

The Effect of Covid-19 Phobia on Perceived Stress: The Sample of Prehospital Emergency Care Professionals

Covid-19 Fobisinin Algılanan Strese Etkisi: Hastane Öncesi Acil Sağlık Hizmetleri Çalışanları Örneği

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Abstract

In this study, the effect of Covid-19 phobia on perceived stress in prehospital emergency care professionals was investigated. No sampling method was implemented in this study, and it was tried to access the whole population ($n=102$). The study was conducted between July 2020 and August 2020. The study data were collected through the face-to-face interview. Descriptive statistics, t test, ANOVA, Pearson's correlation and simple regression analysis were used to analyze the data. The results of the analysis revealed that the perceived stress levels were moderate or high in approximately one third of the prehospital EMS professionals. The participants' Covid-19 phobia levels were low. The perceived stress levels were significantly higher in the participants who were 30 years old or younger, single or working with the title of paramedic. Similarly, Covid-19 phobia levels were also significantly higher in women, participants aged 30 and under, and those diagnosed with Covid-19. There was a moderate ($r=0.68$), positive and significant correlation between Covid-19 phobia levels and perceived stress levels. Therefore, as the Covid-19 phobia levels of prehospital EMS professionals increased, so did their perceived stress levels. The result of the regression analysis demonstrated that a one-unit increase in EMS professionals' Covid-19 phobia levels increased their perceived stress level by 0.46. A correlation was determined between Covid-19 phobia and the perceived stress in prehospital EMS professionals and thus it is recommended that larger-scale studies should be conducted to better determine this relationship and that interventional practices should be planned.

Keywords: Covid-19 Pandemic, Phobia, Stress, Mental Health, Health Personnel

Öz

Bu çalışmada, hastane öncesi acil sağlık hizmetleri çalışanlarında Covid-19 fobisinin algılanan stres üzerindeki etkisi incelenmiştir. Çalışmada örneklem seçimine gidilmemiş olup, tüm evrene ulaşılmaya çalışılmıştır ($n=102$). Çalışma Temmuz 2020-Ağustos 2020 tarihleri arasında yürütülmüş ve çalışma verileri yüz yüze olarak toplanmıştır. Verilerin analizinde betimsel istatistikler, t, ANOVA, Pearson korelasyon ve basit regresyon analizleri kullanılmıştır. Yapılan analizler sonucunda, katılımcıların yaklaşık üçte birinin algılanan stres düzeylerinin orta veya yüksek olduğu saptanmıştır. Katılımcıların Covid-19 fobisi düzeylerinin ise düşük olduğu belirlenmiştir. Algılanan stres açısından, 30 yaş ve altında olan, bekâr olan ve paramedik unvanıyla çalışan katılımcıların stres düzeyleri anlamlı şekilde daha yüksek bulunmuştur. Benzer şekilde kadınların, 30 yaş ve altındaki katılımcıların ve Covid-19 tanısı alanların Covid-19 fobisi düzeyleri anlamlı şekilde daha yüksek bulunmuştur. Covid-19 fobisi düzeyleri ile algılanan stres düzeyleri arasında orta düzeyde ($r=0,68$), pozitif yönlü ve anlamlı bir ilişki tespit edilmiştir. Dolayısıyla, hastane öncesi acil sağlık hizmetleri çalışanlarının Covid-19 fobisi düzeyleri yükseldikçe, algıladıkları stres düzeyleri de artış göstermektedir. Ayrıca, yapılan regresyon analizi sonucunda katılımcıların Covid-19 fobilerindeki bir birimlik artışın, algıladıkları stres düzeyini 0,46 oranında artırdığı ifade edilebilir. Hastane öncesi acil sağlık hizmetleri çalışanlarında Covid-19 fobisi ve algılanan stresin birbiriyle ilişkili olduğu ve bu ilişkinin belirlenmesine yönelik daha geniş çaplı araştırmaların yapılması ve buna yönelik girişimsel uygulamaların planlanması önerilmektedir.

