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ORIGINAL ARTICLE

Does Burnout Due to COVID-19 Affect Resilience? The Sample of Doctors in Turkiye

COVID-19 Nedeniyle Yaşanmış Tükenmişlik Dayanıklılığı Etkiledi Mi? Türkiye'deki Doktorlar Örneği

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ABSTRACT

Objective: The consequences of the coronavirus pandemic on doctors are significant. This study was conducted to determine the resilience or burnout status of physicians, the characteristics that make a difference on them and whether burnout predicts resilience.
Method: The study was conducted with a quantitative method and a general survey model. 246 physicians were reached in the descriptive cross-sectional study. The volunteers with ethical permission were ensured to be able to answer all questions before collecting the data obtained with the principle of voluntary participation.
Results: Age range, income perception, whether they like their profession or not, and whether they are satisfied with the unit they work in are the variables that make a difference in the levels of resilience and burnout of physicians. Self-efficacy, family and social network, coping, and adaptation scores of the physicians in the study were above average in terms of their resilience. Personal achievement and satisfaction with the unit they work predict resilience.
Conclusion: In order to increase the resilience of doctors in extraordinary conditions such as pandemics, conditions such as ensuring that they are satisfied with their workplace and supporting their personal success should be created.

Keywords: Physicians' resilience, physicians' burnout, Turkiye

ÖZ

Amaç: Koronavirüs pandemisinin doktorlar üzerindeki sonuçları önemlidir. Bu çalışma hekimlerin yılmazlık veya tükenmişlik durumlarını, onlar üzerinde fark yaratan özellikleri ve tükenmişliğin yılmazlığı yordayıp yordamadığını belirlemek amacıyla yapılmıştır.
Yöntem: Araştırma nicel yöntemle ve genel tarama modeliyle gerçekleştirildi. Tanımlayıcı kesitsel araştırmada 246 hekime ulaşıldı. Gönüllü katılım ilkesi gözetildi. Verileri toplamadan önce etik izin alındı.
Bulgular: Hekimlerin yılmazlık ve tükenmişlik düzeylerinde farklılık yaratan değişkenleri; yaş aralığı, gelir algısı, mesleğini sevip sevmeme ve çalıştıkları birimden memnun olup olmama durumları oluşturmuştur. Araştırmaya katılan hekimlerin öz yeterlilik, aile ve sosyal ağ, başa çıkma ve uyum puanları dayanıklılık açısından ortalamanın üzerinde çıkmıştır. Kişisel başarı ve çalıştıkları birimden duyulan memnuniyet, dayanıklılığı yordamaktadır.
Sonuç: Pandemi gibi olağanüstü durumlarda doktorların dayanıklılıklarının arttırılması için işyerlerinden memnun olmalarının sağlanması, kişisel başarılarının desteklenmesi gibi koşullar oluşturulmalıdır.

Anahtar Kelimeler: Hekimlerin yılmazlığı, hekimlerin tükenmişliği, Türkiye

Introduction

The COVID-19 epidemic has brought health-related circumstances into the public eye, particularly in terms of the caliber and number of institutions and the people who work there. The sickness spread faster than was expected (1). In this instance, there was no time for disease control or surveillance (2, 3). Several factors such as the initial absence of a heightened workload and limited scientific knowledge about the disease, challenges in obtaining personal protective equipment for healthcare personnel, concerns about contracting the disease, the dynamic nature of patient prognosis, ethical dilemmas related to patient prioritization due to increased demand for medical equipment, and the perception of healthcare workers as being at risk for the disease, which leads to decisions about both excluding and including them in the treatment process come into play (4-11). Burnout among medical staff may have resulted from everything said. According to the literature, burnout can have a negative impact on a person's dedication to their organization as well as their physical, mental and social health. It can also traumatize a person's social identity (12). On the other side, the research asserts that difficult experiences can help people become resilient, and that having a high level of resilience has a protective effect on people (13). Resilience is described as the capacity of an individual to manage risk, adversity and stress despite exposure to a significant stressor that may contribute to a number of physical, behavioral, cognitive and emotional symptoms (14). The health system started to change and transform with the health reforms that started to be implemented in Turkiye in 2003. Access to health services has become easier, everyone has been covered by health insurance, and the quality of services has increased since the reforms. Institutions have been revised in terms of infrastructure and equipment. While

