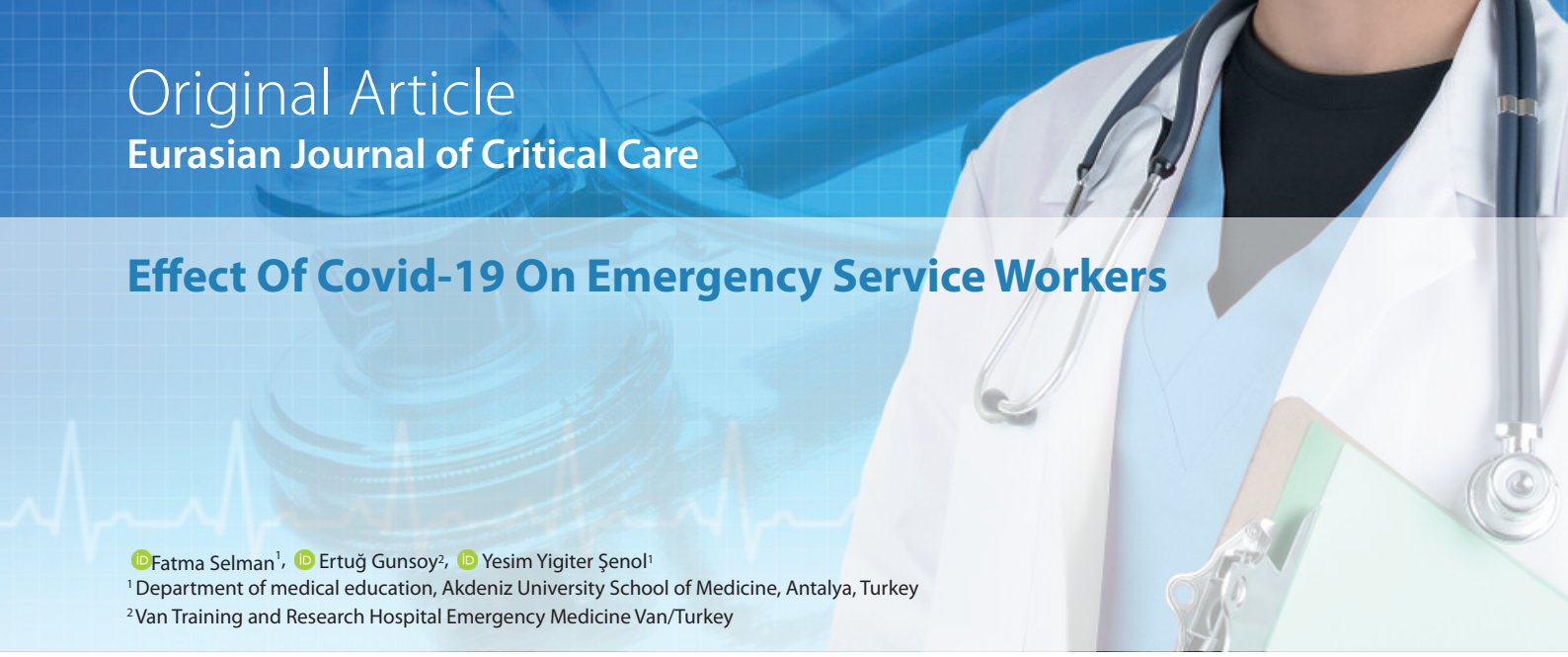
Original Article
Eurasian Journal of Critical Care



Effect Of Covid-19 On Emergency Service Workers

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Abstract

Introduction: Healthcare professionals have been of the fight against the pandemic, continued for more than a year. The anxiety levels of healthcare workers due to increased workload, social isolation, fear of catching COVID-19, etc. have increased significantly. The aim of this study is to determine the anxiety levels of emergency service workers who are always at the forefront of the fighting against the pandemic in Turkey.

Methods: A questionnaire containing demographic information and the questions of 2 different scales (generalized anxiety disorder-7 scale, coronavirus anxiety scale), whose validation and reliability were performed in Turkey, was delivered via the web to the emergency room workers.

Results: Personnel working in the emergency service of a tertiary state hospital, 74% were reached. On the generalized anxiety scale, 53% of the participants received a score of 11 or above (severe anxiety). While the mean values of the generalized anxiety scale in the income and education groups showed a statistically significant correlation, the anxiety mean scores of those with less than 2 years of employment were found to be statistically significantly lower, and the anxiety mean scores of those who had covid-19 during the pandemic were found to be statistically significantly higher. This was found to be related to those with high anxiety and covid-related anxiety scores not wanting to work in the emergency service.

