated due to COVID-19, which can affect the mood of ENT employees.

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