

The Burnout Levels of Emergency Employees in COVID -19 Pandemic and the Related Factors

COVID-19 Pandemi Döneminde Acil Servis Çalışanlarının Tükenmişlik Düzeyleri ve Etkileyen Faktörler

Metin OCAK¹ , Nur Şimşek YURT² , Yusuf Can YURT¹ , Hacı Mehmet ÇALIŞKAN³ 

¹ Gazi State Hospital, Emergency Clinic, Samsun, TURKEY

² Samsun Training and Research Hospital, Family Medicine Clinic, Samsun, TURKEY

³ Ahi Evran University Faculty Of Medicine, Department of Emergency Medicine, Kırşehir, TURKEY

Abstract

Background: In this study we aimed to investigate burnout levels of the emergency employees during the pandemic period and the related factors.

Materials and Methods: 140 emergency service employees working in two large pandemic hospitals in Samsun province were included in the study. Maslach Burnout Inventory was performed on the participants.

Results: A total of 140 people participated in the study, wherein 55% are males and 45% are females, 55.8% are married, and 40.7% of them are in the age group of 18–27 years and 30% are 28-37 years. In occupational examination of participants, nurses rank first at the rate of 32.1% and practitioners rank second at 28.5%. In addition, 40.7% of participants got infected with COVID-19 during the pandemic. Maslach burnout inventory was compared by demographic data, occupation, and medical history of COVID -19 of the participants. In consequence of the comparison of Maslach burnout inventory by demographic data, occupation, and COVID-19 infection medical history of participants, statistically significant difference was found between gender ($p = 0.003$), educational backgrounds ($p = 0.006$), and COVID-19 disease history ($p = 0.024$) in the EE subscale, between gender ($p = 0.038$) and educational backgrounds ($p = 0.003$) in the desensitization subscale, and between genders ($p = 0.007$) in the personal success subscale. In addition, multivariate linear regression analysis showed that gender ($\beta = 0.247$, $p = 0.003$) and COVID-19 disease history ($\beta = 0.219$, $p = 0.011$) were independent predictors for emotional exhaustion.

Conclusions: In this study, we found that gender, educational background, and history of COVID-19 infection affect burnout. Also; We found that history of COVID-19 infection and gender are an independent predictor of emotional exhaustion.

Key Words: Emergency Service, COVID-19, Burnout, Pandemi

Öz.

Amaç: Biz bu çalışmada pandemi döneminde acil servis çalışanlarının tükenmişlik düzeyleri ve etkileyen faktörlerini araştırmayı amaçladık.

Materyal ve Metod: Samsun ilindeki iki büyük pandemi hastanesinde çalışan 140 acil personeli araştırmaya dahil edilmiştir. Katılımcılara Maslach tükenmişlik envanteri uygulanmıştır.

Bulgular: Çalışmaya %55 erkek, %45 kadın toplam 140 kişi katılmıştır. Katılımcıların %55.8'i evlidir. %40.7'si 18-27 yaş grubundayken %30'u 28-37 yaş grubundadır. Gönüllülerin %32.1'i hemşire %28.5 pratisyen hekimdir. Katılımcıların %40.7'si COVID-19 enfeksiyonu geçirmiştir. Maslach tükenmişlik ölçeğininin katılımcıların demografik verileri, mesleği ve COVID -19 geçirme öyküsüne göre karşılaştırılması sonucunda duygusal tükenme alt ölçeğinde cinsiyet ($p=0.003$), eğitim durumları ($p=0.006$) ve COVID-19 enfeksiyonu geçirme öyküsü ($p=0.024$) arasında, duyarsızlaşma alt ölçeğinde cinsiyet ($p=0.038$) ve eğitim durumları ($p=0.003$) arasında, kişisel başarı alt ölçeğinde cinsiyetler ($p=0.007$) arasında istatistiksel anlamlı farklılıklar tespit edilmiştir. Ayrıca duygusal tükenme için cinsiyet ($\beta = 0.247$, $P = 0.003$) ve COVID-19 ($\beta = 0.219$, $P = 0.011$) enfeksiyonu geçirme öyküsünün bağımsız prediktör olduğu tespit edilmiştir.