Conclusion: As a result of the study, it was revealed emergency service workers have a high level of anxiety originating from pandemics, regardless of their seniority, age, and gender.

Keywords: Emergency, Coronavirus (COVİD-19), Pandemic, Generalized Anxiety Disorder-7 (GAD-7), Coronavirus Anxiety Scale Short Form (CAS)

Introduction

Coronavirus disease 2019 (Covid-19) emerged in December 2019 as a disease that affects the whole body, especially the lungs, caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)[1]. The World Health Organization (WHO) declared Covid-19 a public health problem of international concern on January 30, 2020[2]. On March 11, 2020, the first case was seen in Turkey[3]. After these processes, it has caused panic due to the rapid spread of the virus and the severe course of the disease, in the world and Turkey[4].

Both the poor prognosis of the disease and the panic in the public increased the admissions to the health institutions, the need for health services, and health expenses such as hospital beds, mechanical ventilators, and intensive care beds. When the obscurities of Covid-19 disease, the burden of disease, the panic it created, and the inability to meet the health needs came together, they have caused the healthcare workers to have too much burden, and the prolongation of this process has caused burnout and ongoing anxiety[5].

Many studies on the cause of this anxiety in healthcare professionals have revealed the following: lack of appropriate personal protective equipment, increased workload, not being able to access sufficient information and inadequate training especially at the beginning of the covid-19 disease, delay in diagnosis and treatment in case of exposure to infection, and therefore, the thought of spreading the disease, the inability to spend quality time with his/her family and his/her environment due to both the workload and the fear of carrying the infection to his/her family, and the symptoms of burnout due to the uncertainty of the process[6,7,8].

The aim of our study, considering all partners around them (hospital, home, family, colleagues, in-house training, media, internet) during the covid-19 pandemic, is to reveal how the psychological states of all staff (doctor, nurse, medical secretary, cleaning or auxiliary staff, etc.) in the emergency service, who feels most of these problems and

Corresponding Author: Fatma Selman **e-mail:** fselman@biruni.edu.tr
Received: 16.10.2022 • **Revision:** 18.12.2022 • **Accepted:** 19.12.2022
DOI: 10.55994/ejcc.1190140

Cite this article as: Selman F, Gunsoy E, Senol YY. Taslidere B, Sonmez E, Karatas A, Sakin B, Kazancioglu R. Can Routine blood tests be used to predict the prognosis of covid-19 patients using antithrombotic drugs. Eurasian Journal of Critical Care. 2022;4(3): 84-90

concerns and who works at the front line in Turkey, are affected.

Material and Method

2.1 Ethical approval

Van TRH Clinical Research Ethics Committee approved this study (protocol number: 2021/03)

2.2. Sampling and data collection

The study is a cross-sectional study conducted between the dates of 02.01.2021 and 04.01.2021 among the personnel working in the emergency service of the tertiary hospital. In the sample selection, it was aimed to reach all healthcare professionals working in the Emergency Service. In the center where the study was conducted, the number of patients entering the emergency room daily is approximately 1500. The total number of staff working in the hospital emergency service is 135 people. Among the workers, 100 (74%) healthcare workers were reached.

After obtaining ethical approval for the study, an online questionnaire consisting of 27 questions was prepared to collect data via Google Forms between 02.01.2021 and 04.01.2021. The questionnaire was initially applied to 18 health employee from Akdeniz University Faculty of Medicine emergency service personnel who were health professionals and were not, and it was rearranged according to their feedback. The questionnaire link was sent to all workers via e-mail. The questionnaire time was approximately 3-5 minutes.

The data collected included the sociodemographic characteristics of the participants, the Coronavirus Anxiety Scale Short Form and the Generalized Anxiety Disorder-7 (GAD-7) scale.

Coronavirus Anxiety Scale Short Form (CAS): A brief mental health scan, CAS, was developed by Lee to identify possible causes of dysfunctional anxiety associated with the COVID-19 crisis[9]. The scale, whose validity and reliability study was conducted by Biçer et al., consists of 5 questions and one dimension, and the Cronbach Alpha reliability coefficient of the scale was calculated as 0.832[10]. CAS is a 5-point Likert scale. Scoring of the scale was carried out as "0" "never", "1" "Rare, less than a day or two", "2" "a few days", "3" "more than 7 days" and "4" "almost every day in the last two weeks".

