

Investigation of COVID-19 Fear and Burnout in General Surgery Assistants Genel Cerrahi Asistanlarının COVID-19 Korkusu ve Tükenmişliklerinin İncelenmesi

¹Murat Can MOLLAOĞLU, ¹Kürşat KARADAYI

¹İstinye University Gaziosmanpaşa Hospital General Surgery Clinic, İstanbul, Türkiye

Murat Can Mollaoğlu: <https://orcid.org/0000-0002-7623-081X>

Kürşat Karadayı: <https://orcid.org/0000-0001-7986-4984>

ABSTRACT

Objective: The study aims to examine the burnout of general surgery assistants due to fear of COVID-19.

Materials and Methods: The study, which had a descriptive and cross-sectional design, was conducted with 103 general surgery residents. Data: It was obtained with the Personal Information Form, COVID-19 Fear Scale and Maslach Burnout Scale. The data were evaluated in the SPSS program.

Results: The average score of the residents on the Fear of COVID-19 Scale was above the middle score. While depersonalization and emotional exhaustion, which are the sub-dimensions of the Maslach Burnout Scale, were experienced at moderate levels, it was determined that there was a significant decrease in the personal accomplishment dimension. It has been determined that assistants with a high fear of COVID-19 experience high levels of emotional exhaustion and high levels of depersonalization, as well as a feeling of decreased personal accomplishment.

Conclusions: It is important to consider general surgery assistants, who are at high risk of contracting the COVID-19 virus, as risky groups during epidemic periods and to implement necessary protective measures and crisis management policies, including psychological support in reducing burnout syndrome.

Keywords: Burnout, fear of COVID-19, pandemic

ÖZ

Amaç: Çalışmanın amacı, genel cerrahi asistanlarının COVID-19 korkusu ile tükenmişliklerinin incelenmesidir.

Materyal ve Metot: Tanımlayıcı ve kesitsel tasarımda olan çalışma 103 genel cerrahi asistanı ile yapılmıştır. Veriler; kişisel Bilgi Formu, COVID-19 Korku Ölçeği ve Maslach Tükenmişlik Ölçeği ile elde edilmiştir. Veriler SPSS programında değerlendirilmiştir.

Bulgular: Asistanların COVID-19 Korkusu Ölçeği puan ortalaması orta puanın üzerinde bulunmuştur. Maslach Tükenmişlik Ölçeği'nin alt boyutları olan duyarsızlaşma ve duygusal tükenme orta düzeyde yaşanırken, kişisel başarı boyutunda ise önemli derecede düşüş olduğu belirlenmiştir. COVID-19 korkusu yüksek olan asistanlarda yüksek düzeyde duygusal tükenme yaşandığı ve yüksek düzeyde duyarsızlaşma geliştiği, aynı zamanda kişisel başarıda azalma hissi yaşandığı saptanmıştır.

Sonuç: COVID-19 virüsünün bulaşma riski yüksek olan genel cerrahi asistanlarının salgın dönemlerinde riskli gruplar olarak ele alınması, gerekli koruyucu önlemlerin ve psikolojik desteği kapsayan kriz yönetim politikalarının uygulamaya geçirilmesi tükenme sendromunun azaltılmasında önemlidir.

Anahtar Kelimeler: COVID-19 korkusu, pandemi, tükenme

Sorumlu Yazar / Corresponding Author:

Murat Can Mollaoğlu
İstinye University Gaziosmanpaşa Hospital General Surgery Clinic,
İstanbul, Türkiye
Tel: +90 507 2402139
E-mail: mollaoglumuratcan@gmail.com

Yayın Bilgisi / Article Info:

Gönderi Tarihi/ Received: 19/03/2024
Kabul Tarihi/ Accepted: 24/05/2024
Online Yayın Tarihi/ Published: 16/06/2024

Atf / Cited: Mollaoğlu MC and Karadayı K. Investigation of COVID-19 Fear and Burnout in General Surgery Assistants. *Online Türk Sağlık Bilimleri Dergisi* 2024;9(2): 176-182. doi: 10.26453/otjhs.1455690