Sonuç: Bu çalışmada, cinsiyet, eğitim durumu ve COVID-19 enfeksiyon öyküsünün tükenmişliği etkilediğini bulduk. Ayrıca COVID-19 enfeksiyonu geçirmenin ve cinsiyetin duygusal tükenmenin bağımsız öngörücüsü olduğunu tespit ettik.

Anahtar kelimeler: Acil Servis, COVID-19, Tükenmişlik, Pandemi

Sorumlu Yazar/Corresponding Author

Dr. Metin OCAK

Gazi State Hospital, Emergency Clinic
Samsun, TURKEY
post code 55100

E-mail: mdmocak@gmail.com

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Introduction

Burnout, as first described by Freudenberger in 1974, is a psychological condition comprising a long-term response to interpersonal permanent stressors. Freudenberger (1975) summarized the signs of burnout such as hopeless, fatigued, bored, resentful, disenchanted, discouraged, confused quickness to anger, instantaneous irritation, frustration responses, totally negative attitude, etc. (1). Burnout was further developed independently by Maslach to be characterized by three domains: emotional exhaustion (EE), depersonalization, and a diminished sense of personal accomplishment (2). EE component is considered as the most basic and distinct dimension and symptom of burnout syndrome. Desensitization component represents the interpersonal dimension of burnout syndrome. The personal success component reflects a person's tendency to feel inadequate (3). Health sector is one of the most important areas of service sector. Recently, working environment and conditions has been observed as getting difficult for health care professionals in terms of increasing work load, working under pressure, patient violence and suffering affronts from patients, struggling to meet patient's demands and hospital administration, etc. (4). Health care is listed as one of the most stressful occupations that require strong personal interaction with people, particularly with patients suffering from intensive stress and other health care providers, leading to high levels of burnout (5). Emergency services are areas where work load and stress are more common than others due to several reasons, such as intensive working environment, long hours, variability and unpredictability of cases, and need for rapid response to patients. In literature, studies indicated that emergency physicians suffer high levels of burnout syndrome (6,7). In addition, cases of Coronavirus Disease 2019 (COVID-19) pandemic, which emerged in China later in 2019 and regarded as a pandemic by the World Health Organization on March 11, 2020, are still increasing all over the world (8). The pandemic brought with it many additional stress factors to health care professionals such as overworking, unable to take annual leave, distancing from families for a long time, working with personal protective equipment, colleagues falling sick or dying due to COVID-19 infection, worrying for infecting acquaintances with COVID-19 infection, etc. (4). In addition, the end of this pandemic is still unclear in spite of the positive vaccine and drug study developments. Emergency service employees experiencing high levels of burnout together with all these problems is inevitable. Literature in Turkey and worldwide is rich in studies related to burnout syndrome. Recently, studies on burnout syndrome began to be carried out with COVID-19 infection, as well (4,5). This study aimed to investigate burnout levels of emergency service employees working in two large pandemic hospitals in Samsun province during COVID-19 pandemic and its influencing factors. In addition, this study is the first study investigating the influence of medical history of COVID-19 on burnout syndrome to the best of our knowledge.

Materials and Methods

This is a cross sectional survey study participated by the emergency service employees in Gazi State Hospital and Samsun Training and Research Hospital. The study was carried out between the dates 01.02.2021 and 01.03.2021. Questionnaires and burnout scales related to the demographic data and medical history of COVID-19 infection of participants were prepared on the internet and given to participants. A total of 140 volunteers, who meet the conditions of the study were contacted with their answers recorded. (This number of participants constitutes 39.4% of the population of the study)

Participants who had previous psychiatric diagnosis, refused to participate in the study, and left some of the survey questionnaires blank were excluded from the study.

Ethics committee approval required for the study was obtained from Health Sciences University, Samsun Training and Research Hospital, Non-Interventional Clinical Research Ethics Committee with the resolution no. 2021/1/14 dated January 13, 2021.

Maslach burnout inventory was used as a burnout scale, which was developed by Maslach and Jackson and is a 7-point Likert scale consisting of 22 items. In its unique form, the scale consists of answer options "never, a few times a year, once a month, a few times a month, once a week, a few times a week, and every day". It comprises 3 subscales as follows: EE, Desensitization, and Personal Success. EE consists of 9 items; desensitization consists of 5 items and personal success consists of 8 items. Ergin made some modifications in the scale in his adaptation study. The 7-point answer options in the scale were modified as a 5-point scale as "never, rarely, sometimes, often, and always" (9). 5-point Likert scale was used in this study. Each item of the subscales was scored as 0–4. High level of burnout syndrome reflects high scores in the subscales of EE and desensitization and low score in the subscale of personal success. Three different burnout scores are estimated for each person in the scoring.