Generalized Anxiety Disorder-7 (GAD-7): The GAD-7 scale, developed by Spitzer et al., 11according to DSM-IV-TR criteria, was translated into Turkish by Konkan et al. and its validity and reliability study was conducted. It is a short self-report scale that evaluates generalized anxiety disorder. It is a 7-item four-point Likert (0=none, 1=many days, 2=more than half of the days, 3=almost every day) pen-and-paper type scale, which evaluates the experiences asked in the scale items in the last 2 weeks. The total scores obtained from the scale are 5, 10, and 15 cut-off points for mild, moderate, and severe anxiety, respectively. The total score Cronbach alpha value of the GAD-7 test was found to be 0.852[12].

In the analyses, specialist physicians, general practitioners, nurses were classified as health professionals occupational group 1, and medical secretary, assistant staff (staff who transport patients to any location, help patients with their basic needs when they want them), and cleaning staff were classified as health professionals occupational group 2, according to their duties in the emergency service. In addition, considering the education they received, they were classified into 2 as associate and postgraduate degree graduates and high school graduates and below. According to the duration of their employment any hospital, those under 2 years are classified as for beginners, and those with 2 years or more as experienced personnel[13].

2.3.Statistical analysis.

IBM® SPSS® Statistics V21 software was used for statistical analysis of the data. After determining whether the data were parametric, the data were expressed as mean ± standard deviation (SD), median (minimum-maximum), and number (%). Kolmogorov-Smirnov test was used to evaluate the conformity of quantitative data distribution to normal distribution. The significance test of the difference between the two means and the ANOVA test was used in the analyzes. Mann-Whitney U test was used to analyze data that did not conform to normal distribution.

Results

The mean age of our participants was 33.7 (sd±6.92), with 70% male and 30% female. Those who have a working period of fewer than 3 years are 30%, those who have 3 years and over are 70%. Other demographic data of the participants are given in Table 1.

The distribution of Hamilton Anxiety Scores is presented in Table 2.

When the distribution of the scores given to the Hamilton anxiety scale was examined, the highest rate was in the group with 11 and above scores with 53%. A moderately significant correlation was found between the total anxiety score and the Covid scale score. (r = .476 p: 0.001)

The reliability of the scales is given in Table 3.

While the reliability coefficient of the anxiety scale was found to be 86.3%, this value was found to be 94.5% in the Covid scale.

The distribution of the mean values obtained from the scales by the variables is given in Table 4. While the Hamilton scale mean values showed a statistically significant correlation in income and education groups, a

Table 1: The demographic data of the participants

	Mean (SD)	N (%)	Range
Age	33.7(st +-6,92)		23-53
Gender			
Female		30	
Male		70	
Education status			
Primary school		2	
Secondary school		3	
High school		21	
Associate Degree		6	
Bachelor's degree		53	
Master		7	
PhD graduate		8	
Profession Group			
Health vocational high school		6	
Medical secretary		13	
Assistant staff		11	
Cleaning staff		9	
Nurse		32	
General Practitioner		17	
Emergency medicine specialist		11	
Income status			
Income less than expenses		43	
Income equal to expense		29	
Income more than expenses		28	

Table 2: Classification of the scores given to the Hamilton anxiety scale

score	**N**	**%**
5 and less	23	23.0
6-10	24	24,0
11 and above	53	53,0

Table 3: Distribution of Coronavirus Anxiety Scale (CAS) and Generalized Anxiety Disorder-7 (GAD-7)of the scales

	Number of questions	Cronbach alfa
Generalized Anxiety Disorder-7 (GAD-7)	7	86,3
Distribution of Coronavirus Anxiety Scale(CAS)	5	94,5

statistically significant correlation was observed between the occupational groups in the Covid scale.

When we look at the anxiety scores of the participants by age, the anxiety level of those under the age of 35 was lower than the others. However, no statistical significance was found. (P=0.09)

Table 4: Distribution of mean values of Coronavirus Anxiety Scale (CAS) and Generalized Anxiety Disorder-7 (GAD-7)

	GAD-7		CAS	
	Mean±SD	P	Mean±SD	P
Gender				
Male	10,98±7,01		2,11±3,89	
Female	12,40±6,47	.347	2,0±4,24	,896
Income status				
Income less than expenses	9,13±6,65		1,97±3,85	
Income equal to expenses	12,62±5,32		1,10±2,05	
Income more than expenses	13,64±7,68	.012*	2,08±3,97	,122
Education				
High school and below	9,1±7,6		2,06±3,55	
Associate degree and above	12,73±5,98	.015	2,14±4,21	.923
Profession group				
1	13,21±6,54		,89±1,83	
2	11,35±6,06	.221	2,68±4,46	.020

Profession group 1; Medical secretary, assistant staff, cleaning staff, group 2; Health vocational high school, nurse, general practitioner, emergency medicine specialist

It is important to spend at least 2 years to fully fit an emergency service system, to be able to work as a full professional in the emergency service. For this reason, we evaluated those who worked less than 2 years as apprentice workers and those with more than 2 years as experienced workers. Of our participants, 30% were apprentice workers and 70% were experienced workers.

