Effect of Covid-19 on Social Support Perception and Stress in Healthcare Workers at a Tertiary Hospital

Bir Üniversite Hastanesindeki Sağlık Çalışanlarında Covid-19'un Sosyal Destek Algısına ve Strese Etkisi

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ABSTRACT

Aim: Healthcare workers may be at higher risk of Covid-19 transmission due to sharing the same setting with infected people for a long time, increasing their susceptibility to stress. This study set out to identify the effect of Covid-19 on social support perception and stress levels in healthcare workers based at a tertiary hospital.

Material and Method: This is a descriptive and cross-sectional study. The healthcare workers practicing at a tertiary hospital constituted the study population. Those giving their informed consent to enroll in the study between April 18 and May 18, 2020, were included in the study. Data were collected through an introductory information form, the Acute Stress Symptom Scale (ASSS), and the Multidimensional Scale of Perceived Social Support (MSPSS). The statistical analyses were performed with the Statistical Package for the Social Sciences v.24.0. The data set was evaluated through mean scores, standard deviation, number and percentage, Mann Whitney U test, Kruskal Wallis Variance Analysis, and Spearman Correlation Analysis.

Results: The mean ASSS score of healthcare workers was 1.40±0.83, while the total MSPSS score was 70.9±14.56. The mean scores of sub-dimensions in the perceived social support scale were identified as family 25.07±4.78, friends 22.57±6.01, and significant other 23.27±6.94. A weak, negative correlation was revealed between healthcare workers' ASSS scores and the sub-dimensions of family, friends, significant other, and the total scale score (p<0.05).

Conclusion: It can be concluded that healthcare workers' acute stress symptom level was mild, while their multidimensional social support perception was relatively high. Most notably, in risky times such as pandemics, it may be important to intensify social support by mobilizing social support resources to minimize their stress level and organizing regular training programs explaining the importance of this effort for healthcare workers.

Key words: *Covid-19; healthcare worker; social support perception; stress*

ÖZET

Amaç: Sağlık çalışanları, enfekte kişiler ile aynı ortamda uzun süreli olmalarından dolayı daha fazla covıd-19 bulaş riski ile karşı karşıya kalabilmekte, bundan kaynaklı olarak da daha fazla stres altında olabilmektedirler. Bu çalışma bir üniverste hastanesindeki sağlık çalışanlarında covid-19'un sosyal destek algısına ve strese etkisini belirlemek amacıyla planlanmıştır.

Materyal ve Metot: Araştırma tanımlayıcı ve kesitsel nitelikte bir araştırmadır. Araştırmanın evrenini bir üniversite hastanesinde çalışan sağlık çalışanları oluşturmuştur. Araştırmaya 18 Nisan-18 Mayıs 2020 tarihleri arasında çalışmaya katılmayı kabul edenler alınmıştır. Tanıtıcı bilgi formu, Akut Stres Belirti Şiddeti Ölçeği (ASBÖ) ve Çok Boyutlu Algılanan Sosyal Destek Ölçeği (ÇBASDÖ) ile veriler toplanmıştır. Bu veriler "Statistical Package for the Social Sciences 24.0" kullanılarak analiz edilmiştir. Verilerin değerlendirilmesinde ortalama, standart sapma, sayı ve yüzde, Mann Whitney U testi, Kruskal Wallis Varyans Analizi ve Spearman Korelasyon Analizi kullanılmıştır.

Bulgular: Sağlık çalışanlarının ASBÖ puan ortalaması 1,40±0,83, ÇBASDÖ toplam puanı 70,9±14,56'dır. Katılımcıların sosyal destek ölçeği alt boyut ölçek puan ortalamaları Aile 25,07±4,78, Arkadaş 22,57±6,01 ve Özel Bir İnsan 23,27±6,94 olarak bulunmuştur. Sağlık çalışanlarının ASBÖ ile Aile, Arkadaş, Özel Bir İnsan alt boyutları ve ölçek genel toplam arasında zayıf düzeyde, negatif bir ilişki olduğu saptanmıştır (p<0,05).

