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### Determining the level and causes of anxiety related to pandemic of healthcare professionals working in the emergency department

Healthcare workers have been struggling with the disease, and taking serious risk while doing so. Anxiety can reduce both the work performance and the life quality of physicians, nurses and health personnel, as well as impair their health [1].

We aimed to measure the anxiety level of all personnel working in the emergency services with different levels of intensities during the pandemic, and to understand the causes of anxiety related to COVID-19.

Our study is a survey study conducted with 139 healthcare workers in university hospitals, where the intensity of covid cases is different, prospectively, between May 1, 2020 and July 1, 2020.

Age, gender, marital status, number of children, education level, occupation, term of employment, chronic disease, smoking, drug use, living with people over 65 years of age and people with chronic diseases, direct contact with patients, the fear of contracting COVID-19 in the hospital, the availability of the protective equipment and the confidence in the equipment, the fear of succumbing to the disease, the fear of not being able to see their families, the fear of transmitting COVID-19 to their families, patients and colleagues, and the fear of self-care in quarantine were questioned. Beck anxiety scale was used to determine the level of anxiety [2].

It was conducted with the help of statistical software SPSS 23.0 for Windows® (IBM Inc. Chicago, IL, USA). Results were considered significant at  $p < 0.05$ , with a 95% confidence interval.

136 hospital workers were included in the study. Demographic characteristics of the participants are provided in Table 1. Anxiety levels determined in the participants were analyzed and it was found that 48.5% had no anxiety (0–7 points), 27.9% had mild (8–15), 15.4% had moderate (16–25), and 8.1% had severe anxiety (>26 points). Beck anxiety levels were found that female workers had higher levels of anxiety. Again, the relationship between anxiety levels according to marital status was examined and a statistically significant relationship was found. In the Post Hoc analysis test, it was found that the other group (divorced, widowed, etc.) had a statistically significantly higher levels of anxiety compared to the married participants ( $p = 0.02$ ). Again, the relationship between education status and anxiety levels was examined and a statistically significant relationship was found. In the Post Hoc analysis test, it was found that high school graduates had statistically significantly lower levels of anxiety compared to students with bachelor's and master's degrees ( $p_{\text{Bachelor's}} = 0.02$  ve  $p_{\text{Master's}} = 0.02$ , respectively). No statistically significant relationship was found between the other groups. (Table 1).

Participants were asked questions about working conditions and COVID-19. The presence of anxiety about them is given in Table 2.

Work-related tension and exposure to high stress can cause workers to experience physical, behavioral, emotional and psychological problems [3].

Higher-than-normal levels of anxiety were found among healthcare workers. [4]. Emergency service workers were also found to be more

anxious than those working in clinical services [5]. In our study, it was determined that 27.9% of the participants had mild, 15.4% had moderate, and 8.1% had severe anxiety levels. Various levels of anxiety have been reported in studies during the COVID-19 period [5–7]. This suggests that anxiety levels vary according to hospital intensities and regions.

Study on healthcare workers, higher anxiety levels are observed in women than in men as in our study [8].

Physicians, were found to be 1.6 times more likely to experience psychiatric symptoms compared to nurses [9]. Nurses were found to be more anxious than other healthcare personnel [10,11]. In another study carried out in Turkey, healthcare workers' scores from the Depression, Anxiety and Stress Scale did not differ significantly according to occupations [8]. In our study, although the doctors had higher anxiety scores than the nurses, statistical significance could not be found. These different results may due to the difference in the number of male nurses.

The anxiety scores, psychiatric symptoms of single healthcare workers was found to be higher than that of married healthcare workers [8,9]. In another study was determined that the traumatization status of married or divorced people was higher than those of single people [12]. In our study, the relationship between anxiety levels according to marital status was examined and the results showed that the anxiety level of divorced and widowed participants was statistically significantly higher than that of single and married participants. Our finding was different from the studies in the literature. The reason is that most of the single people in our country continue to live with their parents and therefore family support continues. For this reason, we think that they may have similar fears and anxieties as those who are married.

In a study was reported that the risk perception, anxiety levels and fear of being infected of healthcare workers were higher than the general population and they have a high level of fear and anxiety of transmitting the virus to their family members during the COVID-19 pandemic [12–16]. In our study no difference was found. Most of the healthcare workers in our country stayed in a separate place from their families during the pandemic. These periods undoubtedly lead to a significant decrease in the emotional and social support provided by the family.

Direct contact with the patient was a risk factor and was associated with increased stress and anxiety among healthcare personnel [17]. In our study also, anxiety level was found to be high in employees who thought that protective equipment did not protect them.

While we were measuring the anxiety levels other situations they experienced during that period may have affected our measurements of their anxiety. The fact that diagnostic psychiatric interviews were not conducted with the patients whose anxiety levels were measured is also one of the limitations of our study.

We believe that determining the groups with high anxiety rates within all healthcare workers through regular tests, increasing social and psychological support in these groups, and eliminating the fear of lack of equipment will reduce the level of anxiety in workers.

**Table 1**

The demographics of the participants and the evaluation of their anxiety levels accordingly.