Among the participants, the anxiety mean scores of those with less than 2 years of employment and of those who want to work in emergency service were found to be statistically significantly lower, and the anxiety mean scores of those who had Covid-19 during the pandemic were found to be statistically significantly higher (Table 5).

It was revealed that approximately 65% of the participants received up-to-date information about the Covid-19 pandemic from the website of the Ministry of Health. It was seen that social media (56%) followed this. The sources used by the participants in our study to obtain up-to-date information about the covid-19 pandemic are given in Table 6.

To our question "If you were set free, would you like to work in the pandemic emergency service?", 53% have answered positively. The reasons for positive respondents are that they generally like to work in the emergency service and help people, that they are committed to their profession and duty, that they learn a lot in the emergency service during the pandemic, and that they think the risk of covid is the same everywhere. The reasons for those who respond negatively to this question were stated as the higher risk of getting covid-19 in the emergency department, inability to spend free and quality time with his/her family due to

Table 5: Coronavirus Anxiety Scale (CAS) and Generalized Anxiety Disorder-7 (GAD-7) survey results according to working time, catching COVID-19, and willingness to work in the Emergency department.

	N	GAD-7		CAS	
		Mean ±SD	P	**Median**(IQR)	P
Working time					
>= 2	70	12.34±6,72		0 (IQR 2.50)	
< 2	30	9.23±6,76	.037	0 (IQR 1,25)	.239
Catching COVID-19					
No	72	10.25±7,07	.006	0 (IQR 2,00)	
Yes	28	14.39±5,27		0 (IQR 7,50)	.193
Willingness to work in the Emergency department.					
No	47	14.40±6,01		1 (IQR 5,00)	
Yes	53	8.75±6,49	.001	0 (IQR 0,50)	.002

Table 6: Sources where participants get updated information on Covid-19

	N(%)
Articles and publications	45
Ministry of health website	65
Television	44
Social media	56
News web sites	40

fear of infecting his/her family and environment with the covid-19 disease, and that Covid-19 protection measures and protective equipment were not adequately provided in the emergency service and they were left alone in this regard, and that having fatigue in this long process.

Discussion

The fear caused by the Covid-19 uncertainty and intensive work since the first period of the pandemic has caused anxiety, burnout, insomnia, and fatigue in healthcare professionals who work with willingness and devotion. However, it is observed that these symptoms increase visibly with the prolongation of this period[14]. Many studies have been conducted to find out the reasons for this situation and find solutions. This study was planned and implemented due to a lack of studies in our country that identified these problems, particularly among emergency service workers. This study we conducted is one of the first studies in its field for our country. The results of the study show that the anxiety symptoms of emergency service workers are high.

Two types of scales were used in our study. The rate of participants who got a severe anxiety score (11 and above) according to the generalized anxiety scale-7 (GAD-7), which is one of them, is 53%. In the study conducted by Stojanov et al., the rate of those who got severe anxiety scores on the GAD-7 scale was 38%, while the rate of participants who got severe anxiety scores in the study of Rossi et al was 19.8%[15,16]. According to the study conducted by Rossi et al., the most important reason for it to be very high has been that they do it on all healthcare professionals who want to participate, and in our study, we only included emergency service workers[15]. The study of Stojanov et al. was conducted in healthcare institutions specially allocated for Covid-19. However, as their conditions are better than our hospital in terms of working conditions, workload, and patient density, in our study, there are many more healthcare workers with high anxiety scores[16]. The other coronavirus anxiety scale we used is newly created[17]. The lack of significance of the results is generally thought to be since the healthcare professionals who took part in our study are constantly in direct contact with Covid-19 positive patients, so they are less affected by news about the coronavirus included in the scale, etc.

The strengths of the study are reaching the vast majority of the workers in the emergency service where the study was conducted, the reliability tests performed well, the pilot study implementation beforehand, and the compatibility of open-ended question answers with other answers. In addition, the diversity of our participants' age, educational status, occupational group, receiving/not receiving health education, income status, etc. enabled our questionnaire to be evaluated from a broad perspective. When we looked at the anxiety scores with the responses we received from our participants, it was found that more than half of them showed severe anxiety symptoms. These results show similar characteristics to studies conducted with healthcare workers who encountered COVID-19. Similar to other studies, the risk of getting Covid-19, social isolation, intense work pace, and increased responsibilities are among the reasons for this situation[18,19,20].