Anahtar Kelimeler: Covid-19 Pandemisi, Fobi, Stres, Ruh Sağlığı, Sağlık Personeli

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1. Introduction

Coronavirus disease (Covid-19), was first seen in Wuhan, China in December 2019, and it spread to other countries and became a pandemic affecting the whole world (Hui et al., 2020). The virus still spreads widely and has psychological, social, political and economic effects. Countries have imposed various restrictions to reduce the spread of the virus. Among these are the interruption of face-to-face education in many countries, continuation of the process with distance education, having those who are at risk stay in quarantine at home or in hospitals, and imposing restrictions on entering and exiting cities and going abroad (Chinazzi et al., 2020). Also, although it varies from country to country, large events and worships were banned and houses of worships and shopping malls were shuttered (Hoşgör et al., 2021). Therefore, these limitations have physical and mental effects on individuals' lives. However, healthcare workers continued to work non-stop and are faced with critical situations. Especially at the beginning, the insufficiency of the measures for the pandemic, and the lack of guidelines on functioning negatively affected this process (Alwidyan et al., 2020). Among these are the risk of catching the Covid-19 virus and spreading it to their immediate surroundings, experiencing the symptoms that develop due to catching the virus, the possibility of not taking adequate protection measures at the scene, and their physical and mental health's being adversely affected. Therefore, healthcare professionals are among the most vulnerable groups to psychological stress and the other symptoms of mental illnesses (Lai et al., 2020). During the pandemic process, professionals working in emergency medical services (EMS) emphasized that they suffered more stress and anxiety. However, stress can facilitate task performance to a certain extent, it becomes problematic when the demands outweigh the perceived resources to cope (Folkman and Lazarus, 1988). The review of the literature has demonstrated that there are studies revealing that healthcare workers have suffered high levels of stress in past epidemic periods (Tam et al., 2004).

Of healthcare personnel, those working in EMS are in contact with people in need of health care from various aspects in the first place and they are considered as an important part of the health system (Hoşgör et al., 2020). EMS professionals provide and maintain health care for individuals, in extraordinary situations such as natural disasters, epidemics. In such cases, they may face the risk of injury and death. For instance, during the Ebola virus outbreak in 2014, healthcare professionals were exposed to the virus 21 to 32 times more than did general population (WHO, 2020). Therefore, because of the nature of the work they do, there is no room for errors and what they do affects the human life, EMS professionals feel more obliged to be more careful and attentive. In addition, their working on shifts, being unprepared for extraordinary situations, and work-specific features can cause healthcare workers to be more tense and stressful (Devnani, 2012). The Covid-19 outbreak, a similar situation, have adversely affected healthcare workers' current levels of stress, fear, anxiety and depression (Alwidyan et al., 2020).

Given the effects of epidemics (such as H1N1, SARS, MERS, Ebola), individuals have been faced with various psychological difficulties. Among these are being diagnosed with a mental illness, suffering stress, fear, panic, anxiety and phobias (Liu et al., 2015; Kim and Song, 2017). Similarly, the Covid-19 pandemic has led to massive changes in the whole society, has caused individuals to suffer intense fear, stress and anxiety. The level of stress and fear experienced is sometimes involuntarily at high levels and prevents the individual from performing his or her thoughts and daily functions. The fear of Covid-19 stems from the fact that the virus is new and is not known well and that how bad the current epidemic could be. Fear and anxiety of being infected, and being in close or constant contact with infected patients are also a major concern for healthcare professionals (Ehrlich et al., 2020).