INTRODUCTION

The death of many healthcare workers due to COVID-19 causes intense anxiety, stress and fear in the surgical team at high risk of contamination, as well as in all healthcare workers fighting the pandemic on the front lines.¹⁻³ Close contact with the surgical team is inevitable during the treatment of COVID-19 patients.^{4,5} Surgical procedures such as tracheal intubation, mask ventilation, extubation, cough reflex, orotracheal secretions, and laparoscopic smoke increase the risk of COVID-19 infection transmission due to aerosol production.^{6,7} In addition, the admission of asymptomatic patients to both elective and emergency operations increases the risk of COVID-19 infection to surgical personnel. It can expose people to the risk of contamination.^{5,8} Surgical staff working for long periods under these challenging conditions may trigger the team's fear of potential COVID-19 infection. The fear of being infected and infecting others may challenge the ability of assistants, who are young and active members of the surgical team, to cope with the epidemic-related crisis that may be caused by COVID-19 and similar viruses.^{4,6,7}

General surgery assistants, who are among healthcare professionals with intense workloads, continue their work by consuming physical, emotional and mental energy. In crisis situations caused by epidemic diseases, factors such as extended working hours, excessive workload, and dangerous working environment can cause assistants to spend excessive energy and become an important risk factor for burnout syndrome.^{8,9} While the increased workload, especially with the crisis arising from the COVID-19 epidemic, increases the burnout levels of general surgery assistants, it can also make them vulnerable in psychological aspects such as fear, stress, and anxiety.⁸⁻¹⁰

Therefore, in crisis situations such as the COVID-19 epidemic, it is very important to understand the mechanisms that trigger fear and burnout on the faces of all healthcare professionals, especially hospital staff with little work experience, such as general surgery assistants. Thus, the effects of the crisis can be reduced or eliminated by providing the necessary support. This study draws attention to the fear and burnout that general surgery assistants experience and/or may experience in the ongoing COVID-19 epidemic and similar situations that may develop in the future. In this context, the study was conducted to examine general surgery assistants' fear and burnout of COVID-19.

MATERIALS AND METHODS

Ethical Approval: Ethical approval was received for this study from a university's noninvasive ethics

committee. (Date: 14.04.2021, decision no: 2021-04/36). The rules of the Declaration of Helsinki were followed to carry out this study.

Study Design: The study, which aimed to examine the fear of COVID-19 and burnout in general surgery residents, was carried out in a descriptive and cross-sectionally nature.

Setting and Sample: The data collected with the help of an e-survey prepared digitally with the Google form was obtained between May and July 2021. Telephone numbers of general surgery assistants actively working throughout Türkiye were obtained. Thus, the Google form was sent to these assistants, and the data and answers of 103 assistants who participated in the research voluntarily were evaluated.

Data Collection Tools: Personal Information Form: This form includes general surgery assistants' characteristics (age, gender, marital status...) and characteristics explaining their working status (the region they work in, the institution they work in, whether the institution they work in is a pandemic hospital, whether they are assistants or not, whether he was diagnosed with Covid-19, whether he was assigned to another clinic during the pandemic period, working time in the pandemic unit, etc.) was questioned.

COVID-19 Fear Scale: It was developed by Ahorsu et al.¹¹ to measure individuals' fear levels caused by COVID-19. Validity and reliability in Turkish were determined by Satici et al. (2020)¹². The scale has a single-factor structure and consists of seven items on a five-point Likert type (1 = Strongly disagree; 5 = Strongly agree). Each question is evaluated as a minimum of 1 and a maximum of 5 points. The total score is calculated by adding the scores of 7 items (7 -35 points). The internal consistency of the scale was found to be 0.82, and the test-retest reliability was 0.72. A high score on the scale indicates that the fear of COVID-19 is high.