Parameter	Subparameter	n (%)	Beck anxiety level mean $\pm$ SD	p
Province	İzmir	95 (69.9)	9.67 $\pm$ 9.39	0.59 <sup>a</sup>
	Muğla	41 (30.1)	10.61 $\pm$ 9.63	
Gender	Female	60 (44.1)	11.8 $\pm$ 10.43	<b>0.04<sup>a</sup></b>
	Male	76 (55.9)	8.50 $\pm$ 8.36	
Marital Status	Single	50 (36.8)	10.94 $\pm$ 9.78	<b>0.04<sup>b</sup></b>
	Married	77 (56.6)	8.48 $\pm$ 8.33	
	Other	9 (6.6)	17.22 $\pm$ 13.13	
Educational Status	Primary School	2 (1.5)	4.50 $\pm$ 6.36	<b>0.01<sup>b</sup></b>
	High School	22 (16.2)	4.27 $\pm$ 4.70	
	Bachelor's Degree	60 (44.1)	11.36 $\pm$ 8.85	
	Master's Degree	37 (27.2)	11.75 $\pm$ 11.94	
	PhD	15 (11.0)	8.93 $\pm$ 7.27	
Profession	Doctor	63 (46.3)	10.81 $\pm$ 9.84	0.18 <sup>b</sup>
	Nurse	29 (21.3)	9.65 $\pm$ 9.73	
	Medical Secretary	20 (14.7)	11.60 $\pm$ 9.46	
	Emergency medical technician	3 (2.2)	17.00 $\pm$ 16.52	
	Security Officer	17 (12.5)	5.52 $\pm$ 4.58	
	Cleaning Staff	4 (2.9)	4.00 $\pm$ 4.69	
Term of employment	0–1 year	9 (6.6)	11.00 $\pm$ 10.36	0.34 <sup>b</sup>
	1–5 years	54 (39.7)	11.37 $\pm$ 10.38	
	6–10 years	24 (17.6)	10.75 $\pm$ 10.17	
	11–15 years	20 (14.7)	7.30 $\pm$ 7.58	
	16–20 years	19 (14.0)	6.73 $\pm$ 5.72	
Chronic Disease History	>20 years	10 (7.4)	10.90 $\pm$ 10.11	0.99 <sup>a</sup>
	Absent	119 (87.5)	9.95 $\pm$ 9.59	
Chronic Drug Use History	Present	17 (12.5)	9.94 $\pm$ 8.54	0.57 <sup>a</sup>
	Absent	107 (78.7)	9.72 $\pm$ 9.73	
Smoking	Present	29 (21.3)	10.82 $\pm$ 8.38	0.39 <sup>a</sup>
	Absent	69 (50.7)	10.63 $\pm$ 9.62	
History of living with people over 65 years of age	Present	67 (49.3)	9.25 $\pm$ 9.26	0.41 <sup>a</sup>
	Absent	114 (83.8)	10.24 $\pm$ 9.81	
Living with individuals with histories of chronic diseases	Present	22 (16.2)	8.45 $\pm$ 7.22	0.45 <sup>a</sup>
	Absent	100 (73.5)	9.59 $\pm$ 9.41	
Anxiety Level	Present	36 (26.5)	10.97 $\pm$ 9.57	
	Absent	66 (48.5)		
	Mild	38 (27.9)		
	Moderate	21 (15.4)		
	Severe	11 (8.1)		

<sup>a</sup> Independent T-Test.<sup>b</sup> Kruskal Wallis Test.**Table 2**

Anxiety levels of the participants in situations related to the COVID-19 pandemic.

Parameter	Subparameter	n (%)	BECK anxiety scale mean	p <sup>a</sup>
Risk of direct contact with patients	Absent	17 (12.5)	4.70 $\pm$ 6.81	<b>0.01</b>
	Present	119 (87.5)	10.70 $\pm$ 9.54	
Fear of contracting COVID-19 in the hospital	Absent	33 (24.3)	5.54 $\pm$ 6.65	<b>0.002</b>
	Present	103 (75.7)	11.36 $\pm$ 9.78	
Fear of not being protected by the protective equipment	Absent	43 (31.6)	7.27 $\pm$ 8.70	<b>0.02</b>
	Present	93 (68.4)	11.19 $\pm$ 9.55	
Fear of not being able to access the appropriate protective equipment.	Absent	66 (48.5)	11.57 $\pm$ 10.52	<b>0.03</b>
	Present	70 (51.5)	8.24 $\pm$ 7.86	
Fear of succumbing to the COVID-19 disease	Absent	116 (85.3)	8.79 $\pm$ 8.45	<b>&lt;0.001</b>
	Present	20 (14.7)	16.70 $\pm$ 12.03	
Fear of not being able to see their family	Absent	14 (10.3)	7.21 $\pm$ 8.04	0.25
	Present	122 (89.7)	10.27 $\pm$ 9.56	
Fear of transmitting COVID-19 to their families	Absent	9 (6.6)	5.0 $\pm$ 6.78	0.10
	Present	127 (93.4)	10.30 $\pm$ 9.52	
Fear of transmitting COVID-19 to patients and colleagues	Absent	25 (18.4)	7.12 $\pm$ 7.95	0.09
	Present	111 (81.6)	10.59 $\pm$ 9.66	
Fear of not being able to fulfill personal and family needs in case of contracting COVID-19	Absent	54 (39.7)	5.98 $\pm$ 6.01	<b>&lt;0.001</b>
	Present	82 (60.3)	12.57 $\pm$ 10.36	

<sup>a</sup> Independent T-Test.

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