Sonuç: Sağlık çalışanlarının akut stres belirti düzeyinin hafif olduğu, çok boyutlu sosyal destek algılarının ise oldukça yüksek olduğu sonucuna varılmıştır. Özellikle pandemi gibi riskli dönemlerde, sağlık çalışanlarının stres düzeylerini düşük seviyede tutmak için sosyal destek kaynaklarını harekete geçirerek sosyal desteğin artırılması ve bunun sağlık çalışanları için önemini anlatan düzenli eğitim programlarının hazırlanması önemli olabilir.

Anahtar kelimeler: *Covid-19; sağlık çalışanı; sosyal destek algısı; stres*

Introduction

The World Health Organization announced a new pandemic on March 11, 2020[1]. Due to the pandemic conditions in Turkey, extraordinary measures have been taken to contain the viral infection from 2020 until now. Our lives have inevitably undergone radical shifts in such a critical situation because of mobility restrictions and social relationships. The psychosocial impact of infectious diseases on an individual, social and international scale is well-established[2]. With the announcement of the pandemic and the adopted measures, assessments such as the disrupted routine of daily life, feelings of uncertainty, fears of infection, and thoughts of inhabiting an anti-hygienic area unveil the psychological effects of the pandemic as well as its physiological impact. From the past to the present, pandemics have been responsible for many casualties, physical strains, and mental problems. Healthcare workers, whom many different infectious diseases have afflicted, are among the groups with the highest potential to be affected by future epidemics[3]. These professionals may be at higher risk of Covid-19 transmission than other members of the society due to sharing the same setting with infected people for a long time, increasing their susceptibility to stress[4]. Previous research has suggested that their stress during past epidemics (SARS and MERS) was at severe levels[5,6]. In addition, healthcare workers reportedly experience a feeling of uncertainty and stigmatization due to caring for these people, going to work reluctantly, or planning to resign from their posts. Thus this long-term tension heightens their level of stress[4,7]. The ever-increasing number of positive and suspicious cases, heavy workload, lack of personal protective equipment, and absence of specific drugs add to their emotional burden. The research on healthcare workers reveals that they developed several psychological reactions during the 2003 SARS outbreak[8,9]. Further studies on the SARS outbreak also report that healthcare professionals in contact with infected patients were afraid of transmitting the disease to their families, friends, and co-workers[8,10].

Working with Covid-19 patients has been turned into a means of stigmatization by society. Healthcare workers may be stigmatized as community members who need to be avoided in social terms because of their contact with suspected or infected cases, causing them not to benefit from social support affordances sufficiently. In addition, healthcare workers in risky areas socially isolate themselves not to contaminate the disease, especially those at home with underlying diseases who stay away from their families and homes. Long shifts, an ever-increasing number of patients, working with protective equipment, the physical strain caused by protective equipment, being constantly alert due to the risk of infection, loss of spontaneity and autonomy, and the need to follow up-to-date information about the outbreak further multiply the stress produced by Covid-19[2,4].

Stress can be described as the organism's reaction to any change that puts pressure on the body[11]. Lazarus and Folkman take stress as the interpretation of the dangerous situation arising from interaction with the environment by the individual[12]. For Cüceloğlu, when internal and external conditions and efforts to adapt to the environment make things difficult for the individual to handle, they create a burden beyond their physical and psychological limits, defined as stress[13]. Stress can be divided into two acute stress and chronic stress. It has been suggested that short-term stress can alert the organism to danger and may be protective, while chronic stress might contribute to many diseases[14]. Prolonged stress plays a role in suppressing the immune system by disrupting the cytokine balance and reducing the function of immune protective cells[15]. Stress is an inevitable part of human life in modern societies, frequently mentioned in daily life conversations. Individuals may often be under intense stress, even if they are unaware of it[16]. Stress adversely affects individuals' physiological and psychological well-being, and they behave differently when confronted with danger. When they think they cannot cope with risk, they move away from it and exhibit avoidance behavior; conversely, when they feel they can handle danger, they try to adapt to the existing situation by fighting the dangerous situation[17]. In that regard, social support is a prominent factor in minimizing and managing stress[18]. It is well-documented in the literature that social support proves effective in reducing stress[18–20].