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the satisfaction of citizens with health services was 54% in 2007, this rate was 70% in 2016. Ongoing regulations have been made on the establishment of hospitals, increasing bed capacities, human resources, quality and accreditation status, reimbursement systems and institutional structures of health systems. The localization of hospitals in only certain regions was prevented and a balanced distribution was ensured in Turkiye with the reform. The health insurance system, which was at different levels before, was also changed and a balance was established between all citizens in the use of health insurance. 83.7% of its citizens could receive health insurance in 2014, the premiums of the remaining 16.3% were covered by the state, so all of its citizens were included in health insurance. Hospitals were included in national/international accreditations. A performance-based additional payment system was initially introduced and then a full-time labor law was enacted to prohibit physicians from working both in the private sector and the public in order to reduce physicians' part-time work. At the same time, the number of health personnel in the public sector has increased and equality in access to health has been ensured by initiating compulsory service practice and family medicine practice. The fact that all these reforms implemented in Turkiye were completed before the pandemic gave both the management and its citizens confidence in the pandemic (15).

Our aim in the study was to determine whether doctors are resilient or burned out in this process, to reveal what makes a difference on these, and to see whether burnout is predictive of resilience. At the same time, our aim is to determine the direction and size of the predictive effect of burnout on resilience.

Material and Methods

Type of Study

The research is quantitative, a general screening model and cross-sectional.

Population and Sample of the Study

The formula (N*t2*p*q) / [d2*(N-1) + t2*p*q) was used to determine the sample size, and p = 0.80, q = 0.20, and d = 0.05 were taken into account. The minimum number of individuals to be reached was determined as 246 individuals. As of 2020, there were 165.363 physicians working in Turkiye. The data were gathered from "volunteer participants who stated that they did not have any psychiatric disease diagnosed by the physician" in accordance with the Helsinki Declaration standards, and the participants were informed by the information text at the top of the data collection form.

Data Collection Tools

•Personal Information Form (contains independent variables): The purpose of this form is to gather information about the participants' age, gender, education, occupation, habits and status with regard to chronic diseases. It also intends to find out whether the participants' households contain anyone else who falls into the diagnostic individual category.

•Resilience Scale for Adults (RSA): Savi Cakar et al. carried out the Turkish validity and reliability assessment of the scale, which Ryan and Caltabiano published in 2009 under the title "The Resilience in Midlife Scale (RIM-S)" in 2014. The scale attempts to assess the degrees of resilience in people between the ages of 35 and 60 who must adjust to significant changes or hardships. The 25 components that made up the original scale are divided into five sub-scales. These include Self-Efficacy (SE), Perseverance (P), Internal Locus of Control (ILC), Family and Social Networks (FSN), and Coping and Adaptation (CA) respectively. From 20 to 100 points can be calculated using the scale. By combining the results of all items in the RSA test after eight of them, a total RSA score can be determined. (16). Savi et al. reported the Cronbach's Alpha value of the scale as 0.71. In this study, it was 0.87.

•Maslach Burnout Inventory (MBI): It was preferred to employ the Maslach and Jackson (1986) MBI, the Turkish adaption and validity-reliability study of which was carried out by Ergin (1992) to ascertain the participants' burnout level. The scale has a total of 22 items and assesses burnout using three subscales: personal achievement (PA), desensitization (D) and emotional burnout (EB). Every sub-scale is evaluated independently. For each item, the EB, D, and PA sub-scale scores are calculated as follows: never (0), very rarely (1), occasionally (2), frequently (3) and always (4). The high level of burnout is indicated by the high score in the EB and D subscales and the low score in the PA subscale. The expressions related to EB (Emotional Burnout) and D (Depersonalization) tend to be negative while statements regarding PA (Personal Accomplishment) are typically positive. In this study, we derive four distinct evaluation scores, which include general burnout and sub-scale scores, from the Maslach Burnout Inventory (MBI). The Cronbach's Alpha values for the MBI in this study are recorded at 0.89.

Ethics

Written approval for the study was acquired from the Ministry of Health Scientific Research Platform (03/06/2020-E.9355, number: 9234550/044/), as well as the scientific research ethics committee of a nearby institution (03/06/2020-E.9355) (2020-11-03T16_07_24.xml). In order to use scales in the study, permission was obtained through e-mail from the authors who conducted the Turkish validation study of the scale. According to the Helsinki Declaration's requirements and the information statement at the top of the research form, the data were gathered from "volunteer participants who reported not having any psychiatric illness diagnosed by a physician." In accordance with the idea of volunteering, every participant provided their informed consent.