Maslach Burnout Scale (MBI): It was developed by Maslach, Leiter, and Jackson.¹³ It is a scale that is widely used in the evaluation of burnout syndrome, is scored between 0-6 and contains 22 items. MBI has three sub-dimensions: emotional exhaustion, depersonalization and personal accomplishment.

The emotional exhaustion subscale consists of 9 questions, and the highest score is 54. The depersonalization subscale consists of 5 questions, and the highest score that can be obtained is 30. The feeling of decreased personal accomplishment is evaluated with 8 questions. The highest score that can be obtained is 48. It is scored between "0-never" and "6-always". A high score in the emotional exhaustion and depersonalization subscales and a low score in the sense of diminished personal accomplishment

subscale indicate burnout.¹³ The validity study for Türkiye was conducted by Ergin.¹⁴

Statistical Analysis: The data were examined in the Statistical Package for Social Sciences (SPSS) (Version:25). For descriptive data, numbers, percentages, minimum-maximum values, and mean and standard deviation were calculated. The relationship between assistants' fear of COVID-19 and fear of burnout was obtained by Pearson Correlation analysis. Statistical tests were performed considering the 95% confidence interval and the p<0.05 significance level.

RESULTS

The sociodemographic characteristics of the general surgery assistants participating in the study are shown in Table 1. Accordingly, the average age of the assistants was 29.15±2.89, with the lowest age

being 25 and the highest age being 40. 79.6% of general surgery assistants are male, 35.9% work in the Central Anatolia region, 64.1% work in a university hospital, 72.8% work in a pandemic hospital, and 51.5% work in COVID-19. At the same time, 90.3% of general surgery assistants were assigned to another clinic during the pandemic period, and 42.7% of these clinics were COVID-19 outpatient clinics. The assignment period was determined to be between 1-3 months at a rate of 47.6%.

The average score of general surgery assistants on the Maslach Burnout Scale Depersonalization Subscale was 8.08 ± 3.11, the average score on the Emotional Exhaustion Subscale was 19.48±5.09, and the average score on the Personal Accomplishment Subscale was 11.76±3.90. In addition, the average score of general surgery assistants from the COVID-

Table 1. Individual and clinical characteristics of participants.

Variable	n (%)	
Age, years, mean±standard deviation (min-max)	29.15±2.89 (22-38 years)	
Gender	Female	21 (20.4)
	Male	82 (79.6)
Working Region	Central Anatolia	37 (35.9)
	Marmara	32 (31.1)
	Mediterranean	10 (9.7)
	Aegean	8 (7.8)
	Eastern Anatolia	8 (7.8)
	Southeastern Anatolia	4 (3.9)
Institution of Work	Black Sea	4 (3.9)
	University Hospital	66 (64.1)
	Ministry of Health Training and Research Hospital	25 (24.3)
	Ministry of Health City Hospital	12 (11.7)
Is the institution you work at a Pandemic Hospital?	Yes	75 (72.8)
	No	28 (27.2)
Status of being diagnosed with COVID-19	Yes	50 (48.5)
	No	53 (51.5)
Being assigned to another clinic during the pandemic	Yes	93 (90.3)
	No	10 (9.7)
If your answer is yes; clinics you are assigned to	Intensive care	41 (39.8)
	Emergency	15 (14.6)
	COVID-19 outpatient clinic	44 (42.7)
	COVID-19 sampling team	14 (13.6)
	Other	13 (12.6)
Mission time	<1 month	17 (16.5)
	1-3 month	49 (47.6)
	3-6 month	20 (19.4)
	>6 month	17 (16.5)

Table 2. COVID-19 Fear Scale and Maslach Burnout Scale Sub-Dimension Mean Scores of General Surgery Assistants.