Social support refers to the availability of individuals around us who can provide emotional information and financial support[12]. This support can be a protective element in psychological well-being against the detrimental effects of trauma and stress in society arising from disasters and unexpected events[21]. In their study on healthcare workers, Bozdağ and Ergün found that the perceived social support provided by family members was high[22]. In addition, Wang et al. reported that 53.8% of the participants experienced moderate

to severe psychological problems while 8.1% suffered high-stress levels during the Covid-19 outbreak in China[23]. Working actively during outbreaks is a challenge in itself. Previous reports have revealed that being a healthcare worker commissioned in an outbreak brings about a high biopsychosocial stress[24].

The significance of this study lies in gaining an insight into stressful experiences associated with Covid-19 in healthcare workers and shedding light on what might be specific psychological and behavioral interventions in the future. Furthermore, the data to be obtained from the study can improve the current working conditions of the healthcare personnel, notably frontline workers. This study at an early stage of the Covid-19 outbreak in Turkey is one of the earliest studies performed in the relevant field. It is expected to make insightful contributions to the pertinent literature.

This study set out to identify the effect of Covid-19 on social support perception and stress levels in healthcare workers based at a tertiary hospital.

Materials and Methods

Study Design

When this descriptive and cross-sectional study was performed, 1729 healthcare workers were employed in the Health Research and Application Center of Pamukkale University. The participants were not selected through a particular sample selection method. Of the initial cohort of 1729 healthcare workers employed in the hospital, 448 individuals who agreed to participate for one month following the ethics committee approval were recruited for this study. The healthcare workers who were on leave, took sick leave and refused to participate were excluded from the scope of the study. The study was carried out between April 18 and May 18, 2020, in the health above facility that functioned as a pandemic hospital at the same time. About the working plan of the hospital, the regular clinics maintained their daily routine, while a pandemic clinic where healthcare personnel worked in the rotation was built.

Data Collection

The researchers utilized an introductory information form, Acute Stress Symptom Scale, and Multidimensional Scale of Perceived Social Support to collect the research data.

Introductory Information Form

Devised by the researchers themselves, the Introductory Information Form consists of items aimed at identifying the descriptive characteristics of healthcare workers (age, gender, marital status, status of parenthood, profession, educational background, current department, working experience, health status, and status of examining or care-giving to Covid-19 patients).

Acute Stress Symptom Scale (ASSS)

The "Severity of Acute Stress Symptoms-Adult (National Stressful Events Survey Acute Stress Disorder Short Scale," one of the scales recommended by the American Psychiatric Association to be utilized before the initial interview with patients and to evaluate the treatment process, has been devised to evaluate the severity of acute stress symptoms in the DSM-5 scale. The validity and reliability of the scale in the Turkish context were investigated by Aşçibaşi et al., and the Cronbach alpha coefficient was calculated as 0.95, indicating a good internal consistency[25]. On the other hand, the Cronbach alpha value turned out to be 0.851 in this study. The scale comprises seven items that evaluate the severity of acute stress disorder symptoms developing due to a post-traumatic experience in individuals aged 18 and older. Each item asks the respondent to rate the severity of the acute stress disorder lasting over the past seven days. Each item in the scale is evaluated with a five-point rating (0=Not at all; 1=A little bit; 2=Moderately; 3=Quite a bit. and 4=Extremely). The resulting score ranges between 0 and 28. High scores imply the presence of severe acute stress disorder symptoms. The total mean score is calculated by dividing the total raw score by the number of items on the scale[25].