Intense experience of virus-related anxiety is called "phobia". Covid-19 phobia (coronaphobia) has been associated with mental health problems such as depression, general anxiety, death anxiety, suicidal thoughts, and extreme despair (Lee et al., 2020). Phobias are specific forms of anxiety disorders characterized by constant and extreme fear of an object or situation (APA, 2013). The phobia associated with Covid-19 (Covid-19 phobia) is included in specific phobias. As in specific phobia, the behavioral response given by the individual in Covid-19 phobia is different from the response given by the society and the person suffers intense fear and anxiety. Healthcare workers suffering from Covid-19 phobia have focused a large part of their attention on the threat of the disease, which negatively affects their own lives, family lives and work lives, and the care they provide for the patient (Lee et al., 2020; Mora-Magaña et al., 2020). In particular, it has been determined that prehospital EMS professionals, who are constantly faced with the threat of viruses during the current pandemic, experience mental problems and are exposed to risky situations that they cannot take precautions while performing their duties during the outbreak (Spoorthy et al., 2020). Therefore, taking into account and examining the virus-related stress and phobia situations experienced by healthcare professionals has gained in importance. The screening of studies conducted on the subject has revealed that the number of studies is not many (Mora-Magaña et al., 2020). Based on this information, in this study, the relationship between Covid-19 phobia and perceived stress in prehospital EMS professionals was examined in terms of different descriptive variables.

2. Materials and Methods

2.1. Objective

The purpose of the authors of this study was to investigate the effect of Covid-19 phobia on perceived stress levels of prehospital EMS professionals.

2.2. The Study Population and Sampling

This cross-sectional and correlational study was conducted between July 2020 and August 2020 in a province in western of Turkey with prehospital EMS professionals. The pre-hospital emergency medical services are similar to those abroad. The participants work as a Paramedic (Emergency Medical Technician-Paramedic), EMT-Intermediate and ambulance driver. Drivers are also supposed to have an emergency medical technician certificate (EMT-I or EMT-P). The teams work on shifts. The team leader is a paramedic, and the physicians are involved in the remote consultation phase (e.g. intervening with the patient, and administrating approved drugs). Within the scope of the study, no sampling method was implemented, and the whole population was tried to be accessed. The study data were collected from 102 participants. The sample's power to represent the population was calculated as 63%.

2.3. Data Collection Tools and Method of the Study: One of the scales used in the study, in which the survey method was used to collect data, is the Covid-19 Phobia Scale. The scale was developed by Arpacı et al. (2020) to measure the fear developing against the corona virus. The responses to the items are rated on a 5-point Likert type scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). The scale consists of four subscales: "Psychological", "Psychosomatic", "Social" and "Economic". The overall Cronbach's Alpha coefficient of the original scale which was calculated as 0.93 was also 0.93 in the present study. Alpha values of the subscales varied between 0.85 and 0.90 in the original scale and between 0.79 and 0.85 in the present study. The higher the score obtained from the scale is the higher the participants' general coronavirus phobia level is. Another scale used within the scope of the study is the Perceived Stress Scale developed by Cohen et al. (1983). The scale consists of 14 items whose responses are rated on a 5-point Likert type scale ranging from 0 (Never) to 4 (Very often) in order to measure how stressful a person perceives some situations in his or her life. While the Cronbach's Alpha coefficient of the original scale was 0.85, it was 0.87 in the present study. The cut-off points of the scale are as follows: 11-26: low stress level; 27-41: moderate stress level; 42-56: high stress level. The higher the score obtained from the scale is the higher the person's perceived stress level is.

2.4. Ethical Approval: The approval to conduct the present study was obtained from a public university ethics committee (decision number: 2020-88, decision date July 06, 2020). The study was carried out in accordance with the 1964 Helsinki Declaration and the ethical standards of the National Research Committee. Before the data collection phase was started, the informed consent form was obtained from the participants. The authors followed The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for reporting the study (Elm et al., 2014).

2.5. Statistical Analysis: The IBM SPSS V.22.0 (Statistical Package for the Social Sciences for Windows) was used for the analysis of the collected data. Before deciding on the analysis to be used within the scope of the study, the kurtosis and skewness values of each scale were examined and it was concluded that the relevant values were between -2 and 2 as referred to by Tabachnick and Fidell (2007). Therefore, it was concluded that the data had a normal distribution. Within the scope of the study, in addition to the descriptive statistics such as percentages, frequencies, arithmetic mean, and standard deviation, the t and ANOVA tests, Pearson correlation analysis and simple regression analysis were used. The statistical significance level of the findings obtained was set at 0.05. The confidence interval was 95%.