	Mean± Standard Deviation	Minimum- Maximum Score
Depersonalization Subscale	8.08 ± 3.11	0-36
Emotional Exhaustion Subscale	19.48±5.09	0-20
Personal Success Subscale	11.76±3.90	0-32
COVID-19 Fear Scale	18.76±6.42	7.00-35.00

19 Fear Scale was determined as 18.76±6.42 (Table 2).

Table 3 shows the relationship between the COVID-19 Fear Scale and Maslach Burnout Scale mean scores of general surgery assistants. Accordingly, there is a positive significant relationship between the subscales of the Maslach Burnout Scale, namely depersonalization subscale, emotional exhaustion (r=0.471; p=0.000) and personal accomplishment subscale (r=0.428; p=0.000).

On the other hand, between the emotional exhaustion subscale and the personal accomplishment subscale (r=0.309; p = 0.001) and the COVID-19 Fear Scale (r=0.362; p=0.000), a positive significant relationship was detected between the personal success subscale and the COVID-19 Fear Scale (r=0.258; p=0.008).

A positive significant relationship was also obtained between the COVID-19 Fear Scale and the emotio-

Table 3. Relationship Between COVID-19 Fear Scale and Maslach Burnout Scale Subscales Mean Scores of General Surgery Assistants.

		Depersonalization Subscale	Emotional Exhaustion	Personal Success Subscale	COVID-19 Fear Scale
Depersonalization Subscale	r	1	.471**	0.428**	0.145
	p		0.000	0.000	0.144
Emotional Exhaustion Subscale	r	0.471**	1	0.309**	0.362**
	p	0.000		0.001	0.000
Personal Success Subscale	r	0.428**	0.309**	1	0.258**
	p	0.000	0.001		0.008
COVID-19 Fear Scale	r	0.145	0.362**	0.258**	1
	p	0.144	0.000	0.008	

** Correlation is significant at the 0.01 level (2-tailed).

nal exhaustion and personal accomplishment subscales.

DISCUSSION AND CONCLUSION

The COVID-19 epidemic affects and scares the individual biopsychosocially due to the loss of function and damage it causes physically on the body, as well as the stress response and emotional changes it causes.^{15,17} In a study, Özgünay et al.¹⁸ found that the fear of COVID-19 was high in physicians working in anesthesia intensive care units. In the study conducted by Lu et al.,¹⁹ it was determined that 43.9% of healthcare workers had a moderate level of fear of COVID-19, and 26.7% had a high level of fear of COVID-19. In a study conducted in Mexico, it was determined that healthcare workers experienced a high level of fear.²⁰ In another study conducted on healthcare professionals working in surgical clinics, the fear of COVID-19 was found to be at a moderate level.¹⁰ Bakioğlu et al.²¹, the participants' average fear of COVID-19 was found to be above average. In this study, general surgery residents' fear of COVID-19 was found to be above the average score. As can be seen, studies have found the fear of COVID-19 to be high, mainly among healthcare workers. Among all physicians, surgical physicians come first in terms of risk.¹¹ Studies have shown^{5,22,23} that most of the deaths caused by COVID-19 are among those working in surgical clinics. For this reason, it is understandable that sur-

gical assistants with little experience and high workload are afraid of COVID-19. For this reason, it is very important to quickly implement the necessary equipment, training and other protective measures to eliminate the ways of transmission of the virus to the surgical team, which is one of the risky groups among healthcare workers.

Another dimension of work is burnout. When studies in the literature on the burnout of healthcare workers during the pandemic period were examined, it was determined that there was a high level of burnout.^{9,17,24} As a result of scanning different databases on issues related to the maintenance of healthcare services by healthcare professionals during the COVID-19 pandemic, 2858 studies were evaluated, and 76 studies on burnout caused by the COVID-19 epidemic were examined.²⁴ In this study conducted by Lluçh et al.,²⁴ it was determined that while there was a decrease in personal accomplishment, one of the dimensions of burnout, there was a high level of burnout in the dimensions of depersonalization and emotional exhaustion. Factors such as insomnia, depression, and anxiety were found to be associated with burnout. Similarly, in a study aiming to determine the burnout in healthcare professionals due to the COVID-19 epidemic, Jalili and colleagues¹⁷ examined healthcare professionals working in six hospitals. They reported that there was a high prevalence of burnout in healthcare professionals. In a cross-sectional study²⁵ conducted during the COVID

-19 pandemic period, 30 articles were examined, and the results were evaluated. Similarly, in this study, it was determined that the epidemic had a consuming effect on healthcare workers, and more than half of healthcare workers experienced burnout.²⁵ In another study,²⁶ it was determined that most healthcare professionals experienced a high degree of emotional exhaustion and that their sense of personal accomplishment was negatively affected and depersonalization developed.