Multidimensional Scale of Perceived Social Support (MSPSS)

The multidimensional Scale of Perceived Social Support (MSPSS) was developed by Zimet et al. in the USA[26], and Eker, Arkar, and Yaldiz[27] assessed the validity and reliability of its Turkish version. The scale consists of 12 items in total and 3 sub-dimensions, specifically family (items 3, 4, 8, 11), friends (items 6, 7, 9, 12), and significant other (items 1, 2, 5, 10). Each item is graded along a 1–7 interval scale, ranging from "very strongly disagree=1" to "very strongly agree=7". The score for each sub-dimension is obtained by adding the scores of the four items in that sub-dimension, while the total score of the scale is calculated by adding

all sub-dimension scores. The higher the obtained score is, the higher the perceived social support is. About the scale's reliability, Cronbach's Alpha coefficients for each sub-dimension are reported as family=0.85, friends=0.88, and significant other=0.92, whereas the coefficient of the scale as a whole is 0.89[27]. In this study, likewise, the Cronbach's Alpha value for each sub-dimension was calculated as family=0.886, friends=0.878, and significant other=0.910, while the coefficient of the scale as a whole was found as 0.909.

Data Analysis

The statistical analyses were performed with the Statistical Package for the Social Sciences v.24. The dataset was evaluated through mean scores, standard deviation, number and percentage, Mann Whitney U test, Kruskal Wallis Variance Analysis, and Spearman Correlation Analysis. A p-value of <0.05 was set as the limit for statistical significance.

Ethical Considerations

The current study was performed in compliance with the principles of the Declaration of Helsinki. Ethics approval was granted by the Non-interventional Studies Ethics Board of the university (date: 16.04.2020; number: 60116787-020/34300). The required institutional and scale permissions were sought and received. The healthcare workers enrolled in the study provided their informed verbal consent.

Results

Table 1 presents an overview of the descriptive characteristics of the enrolled healthcare workers. Their mean age was 36.70±7.65. As to gender, slightly more than half were male (55.8%). Around two-thirds of the study population reported to be married (67.0%) and have children (65.6%).

Table 2 illustrates the mean scores of both scales. The mean score of the respondents completing ASSS was calculated as 1.40±0.83, whereas the total mean score of MSPSS corresponded to 70.90±14.56. Concerning the sub-dimensions of MSPSS, the mean scores were found as 25.07±4.78 for family, 22.57±6.01 for friends, and 23.27±6.94 for significant others.

Significant within-group differences were observed in ASSS scores in relation to gender, profession, health status, background for psychological problems, and job satisfaction (p<0.05). However, no significant