It has been observed in many studies that frontline healthcare workers have more intense anxiety than other healthcare workers and non-healthcare workers[21,22,23]. This study was conducted in busy emergency service in a neighboring province, which is the regional hospital position in the application center in the surrounding provinces and districts, the average number of daily patients reaches 500-1000, where there is no system to distinguish Covid-19 patients in practice. The working of our participants at the forefront in the emergency service, having an intense working environment, contact with a patient who is constantly infected with Covid-19, and fear of getting an infection may be the reasons why their anxiety scores are higher than other studies.

When the factors affecting anxiety results are examined, there was no difference between gender and occupational groups in terms of anxiety. This result does not support other studies[5,20]. The reasons for this difference may originate from the fact that the emergency service workers are generally male due to the cultural difference in the region where the hospital is located and therefore there are too many male participants, that the job descriptions in the occupational groups in the emergency service where the study is conducted are not clearly defined and the emergency room conditions include sudden events, so everyone, regardless of gender, is doing similar jobs, that all participants are emergency service workers and therefore they are constantly exposed to the same situations in the same indoor environment.

When the anxiety levels of participants with various educational backgrounds were compared, it was discovered that those who graduated from undergraduate and higher education levels had higher anxiety levels. Similarly, the study conducted in Wuhan draws attention to the findings. 24 As the education level increases, it may be important to have more information about the consequences, mortality, prevention methods, and treatments of viral infections, higher awareness of the precautions and treatments not taken may also be a factor as well. The reason for the increase in anxiety with the increase in income is thought to be related to the increase in the level of income as the level of education increases.

As the working times of the participants increased, their anxiety levels increased. What is expected is a decrease in the amount of anxiety since they are more experienced. However, the anxiety caused by a lack of adequate in-service training and the exhaustion of personnel with more working years due to the difficulties of emergency service conditions were at higher levels. Anxiety by age was not significant and decreased with age. In other studies, a clear result by age and years of seniority could not be reached. While some studies show that anxiety increased with age, some studies have found the opposite[25,26].

Because of the fact that approximately 1500 patients enter the emergency room in which we conducted the study, it is included in the crowded emergency services group.27 Caring for so many patients causes healthcare professionals to have difficulty in taking covid-19 measures to protect themselves. This situation also increases the anxiety in the emergency department.

It is not possible for healthcare professionals to care for patients efficiently with a high level of anxiety. For this reason, it is necessary to reduce the anxiety levels of health workers. In order to reduce anxiety, the number of emergency service applications should be reduced, better triage should be performed, and they should be able to work under conditions where covid-19 measures can be taken.

We found that people who had a Covid-19 infection once had a high level of anxiety. We thought that the reasons for this were: having the disease again; the fear of experiencing the traumas caused by the events such as shortness of breath and fear of death in patients they have encountered in the hospital; fear of infecting family or co-workers, and likewise the fear of seeing them getting worse. It has been clearly shown in the study of Arpacıoğlu et al. that the fear of secondary traumatization increases anxiety too much. 28 In addition, Jiang Du et al. have also emphasized in their study that the thought of his family, himself, and his colleagues being caught with covid-19 infection significantly increased the perception in people[24].

The answers to open-ended questions support our other findings, and the risk of transmitting the COVID-19 during the pandemic period, social isolation due to the fear of infecting the family and the environment, lack of personal protective equipment, extra workload added to emergency working conditions, and increased responsibilities have been stated as increasing factors. Concerning these situations, the majority of the participants stated that they do not want to work in emergency service with their own free will during the pandemic period.

More than half of our participants said that they use the ministry of health website and social media to get up-to-date information on Covid-19. It is thought that they follow the Ministry of Health website as they give their daily number of cases every day and social media for current news. Nekliudov et al. and Clavier et al. have shown in their studies that the use of social media significantly increased anxiety in the Covid-19 period[29,30]. Our participants may also be affected by this situation.

Our study has some limitations; it is not known whether the participants had psychiatric disorders before Covid-19, the correlation of this anxiety state with continuous long-term exposure could not be examined because it was a cross-sectional study, and the effect of geographical differences could not be evaluated because it was a single center study.

In future studies, emergency service workers can be examined on their anxiety states in their exposure to long-term cases of covid-19 and infection.

Conclusion

As a result of the study, it was revealed that emergency service workers have a high level of anxiety originating from pandemics, regardless of their seniority, age, and gender. To adjust this situation, the working conditions, hospital conditions, and social conditions of emergency service workers need to be improved.

Author Contributions

FS: Writing – original draft, Conceptualization (equal), Data curation (lead), Formal analysis
EG: Data curation, Formal analysis
YŞ: Writing – review & editing, Conceptualization (equal), Formal analysis (lead)

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