The program International Business Machines Corporation Statistical Package for the Social Sciences (Chicago, IL, USA) version 21.0 was used in the statistical analysis of data. Descriptive statistics are presented with mean, standard deviation, minimum-maximum, and median values for continuous data, and with percentage values for categorical data. Conformity of continuous data to normal distribution was evaluated by Kolmogorov-Smirnov test. Mann-Whitney U test was used for comparison of two independent groups and Kruskal Wallis-H test was used for comparison of more than two groups. Categorical variables were compared using the chi-square test. Post-hoc analysis was performed to determine the significance of a group. Bonferroni correction was applied to the post-hoc analyses. Multivariate logistic regression analysis was used to determine the independent predictor of EE. $P < 0.05$ was considered statistically significant.

Results

A total of 140 people participated in the study, wherein 55% are males and 45% are females, 55.8% are married, and 40.7% of them are in the age group of 18–27 years and 30% are 28-37 years. From the educational background examination of participants, university graduates rank first at the rate of 57.2% and post graduates rank second at the rate of 25.7%. From the participants, 81.4% work in the secondary care state hospital and the rest work in the tertiary care state hospital. In occupational examination of participants, nurses rank first at the rate of 32.1% and practitioners rank second at 28.5%. In addition, 40.7% of participants got infected with COVID-19 during the pandemic. Demographic data, educational background, and occupational information of participants and their organizations are given in Table 1.

Participants were examined by using the sub parameters of Maslach burnout inventory. According to the EE subscale, the following has the highest burnout levels: Gender: female (median: 22.5); Marital Status: married (median: 21); Occupation: medical secretaries (median: 26) and specialist doctors (median: 23); Hospital: tertiary care state hospital (median: 21.5); Age group: 18–27 years (median: 21) and 38–47 (median: 21); and Education: primary school (median: 23) and vocational school (median: 22.5). Results showed that those with COVID-19 infection history have higher level of EE (median: 21).

According to the desensitization subscale, the following has the highest burnout level: Gender: female (median: 9); Occupation: medical secretaries (median: 13) and physician associates (median: 9.5); Hospital: tertiary care state hospital (median: 9); Age group: 18–27 years (median: 9); and Education: primary school (median: 10), secondary school (median: 10), and vocational school (median: 10). Results showed that those with COVID-19 infection history have higher level of desensitization (median: 9). In addition, marital status was found to have no effect on desensitization (median: 8).

According to the personal success subscale, the following has the highest burnout level: Gender: female (median: 20); Marital Status: single (median: 20.5); Occupation: practitioners (median: 20) and specialist doctors (median: 20.5); Hospital: tertiary care state hospital (median: 21); Age group: >47 years (median: 19.5); and Education: university (median: 21) and post graduate (median: 21). Results showed that those with COVID-19 infection history have higher level of burnout according to the personal success subscale (median: 21).

Maslach subscale scores of the employees by variants are shown in Table 2. In consequence of the comparison of Maslach burnout inventory by demographic data, occupation, and COVID-19 infection medical history of participants, statistically significant difference was found between gender ($p = 0.003$), educational backgrounds ($p = 0.006$), and COVID-19 disease history ($p = 0.024$) in the EE subscale, between gender ($p = 0.038$) and educational backgrounds ($p =$

0.003) in the desensitization subscale, and between genders ($p = 0.007$) in the personal success subscale. A post-hoc analysis was carried out to investigate the reason for the difference in educational background, which was found to be caused by different secondary school and post graduate groups. The study found that EE and desensitization scores of the post graduate group are significantly high ($p = 0.002$ and $p = 0.003$, respectively). No statistically significant difference was found among other parameters in comparison of the groups ($p > 0.05$) (Table.2).

In addition, multivariate linear regression analysis showed that gender ($\beta = 0.247$, $p = 0.003$) and COVID-19 disease history ($\beta = 0.219$, $p = 0.011$) were independent predictors for EE (Table 3).