Table 1. *Descriptive characteristics of healthcare workers (n=448)*

Descriptive characteristics		n (%)
Mean age		36.70±7.65
Age intervals	21–32 years old	146 (32.6)
	33–44 years old	223 (49.8)
	45–56 years old	79 (17.6)
Gender	Male	250 (55.8)
	Female	198 (44.2)
Marital status	Married	300 (67.0)
	Single	148 (33.0)
Parenthood	Yes	294 (65.6)
	No	154 (34.4)
Profession	Staff – Cleaning staff	229 (51.1)
	Nurse	75 (16.7)
	Doctor	56 (12.5)
	Office staff	34 (7.6)
	Emergency medical technician (EMT)	27 (6.0)
	Medical secretary	21 (4.7)
	Health technician	6 (1.3)
Educational background	Primary school	83 (18.5)
	Secondary school	46 (10.3)
	High school	122 (27.2)
	University	130 (29)
	Post-graduate	67 (15)
Current department	Ward	145 (32.4)
	Pandemic outpatient policlinic	143 (32.0)
	Pandemic ward	52 (11.6)
	Outpatient clinic	44 (9.8)
	Intensive care unit	38 (8.5)
	Pandemic intensive care unit	20 (4.5)
	Emergency department	5 (1.1)
Pre-Covid-19 department	Ward	170 (38.0)
	Emergency department	104 (23.3)
	Others (administrative units, technical services, operating room)	73 (16.3)
	Outpatient clinic	54 (12.1)
	Intensive care unit	46 (10.3)
Examining or care-giving to Covid-19 patients	No	246 (54.9)
	Yes	202 (45.1)
Having Covid-19 PCR test	No	374 (83.5)
	Yes	74 (16.5)
Work experience	1–5 years	122 (27.2)
	6–11 years	179 (40.0)
	12–17 years	91 (20.3)
	18–23 + years	56 (12.5)
Experience in current department	1–5 years	318 (71.0)
	6–11 years	83 (18.5)
	12–17 years	34 (7.6)
	18–23 + years	13 (2.9)
Health status	I have no health problem	368 (82.1)
	I have a medical diagnosis and condition for which I am receiving treatment	80 (17.9)
Background for psychological problems	I have had no psychological problems	341 (76.1)
	I have had psychological problems but received no support	48 (10.7)
	I had pharmaceutical treatment	46 (10.3)
	I had pharmaceutical treatment along with psychotherapy	9 (2.0)
	I was admitted to a clinic for psychiatric treatment	4 (0.9)
Job satisfaction	Satisfied	253 (56.5)
	Partly satisfied	168 (37.5)
	Dissatisfied	27 (6.0)

Table 2. *ASSS and MSPSS mean scores of healthcare workers (n=448)*

Scales	Med (min-max)
ASSS mean score	1.40±0.83 1.43 (0–4)
MSPSS total mean score	70.90±14.56 75 (12–84)
Family	25.07±4.78 28 (4–28)
Friends	22.57±6.01 24 (4–28)
Significant other	23.27±6.94 27 (4–28)

ASSS: Acute Stress Symptoms Scale, MSPSS: Multidimensional Scale of Perceived Social Support.

difference was noted in other sub-groups, such as age, marital status, parenthood, educational background, current department, pre-Covid-19 department, examining or care-giving to Covid-19 patients, and work experience, and experience in the present department (p>0.05) (Table 3).

Table 4 provides a breakdown of MSPSS scores by some descriptive characteristics of the enrolled healthcare workers. A significant difference was revealed in the family sub-dimension by marital and parenthood status, educational background, having a Covid-19 PCR test, background for psychological problems, and job satisfaction (p<0.05). Besides, a significant difference was evident in the sub-dimension of significant other by marital and parenthood status, work experience, and job satisfaction (p<0.05). According to the marital and work-life satisfaction of the participants, it was found that there was a significant difference in the MSPSS scale total (p<0.05). On the other hand, no statistical significance was observed in the sub-dimension of friends by some descriptive characteristics of the respondents (p>0.05).

The relationship between the healthcare workers' ASSS and MSPSS scores is tabulated in Table 5. A weak, negative correlation was noted between ASSS and the total mean score of MSPSS and its sub-dimensions, including family, friends, and significant other (p<0.05).

Discussion

Carried out at the early stage of the Covid-19 outbreak in Turkey, this study was intended to identify the impact of Covid-19 on stress and social support perception among healthcare workers at a tertiary hospital. Several striking results were obtained in the study. The first is the observation that the acute stress symptom of healthcare workers was at a mild level, while the other was high levels of multidimensional social support perception.