In a study on burnout experienced during COVID-19 among residents in the United States, Lin et al.²⁷ determined that 46.1% of residents experienced high levels of emotional exhaustion, one of the dimensions of burnout. In the same study²⁷, it was determined that 72.5% of the assistants experienced depersonalization, which is another dimension of high-level burnout, and personal success decreased by 30.6%. In the study of Abdelghani et al.,¹⁵ it was found that 71% of physicians had high levels of depersonalization, 39% had low personal accomplishment, and 20% had high levels of emotional exhaustion. In a study conducted in our country by Yıldırım and Solmaz,²⁸ it was determined that participants in the study experienced burnout above a moderate level. Although there is no study that focuses only on surgical assistants, it is known that burnout is experienced at high levels among healthcare professionals working in surgical clinics. In this study,²⁸ it was determined that surgical assistants whose work intensity increased during the pandemic period and faced the threat of contamination experienced burnout above a moderate level, developed depersonalization, and experienced a decrease in their achievements. Our study result is compatible with the literature.

In the correlation analysis, a positive significant relationship was obtained between fear of COVID-19 and burnout. Accordingly, it has been determined that assistants with a high fear of COVID-19 experience high levels of emotional exhaustion and depersonalization, and at the same time, the feeling of a decrease in personal success increases. Studies on the fear of COVID-19 indicate that as the fear of COVID-19 increases, anxiety, stress, depression, and other psychological problems increase, and this leads to burnout.^{21,24,29}

In the study conducted by Arpacioğlu et al.,⁹ a significant relationship was found between burnout and fear of COVID-19 in healthcare workers during the COVID-19 pandemic. In another study conducted to determine the effect of excessive workload and perceived social support on the relationship between fear of COVID-19 and burnout of healthcare personnel using a structural equation model, Yakut et al.²⁹ obtained a significant relationship between fear of COVID-19 and burnout. Similar results have been

obtained in studies on the subject, showing that as healthcare professionals' fear of the COVID-19 epidemic increases, burnout also increases.^{24,26,30} In our study, which is consistent with the literature, it was determined that burnout increased as the fear of COVID-19 increased.

As a result, in this study, which aims to investigate the fear of COVID-19 and burnout syndrome in general surgery residents, the fear of COVID-19 and burnout were found to be above average, while personal success was found to be low. Additionally, a positive significant relationship was obtained between fear of COVID-19 and burnout. It has been determined that as the fear of COVID-19 increases in assistants, burnout increases. In line with these results, we think that general surgery assistants who are at high risk of transmission of COVID-19 and similar viruses are considered risky groups during epidemic periods and implementing crisis management policies covering the necessary protective measures and psychological support may be effective in reducing burnout syndrome.

Ethics Committee Approval: Our study was approved by the Sivas Cumhuriyet University Ethics Committee (Date: 14.4.2021, decision no: 2021-04/36). The study was carried out following the international declaration, guidelines, etc.

Conflict of Interest: No conflict of interest was declared by the authors.

Author Contributions: Concept - MCM, KK; Materials - MM; Data Collection and/or Processing - MCM; Analysis and/or Interpretation - MCM, KK; Writing - MCM, KK.

Peer-review: Externally peer-reviewed.