Table 1. Demographic Data of Participants, Information on Education, Profession and Institution

	Number of Participants (n)	Percent (%)
GENDER		
Female	63	45.0
Male	77	55.0
Marital Status		
Single	62	44.2
Married	78	55.8
Age		
18-27	57	40.7
28-37	42	30.0
38-47	33	23.5
<47	8	5.8
Education		
Primary School	2	1.4
Secondary School	5	3.5
High School	9	6.4
Vocational School	8	5.8
University	80	57.2
Postgraduate	36	25.7
Hospital		
Stage 2 state hospital	114	81.4
Stage 3 state hospital	26	18.6
Year in Institution		
<1 Year	34	24.3
>9 Year	27	19.3
1-3 Year	40	28.6
4-6 Year	21	15.0
7-9 Year	18	12.8
Profession		
Residency Student	12	8.6
Security Guard	2	1.4
Nurse	45	32.1
Servant Staff	6	4.3
Associate	1	0.7
General Practitioner	40	28.5
Health Officer	13	9.3
Medical Secretary	3	2.1
Specialist	18	13.0
COVID-19 Disease History		
Yes	57	40.7
No	83	59.3

Table 2. Maslach Burnout Scale Scores Of The Participants According To Demographic Data, Hospital Status, Profession And COVID-19 Disease History

		Emotional Exhaustion			Desensitization			Personal Success		
		Me-dian	Min.	Max	Me-dian	Min	Max.	Me-dian	Min.	Max
Gender *	Male	18	0	33	8	0	15	22	10	32
	Female	22.5	3	35	9	2	17	20	10	29
	P values	0.003			0.038			0.007		
Marital Status*	Single	20	3	35	8	2	16	20.5	10	31
	Married	21	0	33	8	0	17	22	13	32
	P values	0.544			0.637			0.308		
Profession**	Residency Student	20.5	11	31	9.5	5	13	21	16	24
	Security Guard	15	13	17	1	1	1	22	17	27
	Nurse	21	3	32	8	2	13	22	13	32
	Servant Staff	4	0	23	2.5	0	11	23	18	31
	Associate	13	13	13	5	5	5	26	26	26
	General Pract.	19	10	35	8	3	16	20	10	28
	Health Officer	22	8	29	9	3	17	23	19	30
	Medical Secretary	26	25	33	13	4	13	23	16	24
	Specialist Doctor	23	8	29	8.5	1	15	20.5	14	25
P Values	0.031			0.054			0.036			
Hospital Status*	Stage 2 state hospital	20	0	33	8	0	17	22	10	32
	Stage 3 state hospital	21.5	11	35	9	3	16	21	16	29
	P values	0.127			0.211			0.443		
Age**	18-27	21	3	35	9	2	16	21	10	31
	28-37	20	8	33	8	1	17	22	10	32
	38-47	21	0	29	8	0	13	22	14	31
	+47	20	3	29	4.5	1	15	19.5	13	22
	P values	0.996			0.095			0.257		
Education**	Primary School	23	23	23	10	10	10	22	22	22
	Secondary School	2	0	5	10	0	3	24	18	31
	High School	21	13	33	4	1	13	22	16	27
	Vocational School	22.5	10	29	10	4	13	23	18	30
	University	20	3	35	8	2	17	21	10	32
	Post Graduate	21	8	31	9	1	14	21	10	29
	P values	0.006			0.003			0.353		
COVID-19 Disease History*	No	19	0	35	8	0	16	22	10	32
	Yes	21	8	35	9	1	17	21	13	29
	P values	0.024			0.160			0.230		

*Mann-Whitney U test, ** Kruskal-Wallis test

Table 3. Multivariate Linear Regression Analysis Showing Independent Predictor of The Emotional Exhaustion

	Unstandardized coefficients		Standardized co-efficients		
	B	SE	β	t	P
Gender	3.425	1.147	0.247	2,987	0.003
Marital Status	0.061	1.347	0.004	0.045	0.964
Profession	0.445	0.242	0.156	1.836	0.069
Hospital Status	2.846	1.528	0.162	1.862	0.065
Age	0.073	0.734	0.010	0.100	0.921
Education	0.601	0.655	0.083	0.918	0.361
COVID-19 Disease History	3.063	1,184	0.219	2.586	0.011

Discussion

In this study, gender, education status, and COVID-19 infection history was found to affect burnout. EE was found to be significantly higher in those with COVID-19 infection. However, desensitization and personal success categories were not affected by COVID-19 infection history. In addition, gender and COVID-19 history are independent predictors in the EE subscale. In previous studies, it has been

reported that COVID-19 increases stress, anxiety and depression in people and negatively affects mental health (10). In another study that investigated the effect of COVID-19 on emergency service workers in Turkey; It was reported that 53.7% of the employees had mild anxiety, 28.4% had moderate anxiety and 17.9% had severe anxiety (11). To the best of our knowledge, this study is the first to investigate the effect of COVID-19 infection history on burnout.