Statistical Analysis

The SPSS-22 program was used to examine the research's data, and statistical analysis, error checks, and table creation were carried out. Number

and percentage values were given in statistical evaluations. Prior to normality analyses, lost data, and extreme value extractions were performed. Afterward, histogram drawings were made to comply with the normal distribution, skewness, and kurtosis values were examined and Kolmogorov-Smirnov analyses were performed. Chi-square analysis was conducted to determine whether sociodemographic characteristics made a difference in terms of resilience and burnout. On the other hand, multivariate hierarchical regression analysis was conducted to determine the effect of burnout on resilience. $p < 0.05$ was considered as a statistical significance level.

Results

Sociodemographic Characteristics of Participants

The ages of the participants in the study ranged from 24 to 60 years old, with a mean age of 35.75 ± 7.05 (Min - Max: 24 - 60 years). The profession's typical length of service is 11.05 ± 7.32 years (from 1 to 37 years). Table 1 displays a few sociodemographic traits of the individuals. As can be seen, 24.4 percent of doctors and 93.5 percent of their friends reported that they caught Covid-19.

Comparison of RSA and MPI Scores and Sociodemographic Characteristics of the Participants

Table 2 shows the distribution of RSA-MBI and sub-scale scores for physicians. The mean emotional exhaustion scores were found high. Table 3 displays a comparison of the participants' RSA and MBI scores with their sociodemographic details. This study also examined whether the MBI subscales affected burnout levels in relation to some physician traits. Accordingly;

•It was found that a number of factors contributed to the emotional burnout of physicians, including being under 35 years old ($p = 0.000$), not choosing their profession willingly and fondly ($p = 0.002$), not loving it now ($p = 0.000$), and working for 21 or more years ($p = 0.048$).

•It was found that a number of factors contributed to the desensitization of physicians, including being 35 years old or younger ($p = 0.000$), not choosing their profession voluntarily and lovingly ($p = 0.029$), not loving it now ($p = 0.000$), not being satisfied with the institution they work in ($p = 0.000$), and working for 21 years or more ($p = 0.002$).

•It was shown that being unmarried ($p = 0.031$), working for 5 years or less ($p = 0.012$), being 35 years or younger ($p = 0.000$), and not currently loving their career ($p = 0.000$) were all significant factors in the personal achievement of the doctors.

Correlation Between Participants' Resilience and Burnout Sub-Dimension Scores

We also conducted correlation analyses and found a correlation between resilience and emotional burnout ($r = -0.473$ $p = 0.000$), desensitization ($r = -0.388$ $p = 0.000$), personal achievement ($r = -0.596$ $p = 0.000$), age range ($r = 0.201$ $p = 0.001$), perception of income level ($r = -0.177$ $p = 0.003$), doing their job lovingly ($r = 0.402$ $p = 0.000$) and satisfaction with the unit they work in ($r = 0.451$ $p = 0.000$). There was no multicollinearity among the independent variables.

Predictors of Resilience

The multivariate hierarchical regression analysis (Table 4) revealed that the total resilience scale for adults were associated with emotional burnout ($\beta = -0.273$, $p = 0.000$) and personal achievement ($\beta = -0.486$, $p = 0.000$). According to Model 1, emotional burnout, desensitization and personal achievement alone explains 45% of the total variance ($F = 64.837$, $p = 0.000$). According to Model 2, age range, perception of income level, doing their job lovingly, satisfaction with the unit they work in explain 48% of total variance ($F = 31.323$, $p = 0.000$).

Table 1. Some characteristics of physicians (n = 246)

Characteristic	n	%
Gender		
Men	166	67.5
Women	80	32.5
Area of Specialty		
Fundamental Sciences	2	0.8
Internal Sciences	84	34.1
Surgical Sciences	89	36.2
No Specialty	71	28.9
Form of the institution where they are currently working		
State hospital (under the Ministry of Health)	123	50.0
University hospital	43	17.5
Private hospital	31	12.6
Primary healthcare service provider	49	19.9
Satisfaction with the unit they work in		
Very dissatisfied	25	10.2
Not satisfied	48	19.5
Indecisive	52	21.1
Satisfied	109	44.3
Very satisfied	12	4.9
Work-hour per week		
Less than 40 hours	84	34.1
41 hours or more	162	65.9

Table 2. Distribution of physicians' RSA and MBI and sub-scale scores (n = 246)