REFERENCES

1. Bhuiyan AK, MI, Sakib N, Pakpour A, Griffiths MD, Mamun MA. COVID-19 related suicides in Bangladesh due to lockdown and economic factors: Case study evidence from media reports. *Int J Ment Health Addict.* 2021;19(6):2110-2115. doi:10.1007/ijmh.2021.00307
2. Brooks SK, Webster RK, Smith LE, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet.* 2020;395(10227):912-920. doi:10.1016/lancet.2020.30460
3. Martínez-López JÁ, Lázaro-Pérez C, Gómez-Galán J, Fernández-Martínez MDM. Psychological impact of COVID-19 emergency on health professionals: Burnout incidence at the most critical period in Spain. *J Clin Med.*2020;9(9):3029. doi:10.3390/jcm.2020.9093029
4. Cai H, Tu B, Ma J, et al. Psychological impact and coping strategies of frontline medical staff in Hunan between January and March 2020 during

- the outbreak of coronavirus disease 2019 (COVID-19) in Hubei, China. *Med. Sci. Monit.* 2020;26:e924171-1- e924171-16. doi:10.12659/msm.2020.924171
5. Ing EB, Xu QA, Salimi A, Torun N. Physician deaths from corona virus (COVID-19) disease. *Occup Med.* 2020;70(5):370-374. doi:10.1093/occmed.2020.kqaa088
 6. Nuñez-Gamez JA, Medina-Bravo PA, Piñeros-López NF, et al. Global outcomes, surgical teams and COVID-19 pandemic: Will the same objectives of global surgery persist? *Ann Med Surg.* 2021;71:103002. doi:10.1016/j.amsu.2021.103002
 7. Martin AN, Petroze RT. Academic global surgery and COVID-19: turning impediments into opportunities. *Am. J. Surg.* 2020;220(1):53-54.
 8. Ganguli S, Yibrehu B, Shah A, Rosseau N, Niba V, Rosseau G. Global surgery in the time of COVID-19: a trainee perspective. *Am. J. Surg.* 2020;220(6):1534-1535.
 9. Arpacioğlu S, Baltalı Z, Ünübol B. COVID-19 pandemisinde sağlık çalışanlarında tükenmişlik, Covid korkusu, depresyon, mesleki doyum düzeyleri ve ilişkili faktörler. *Cukurova Med. J.* 2021;46(1):88-100. doi:10.17826/cumj.2021.785609
 10. Çelik F, Dağlı R. Fear of COVID-19: A cross-sectional study on the psychological state of the surgical team. *Fırat Univ Med J Health Sci.* 2021;35(2):107-112.
 11. Ahorsu DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour AH. The fear of COVID-19 scale: development and initial validation, *Int J Ment Health Addict.* 2020;27:1-9.
 12. Satici, B. Adaptation of the Fear of COVID-19 Scale: Its association with psychological distress and life satisfaction in Turkey. *Int J Ment Health Addict.* 2020;19(6):1980-1988. doi:10.1007/ijmha.2021.00294
 13. Maslach C, Leiter MP, Jackson SE. Making a significant difference with burnout interventions: Researcher and practitioner collaboration. *J Organ Behav.* 2012;33(2):296-300. doi:10.1002/job.2012.784
 14. Ergin, C. Doktor ve hemşirelerde tükenmişlik ve Maslach Tükenmişlik Ölçeği'nin uyarlanması. 7. Ulusal Psikoloji Kongresi Bilimsel Çalışmaları. Ekim 25, 1992, Ankara/Türkiye.
 15. Abdelghani, M, El-Gohary HM, Fouad E. Hassan MS. Addressing the relationship between perceived fear of COVID-19 virus infection and emergence of burnout symptoms in a sample of Egyptian physicians during COVID-19 pandemic: a cross-sectional study. *Middle East Curr. Psychiatry,* 2020;27(70):1-9.