3. Results

In the present study, of the pre-hospital EMS professionals, half were paramedics (EMS-P), more than half were men (55.9%), 61.8% were in the 30 and under age group, 51.0% were single, 52.0% had at least 8 years of professional experience and 62.7% were associate degree graduates. On the other hand, of the participants, most (93.1%) did not have a history of a chronic disease and 92.2% were not diagnosed with Covid-19. In addition, less than half of the participants (45.1%) stated that their income was lower than their expenses (Table 1).

Table 1. Descriptive Characteristics of the Participants

Characteristics		f	%	Characteristics		f	%
Sex	Men	57	55.9	Educational status	High school	3	2.9
	Women	45	44.1		Associate Degree	64	62.7
Age	≤ 30 years	63	61.8		License	28	27.5
	≥ 31 years	39	38.2		Postgraduate	7	6.9
Marital status	Single	52	51.0	Professional title	EMT-Intermediate	42	41.2
	Married	50	49.0		Paramedic	51	50.0
Presence of a Chronic Disease	Yes	7	6.9		Driver	2	2.0
	No	95	93.1		Physician	7	6.9
Being diagnosed with Covid-19	Yes	8	7.8	Perceived income	Income = Expenses	41	40.2
	No	94	92.2		Income < Expenses	46	45.1
Length of Service in the Profession	≤ 7 years	49	48.0		Income > Expenses	15	14.7
	≥ 8 years	53	52.0	Total	102	100.0	

EMT: Emergency Medical Technician

The mean Covid-19 Phobia levels of the participants were low (2.43). The mean values related to the subscales of the Covid-19 Phobia scale were moderate for the Psychological (3.00) and Social (2.67) subscales, low for the Economic subscale (2.07), and very low for the Psychosomatic subscale (1.77). On the other hand, the participants' perceived stress levels were very low (1.76) (Table 2).

Table 2. Descriptive Statistics Related to the Scales

Scales	Mean*	SD	Minimum	Maximum
Covid-19 Phobia Scale	2.43	0.72	1.00	5.00
<i>Psychological Subscale</i>	3.00	0.89	1.00	5.00
<i>Psychosomatic subscale</i>	1.77	0.72	1.00	4.80
<i>Social Subscale</i>	2.67	0.90	1.00	4.80
<i>Economic subscale</i>	2.07	0.83	1.00	5.00
Perceived Stress Scale	1.76	0.62	0.00	4.00

* 1.00-1.80: Very Low, 1.81-2.60: Low, 2.61-3.40: Moderate, 3.41-4.20: High, 4.21-5.00: Very High

Of the participants, 68.6% had a low level, 24.5% had a moderate level, and 6.9% had a high level of perceived stress (Table 3).

Table 3. Perceived Stress Level Groups of the Participants

Perceived Stress Level	f	%
Low	70	68,6
Moderate	25	24,5
High	7	6,9

Statistically significant correlations were determined between the participants' ages, marital status, whether they were diagnosed with Covid-19 and their professional titles and their perceived stress levels. In terms of perceived stress, significant differences stemmed from the variables such as "being 30 years old and under", "being single", "being diagnosed with Covid-19" and "working as a paramedic" (Table 4). In addition, statistically significant correlations were determined between the participants' Covid-19 phobia and variables such as sex, age, and being diagnosed with Covid-19. In terms of Covid-19 phobia, significant differences stemmed from the following variables: "being a woman", "being under 30", "being diagnosed with Covid-19" (Table 4).

Table 4. Descriptive Characteristics of the Participants, and T and ANOVA tests for the Scales