Scales and sub-scales	Number of items	Mean ± SD	Min - Max	%95 CI
SE	10	29.67 ± 8.97	3 – 40	28.55 – 30.80
FSN	4	12.50 ± 3.85	0 – 16	12.01 – 12.98
P	4	9.34 ± 3.72	0 – 16	8.87 – 9.80
ILC	3	6. 00 ± 2.29	1 – 12	5.71 – 6.29
CA	4	9.65 ± 3.10	2 – 16	9.26 – 10. 04
RSA	25	67.17 ± 16.53	23 – 100	65.09 – 69.25
EB	9	19.72 ± 7.45	0 – 36	18.78 – 20.66
D	5	7.28 ± 3.99	0 – 20	6.87 – 7.79
PA	8	11.87 ± 4.69	0 – 28	11.28 – 12.46
MBI	22	38.89 ± 12.45	4 – 73	37.32 – 40.45

Abbreviations: SE (Self-Efficacy), FSN (Family and Social Networks), P (Perseverance), ILC (Internal Locus of Control), CA (Coping and Adaptation); RSA (Resilience Scale for Adults), EB (Emotional Burnout), D (Desensitization), PA (Personal Achievement), MBI (Maslach Burnout Inventory)

Table 3: Distribution of physicians' RSA and MBI scores according to some characteristics (n = 246)

Characteristic	RSA	Test Value	MBI	Test Value
	Mean Rank		Mean ± SD	
Age range 35 years and under 36 years and older	 111.38 141.80	 U = 5458.50 **p = 0.001**	 41.62 ± 12.79 34.75 ± 10.72	 t = 4.392 **p = 0.000**
Perception of income level High income High expenses Income equals expenses	 137.44[a,b] 97.63[a] 117.86[b]	 KW= 9.234 **p = 0.010**	 36.75 ± 13.36[a] 42.73 ± 10.53[a] 39.79 ± 11.75	 F = 3.527 **p = 0.031**
Doing their job lovingly No Yes	 94.21 149.21	 U = 4164.00 **p = 0.001**	 46.07 ± 10.41 32.58 ± 10.55	 t = 10.07 **p = 0.000**
Satisfaction with the unit they work in Very dissatisfied Not satisfied Indecisive Satisfied Very satisfied	 62.76[a,-b,c,d] 107.54[a,e] 100.47[b,f] 152.73[c,e,f] 148.13[d]	 U = 45.949 **p = 0.001**	 49.12 ± 10.19[a,b,c] 48.41 ± 8.12 40.80 ± 9.96[a] 33.01 ± 10.73 24.50 ± 11.65[c]	 F = 32.381 **p = 0.000**

a,b,c,d,e indicate the groups from which the difference originates.

Table 4. Predictors of Resilience.

Variables	Resilience Scale for Adults				
	B	SD	β	t	p
Model 1					
Emotional Burnout	-0.564	0.123	-0.273	-4.580	0.000
Desensitization	-0.357	0.231	-0.092	-1.549	0.123
Personal achievement	-1.585	0.167	-0.486	-9.468	0.000
$R = 0.675$, $R^2 = 0.455$, $F = 64.837$, $p = 0.000$					
Model 2					
Emotional burnout	-0.285	0.151	-0.138	-1.886	0.061
Desensitization	-0.345	0.232	-0.089	-1.488	0.138
Personal achievement	-1.531	0.172	-0.470	-8.891	0.000
Age range	-0.452	1.540	-0.015	-0.293	0.770
Perception of income level	-1.173	0.790	-0.072	-1.485	0.139
Doing their job lovingly	0.059	1.920	0.002	0.031	0.975
Satisfaction with the unit they work	2.990	0.867	0.219	3.449	0.001
$R = 0.699$, $R^2 = 0.489$, $F = 31.323$, $p = 0.000$					

Discussion

The effects of the COVID-19 pandemic, which caught the world off guard, continue. The importance of doctors, who are first responders, in solving future health problems, as in this pandemic, cannot be ignored. For this reason, it is necessary to ensure the resilience of doctors, to prevent their burnout and to reveal the characteristics that can affect the resilience of doctors. Since the COVID-19 pandemic is still a situation we are experiencing, studies investigating its effects on physicians are insufficient. The number of these studies will increase in the coming years, but the studies available in the literature are mostly burnout studies on health personnel. The aim of this research was to determine the burnout and resilience levels of doctors. In addition, the sociodemographic characteristics of the doctors, which caused the difference in burnout and resilience, were examined. Finally, the predictive features of doctors' resilience were investigated.