 16. Jakovljevic B, Stojanovic K, Nikolic Turnic T, Jakovljevic VL. Burnout of physicians, pharmacists and nurses in the course of the COVID-19 pandemic: A Serbian cross-sectional questionnaire study. *Int. J. Environ. Res. Public Health.* 2021;18(16):8728. doi:org/10.3390/ijerph.2021.18168728
 17. Jalili M, Niroomand M, Hadavand, Zeinali K, Fotouhi A. Burnout among healthcare professionals during COVID-19 pandemic: A cross-sectional study. *Int Arch Occup Environ Health.* 2021;94(6):1345-1352.
 18. Özgünay ŞE, Akça F, Karasu D, Eminoglu Ş, Gamli M. Evaluation of fear levels of anesthetists and prophylaxis practices in the coronavirus (COVID-19) pandemic. *Anestezi Derg.* 2021;29(1):25-31.
 19. Lu W, Wang H, Lin Y, Li L. Psychological status of medical workforce during the COVID-19 pandemic: A cross-sectional study. *Psychiatry Res.* 2020;288:1-5.
 20. Mora-Magaña I, Lee SA, Maldonado-Castellanos I. Coronaphobia among healthcare professionals in Mexico: A psychometric analysis. *Death Studies.* 2022;46(2):280-289.
 21. Bakioğlu F, Korkmaz O, Ercan H. Fear of COVID-19 and positivity: Mediating role of intolerance of uncertainty, depression, anxiety, and stress. *Int J Ment Health Addict.* 2021;19(6):2369-2382. doi:10.1007/ijmha.2021.00331
 22. Feier CVI, Muntean C, Bardan R, Olariu A, Olariu S. Impact of COVID-19 pandemic on a general surgery clinic. *J Med Life.* 2022;15(3):415-419. doi:10.25122/jml.2022.0087
 23. Kursumovic E, Lennane S, Cook TM. Deaths in healthcare workers due to COVID-19: the need for robust data and analysis. *Anaesthesia.* 2020;75:989-992.
 24. Lluch C, Galiana L, Doménech P, Sansó N. The impact of the COVID-19 pandemic on burnout, compassion fatigue, and compassion satisfaction in healthcare personnel: A systematic review of the literature published during the first year of the pandemic. *Healthcare.* 2022;10(2):364. doi:10.3390/healthcare.2022.10020364
 25. Ghahramani S, Kasraei H, Hayati R, Tabrizi R, Marzaleh MA. Health care workers' mental health in the face of COVID-19: A systematic review and meta-analysis. *Int J Psychiatry Clin Pract.* 2023;27(2):208-217.
 26. Jakovljevic B, Stojanovic K, Nikolic Turnic, T, Jakovljevic V L. Burnout of physicians, pharmacists and nurses in the course of the COVID-19 pandemic: A Serbian cross-sectional questionnaire study. *Int J Environ Res Public Health.* 2021;18(16):8728. doi:10.3390/ijerph.2021.18168728
 27. Lin M, Battaglioli N, Melamed M, Mott SE, Chung AS, Robinson DW. High prevalence of

- burnout among us emergency medicine residents: Results from the 2017 national emergency medicine wellness survey. *Ann Emerg Med.* 2019;74(5):682-690.
- 28.Yıldırım M, Solmaz F. COVID-19 burnout, COVID-19 stress and resilience: Initial psychometric properties of COVID-19 Burnout Scale. *Death Stud.* 2022;46:524-532. doi:10.1080/deathstud.2020.1818885
- 29.Yakut E, Kuru Ö, Güngör Y. Sağlık personelinin COVID-19 korkusu ile tükenmişliği arasındaki ilişkide aşırı iş yükü ve algılanan sosyal desteğin etkisinin yapısal eşitlik modeliyle belirlenmesi. *EKEV Akademi Dergisi.* 2020;24;(83):241-262.
- 30.Hu D, Kong Y, Li W, et al. Frontline nurses' burnout, anxiety, depression, and fear statuses and their associated factors during the COVID-19 outbreak in Wuhan, China: A large-scale cross-sectional study. *E Clin Med.* 2020;27;2-8. doi:10.1016/j.eclinm.2020.100424