Variables	Participants' Characteristics	Perceived Stress Level				Covid-19 Phobia			
		Mean	SD	t	p	Mean	SD	t	p
Sex	Men	1.65	0.55	-1.91	0.060	2.21	0.58	3.51	0.001*
	Women	1.89	0.67			2.69	0.81		
Age	≤ 30 years	1.92	0.65	3.45	0.001*	2.59	0.82	3.09	0.003*
	≥ 31 years	1.50	0.47			2.16	0.41		
Marital status	Single	1.88	0.70	2.01	0.048*	2.47	0.77	0.68	0.500
	Married	1.64	0.50			2.38	0.67		
Presence of a Chronic disease	Yes	1.78	0.50	0.05	0.960	2.29	0.83	0.50	0.615
	No	1.76	0.63			2.44	0.72		
Being diagnosed with Covid-19	Yes	2.22	0.96	2.23	0.028*	3.28	1.13	3.66	0.000*
	No	1.72	0.57			2.35	0.64		
Length of service in the profession	≤ 7 years	1.25	1.06	-1.95	0.122	2.83	1.17	0.47	0.660
	≥ 8 years	2.98	0.98			3.45	1.62		
Variables	Participants' Characteristics	Mean	SD	F	p	Mean	SD	F	p
Educational status	High school	1.52	1.00	1.50	0.220	2.28	0.41	0.70	0.554
	Associate Degree	1.86	0.62			2.48	0.83		
	License	1.61	0.56			2.27	0.50		
	Postgraduate	1.59	0.57			2.59	0.52		
Professional title	EMT-Intermediate	1.59	0.59	4.08	0.009*	2.29	0.61	1.55	0.206
	Paramedic	1.96	0.62			2.57	0.83		
	Driver	1.50	0.10			1.98	0.53		
	Physician	1.43	0.32			2.29	0.14		
Perceived income	Income = Expenses	1.74	0.71	0.14	0.200	2.47	0.88	0.87	0.823
	Income < Expenses	1.80	0.62			2.42	0.62		
	Income > Expenses	1.71	0.28			2.33	0.58		

*p<.05, EMT: Emergency Medical Technician

There was a moderate ($r = 0.680$), positive and significant correlation between the participants' perceived stress levels and their Covid-19 phobia levels. In other words, as the COVID-19 phobia levels of the emergency healthcare workers increased, so did their perceived stress levels (Table 5).

Table 5. Correlation between the Perceived Stress Level and Covid-19 Phobia

		Perceived Stress Scale
Covid-19 Phobia Scale	Pearson Correlation	0.680**
	Sig. (2-tailed)	0.000
	N	102

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

The Covid-19 phobia affected the perceived stress levels of the participants by 46.2% (F: 86.018; p <0.000). In other words, a one-unit increase in the Covid-19 phobia levels of emergency healthcare workers caused 0.46 units of positive change in their perceived stress levels. The t, β and R^2 values showing the significance of the regression coefficients also confirm this finding (t = 9.275; β = 0.680; R^2 = 0.462) (Table 6).

Table 6. Effect of Covid-19 Phobia on Perceived Stress

Variables	B	Standardized Error	Beta	t	p
(Constant)	1.023	0.160	0.680	6.379	0.000
Covid-19 Phobia	0.796	0.086		9.275	0.000
R: 0.680		R^2 : 0.462		F: 86.018 (p<0.000)	

Dependent Variable: Perceived Stress

4. Discussion

In an environment where the Covid-19 pandemic massively affects public health physically and psychologically, it is known that healthcare professionals fulfill their duties in all conditions uncompromisingly. Likewise, prehospital EMS professionals fulfill this challenging tasks. In the present study, which was completed with the participation of 102 pre-hospital EMS professionals, the participants were observed to have a low level of Covid-19 phobia. Similarly, the participants' perceived stress levels were determined as very low. The review of the studies in the literature on Covid-19 demonstrated that the number of studies conducted on prehospital EMS professionals is not many. The participation rate of EMS professionals in studies conducted with healthcare professionals is low (Alwidyan et al., 2020). This is due to the fact that they do not have enough time because they work in the field and they are not easily accessible.