Physicians had a great responsibility due to the COVID-19 pandemic that started in 2020. There are many studies reporting over 50% burnout and inadequacy in various specialties. For example, there are publications reporting burnout at rates up to 40% even during medical faculty studying (17). The fact that the working order has not been determined yet may have increased anxiety in healthcare professionals due to uncertainty. Uncertainty is known to increase anxiety (18). Physicians' anxiety levels were found high when healthcare professionals were evaluated among themselves in a study conducted during the COVID-19 pandemic (19).

It was observed in this study that the variables of gender, marital status, whether they had willingly chosen their profession did not make any difference in terms of RSA ($p > 0.05$). There are studies in which the psychological resilience and sub-scales of healthcare professionals do not differ between gender, marital status and smoking habits in the literature (20). These studies support our study. Looseley et al. found in their study on physicians that there was no difference according to gender but when the sub-scales were evaluated separately, desensitization was more common in men while the feeling of decreased personal achievement was more common in women (21). In general, it was shown in a study conducted in Sweden in 2010 that the burnout rate in women was higher compared to men (women 16%, men 10%) (22). There are also studies in the literature that do not report a significant correlation between gender and burnout (23). Being single has been shown to increase the risk of burnout. Smoking and alcohol use have been observed to be ineffective on burnout (21).

Age and income level perception variables are the variables that make a difference when the characteristics of physicians scores are examined in terms of RSA. Güngörmüş et al. (2015) concluded that there was no significance between age and psychological resilience in a study conducted on 437 nursing students in a faculty of health sciences. They concluded in the same study that psychological resilience increased as income levels increased (20). It is thought according to these results that healthcare professionals increase their satisfaction with their work-life because they receive a recompense for their work.

Burnout is an important problem that affects physicians as well as all health personnel. Therefore, it is vital to identify physicians experiencing burnout and to correct the underlying problems. It was found that

individuals with high burnout rates were under 35 years old, described their expenses as high, disliked their present career, and/or were dissatisfied with the units in which they worked. According to a research with 2162 Canadian workers, men and women between the ages of 20 and 35 were more likely than other age groups to experience higher levels of burnout. (24). The highest burnout was found between 25-30 years of age when the age groups were evaluated in another study measuring the burnout level of anesthesiologists and reanimation physicians (25). The age factor is the factor that gives the most consistent results on burnout. Advanced age is thought to protect from burnout (26). It was seen when the income status was examined that the lack of income increased the burnout level in the studies conducted by Sharma and Terzi with their teams (27).

In our research, we found that emotional burnout and personal achievement negatively predicted the resilience of physicians. We determined that being satisfied with the workplace is a positive predictor of resilience. Yıldırım and Solmaz also reported that burnout in the pandemic was a negative predictor of resilience as in our study (28). In our study, we found that the depersonalization dimension was not predictive of resilience. Depersonalization was also observed in a longitudinal study conducted by Müller et al. In that longitudinal study, it was explained that depersonalization increased in 2021 compared to 2020 (29). In a study by Ferreira et al., the predictors of resilience in the covid-19 pandemic process were explained as age and education (14). In the study of Giuseppe et al., it was reported that there is a negative predictive effect between burnout and resilience (30).

Conclusion

A team, rather than a single doctor, can apply health techniques in a healthy way. The doctor is unquestionably the team's leader. Burnout and feelings of inadequacy in doctors have an impact not just on the doctor and their family but also on their entire team at work. Conflicts within the team also rise as a result of the physician's growing sense of inadequacy and fatigue over time. The entire team suffers, and along with these disagreements, other workers can also be driven into burnout. All findings indicate that physician burnout and inadequacy are significant issues that have a wide-ranging impact. A problem that affects so many people needs to be questioned and resolved together with all the underlying reasons.

Limitations

The data of this research were collected through the questionnaire. More qualitatively, participatory observation could be made to access the data. However, both the necessity of isolation and the variable working hours of physicians did not make this possible. Another limitation of the research is the collection of data over a certain time period. The research could be in the form of a cohort study. However, targeting assessment of the situation for the first data necessitated planning the research method in this way. Some data of the study are based on physicians' self-evaluation. Some physicians may have avoided or exaggerated expressing their real condition.

Declarations

This research was presented as a full-text oral presentation at the "4th International Health Sciences and Innovation Congress," which took place online in Azerbaijan between July 5 and 6, 2021.

Ethics approval and consent to participate: Received from the clinical research ethics committee of Bingol University (03/06/2020-E.9355, number: 9234550/044). The information text created within the scope of the Helsinki criteria was presented to the participants together with the questionnaire.

Consent for publication: Not applicable.

Availability of data and material: The data that support the findings of this study are available from the corresponding author [CY] upon reasonable request.

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