Considering the importance and function of the emergency services in Turkey, it is important to minimize the burnout level of emergency service employees in terms of both employees and people they serve.

Factors such as age, gender, educational background, marital status, number of children, excessive commitment to work, personal expectancy level, individual performance, personality traits, work-related stress, job satisfaction and motivation, and relationship and communication with colleagues and managers are among the individual and social reasons for burnout syndrome (12).

Heavy working conditions and health problems caused by the pandemic that increase burnout due to many factors is inevitable. Study results showed that those with COVID-19 infection history had significantly higher levels of EE. In addition, COVID-19 infection history was found as an independent EEpredictor. As far as we know, our findings are the first in this sense of literature.

In literature, many studies on the effects of gender on burnout are reported. Some studies reported that gender has no effects on burnout ; however, females are reported to have higher levels of burnout (3,12-17). This study also found that females have higher levels of burnout in all three subcategories in accordance with literature.

From previous studies, EE and desensitization generally decrease and personal success increases as educational level increases (18-20). This study found significant difference in burnout level among educational backgrounds. The difference was found to be caused by the difference between secondary school and post graduate groups. Unlike literature, post graduate group has higher level of EE and desensitization. The reason for this may be that the employees in the postgraduate education group do not perform jobs that are not in line with their educational background and professional satisfaction expectations. Among the groups in the personal success subscale, no difference was found. The effect of the profession and age on burnout has not been clearly defined. Studies in literature reported that nurses and general practitioner are occupational groups that are at the highest risk of burnout among health care professionals (21,22,23). Another study reported that security guards have the highest level of burnout among occupational groups (18). Also, studies reported that occupation does not have any effects on burnout level (3). This study did not find a significant relationship between occupation and burnout syndrome. Many previous studies reported that burnout level decreases as people get older with more experience (18,24,25). Öztürk et al. reported that age does not significantly affect burnout level (3). This study showed that age factor does not significantly affects burnout levels of participants. Studies reported that effects of marital status on burnout level are unclear. Maslach et al. reported that single people have higher level of burnout than the married ones (2). Aslan et al. reported that single people have lower level of burnout (24). Türkmenoğlu et al. reported that marital status has no effects on burnout level (18). This study found that marital status does not significantly affect burnout level.

Limitations

Limited participation in this study is one of the most significant limitations. Besides, another significant limitations of the study is non-inclusion of factors such as the years of work in the profession, how long he worked in which department, working conditions, hospital management, etc., which affect burnout level. In addition, the fact that the participants could not be examined by a psychiatrist is

another limitation of the study.

Conclusion

Result showed that burnout levels are significantly higher in female gender, post graduate education, and COVID-19 infection history. Other demographic data was found to have no significant effect. In addition, gender and COVID-19 infection history are independent predictors in the EE subscale. To reduce burnout rates in emergency service workers struggling with COVID-19; It is very important to provide working conditions suitable for the professional satisfaction expectation and educational status of employees and to take protective measures to reduce the risk of COVID-19 transmission. In addition, we think that professional psychiatric support should be provided to protect and support the mental health of the employees.

Ethical Approval: Ethics committee approval required for the study was obtained from Health Sciences University, Samsun Training and Research Hospital, Non-Interventional Clinical Research Ethics Committee with the resolution no. 2021/1/14 dated January 13, 2021.

Author Contributions:

Concept: M.O., Y.C.Y.

Literature Review: M.O., N.Ş.Y., H.M.Ç.

Design : M.O., Y.C.Y., N.Ş.Y.

Data acquisition: M.O., Y.C.Y., N.Ş.Y.

Analysis and interpretation: M.O., H.M.Ç., N.Ş.Y.

Writing manuscript: M.O.

Critical revision of manuscript: N.Ş.Y., H.M.Ç.

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