In the present study, when the stress perceptions of the participants were grouped, it was concluded that more than half of them were in the low stress level group, approximately a quarter of them were in the moderate stress level group, and approximately 7% were in the high stress level group. The review of studies on perceived stress in healthcare workers in the literature indicated that while the stress level was low in some recent studies (Polat and Coşkun, 2020), it was moderate or high at the onset of the pandemic (Babore et al., 2020; Islam et al., 2020). These results indicate that the fear and stress of the virus associated with the pandemic is felt less and less by healthcare professionals every day. Therefore, it would not be wrong to interpret that the participants' low level of Covid-19 phobia and stress was associated with the effect of time. It is striking that the number of studies conducted with healthcare professionals on Covid-19 phobia is insufficient. In several studies, Covid-19 phobia has been associated with stress, anxiety and fear (Lai et al., 2020; Islam et al., 2020). In the present study, the low level of phobia is thought to be associated with the decrease in sensitivity to the virus in individuals over time, the updating of the information about the virus, the development of precautions for healthcare workers and the publication of guidelines (Leong et al., 2020).

In the present study, the perceived stress levels were significantly higher in the participants "aged 30 and under", "diagnosed with Covid-19" and "working with the title of paramedic". These results are in line with previous literature conducted on the issue (Toreles et al., 2020; Göksu and Kumcağız, 2020). On the other hand, according to studies in the literature, among the factors affecting healthcare professionals' perceived stress levels were variables such as being in close contact with individuals at risk of Covid-19, sex, marital status, economic status, being a parent, or living alone (Flesia et al., 2020).

In most theories, it is also stated that the length of service in the profession and age affect the stress level of individuals. It is stated that in the learning and internalization of clinical skills, an individual's age, cognitive state and the length of service in the profession are important in terms of stress management and effective patient care (Pardee, 1990). Since paramedics work as a team leader, have to assume a decision-making role in critical situations and take on more responsibility also cause them to feel more stressed. Individuals diagnosed with Covid-19 state that the processes and requirements related to the disease affect them more. Therefore, they suffer from stress more in order not to experience the same things again (Alwidyan et al., 2020).

In the present study conducted with prehospital EMS professionals, it was determined that the Covid-19 phobia levels were significantly higher among the participants who were "women", "aged 30 and under" and "diagnosed with Covid-19". In the present study, the factors affecting Covid-19's phobia were that individuals' perception and mentality of events, individual sensitivity, culture, women being more emotionally sensitive, being young (or being novice) and experiencing difficulties of the disease (Lee et al., 2020).

It was concluded that there was a moderately positive significant relationship between the participants' Covid-19 phobia levels and their perceived stress levels. Covid-19 phobia is associated with high anxiety and stress experienced by the individual regarding his / her own health, loss of beloved one(s), increased social media use, and lock down / stay at home process (Mertens et al., 2020; Toprak et al., 2020). Obtaining a similar result in the present study is not an unexpected finding.

It was concluded that Covid-19 phobia explained the stress levels perceived by the participants at a moderate level, which suggests that Covid-19 phobia is effective on perceived stress. In studies (Mertens et al., 2020; Lee et al., 2020; Mora-Magaña et al., 2020) conducted on Covid-19 phobia, the stress levels of individuals were in parallel with their Covid-19 phobia levels, which explains this situation.

5. Limitations

In the present study, especially during the pandemic period, some difficulties encountered during the data collection phase (such as the fact that the team in charge of the relevant emergency health services station were in the field, were not accessible for a long time, worked intensively, time was not sufficient) constituted the most important limitation of this study to the point of accessing the study population.

6. Conclusion and Recommendations

In the present study, the effect of Covid-19 phobia on the perceived stress levels of prehospital EMS professionals was investigated. The results of the study indicated that the participants' Covid-19 phobia levels were low and their perceived stress levels were even lower. Of the participants, those who were 30 years old or younger, diagnosed with Covid-19 and working as a paramedic had higher levels of perceived stress. Covid-19 phobia levels were higher in the participants who were women, were 30 years old or younger, and were diagnosed with Covid-19. In addition, it can be considered as a striking result that there was a positive significant relationship between Covid-19 phobia and perceived stress levels, and that Covid-19 phobia accounted for the stress level by 46%. As the Covid-19 phobia levels of individuals increased, so did their perceived stress levels, which revealed the relationship between these two variables. Given the review of the findings of the study, it is recommended to conduct larger-scale studies addressing these variables in EMS professionals and to make and implement interventional plans for the Covid-19 phobia and stress perceived by healthcare professionals.

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