Stress has developed into an inevitable part of human life, frequently mentioned in daily conversations. Individuals may often be under intense stress, whether they are aware of it or not; individuals may often be under intense stress[16]. It can be classified into two acute stress and chronic stress. The former can alert the organism to danger and may have a protective effect. At the same time, the latter might lead to multiple diseases and exert an adverse impact on the physiological and psychological well-being[14]. In cases where healthcare workers cannot control their work and are assigned to care for infected patients against their own will, their stress levels may increase, and their psychological well-being might be impaired. A feeling of insecurity constitutes one of the risk factors for their psychological well-being. As confidence in equipment and infection control procedures is boosted, stress and emotional exhaustion may be decreased. The frontline medical staff engaging with patients with Covid-19 is reported to be at higher risk relation to psychological problems, including psychological distress, insomnia, alcohol, and drug abuse, acute stress disorder, post-traumatic stress disorder, depression, anxiety, burnout, anger, high perception of stress, and resort to non-adaptive coping strategies more often[28–30]. In this study, the acute stress symptom levels of the enrolled healthcare workers were assessed as mild, which is also confirmed by some previous reports[2,31,32]. Nevertheless, some lines of counter-evidence to our findings also exist in the literature. For instance, reports reveal that frontline healthcare workers have been exposed to severe work-induced stress during the Covid-19 outbreak[33].18.9% of them have developed symptoms of high levels of job-related stress in this pandemic process[34]. In addition, healthcare workers were under increased stress during the SARS outbreak in Taiwan, designating this process as a traumatic experience[35]. The research on the SARS epidemic signals the concerns about health risk, social isolation, and work-induced anxiety as the main drivers of stress among healthcare staff[36]. A systematic review study argues that high levels of acute stress disorder, anxiety, burnout, depression, and post-traumatic stress disorder develop in healthcare workers both during and after outbreaks[37]. One should bear in mind that our respondents' lower stress levels may have something to do with the hospital's standard operating procedure where the study was carried out.

Moreover, these relatively lower stress levels could be explained by adequate provision of personal protective equipment, regulation of working periods,

Table 3. *ASSS mean scores of healthcare workers by some descriptive characteristics (n=448)*

Descriptive characteristics		ASSS (X̄ ± S.D.)	Statistical test
Age intervals	21–32 years old	1.39±0.78	KW=2.011 0.366
	33–44 years old	1.43±0.84	
	45–56 years old	1.30±0.89	
Gender	Male	1.22±0.80	Z=-3.971 **0.0001***
	Female	1.54±0.83	
Marital status	Married	1.42±0.87	Z=-0.307 0.759
	Single	1.38±0.81	
Parenthood	Yes	1.34±0.77	Z=-0.663 0.507
	No	1.43±0.86	
Profession	Staff – Cleaning staff	1.29±0.78	KW=18.859 **0.002***
	Nurse	1.67±0.77	
	Doctor	1.61±0.66	
	Office staff	1.61±0.94	
	Emergency medical technician (EMT)	1.30±0.86	
	Medical secretary	1.24±0.75	
	Health technician		
Current department	Ward	1.38±0.75	KW=6.086 0.298
	Pandemic outpatient policlinic	1.51±0.94	
	Pandemic ward	1.34±0.97	
	Outpatient clinic	1.29±0.80	
	Intensive care unit	1.49±0.97	
	Pandemic intensive care unit	1.61±0.79	
	Emergency department		
Examining or care-giving to Covid-19 patients	No	1.36±0.85	Z=-0.986 0.324
	Yes	1.44±0.81	
Having Covid-19 PCR test	No	1.38±0.82	Z=-0.537 0.591
	Yes	1.46±0.89	
Work experience	1–5 years	1.33±0.77	KW=2.99 0.393
	6–11 years	1.42±0.83	
	12–17 years	1.33±0.87	
	18–23 + years	1.55±0.91	
Experience in current department	1–5 years	1.46±0.85	KW=7.647 0.054
	6–11 years	1.21±0.74	
	12–17 years	1.24±0.8	
	18–23 + years	1.30±0.86	
Health status	I have no health problem	1.36±0.84	Z=-2.033 **0.042***
	I have a medical diagnosis and condition for which I am receiving treatment	1.58±0.79	
Background for psychological problems	I have had no psychological problems	1.27±0.77	KW=29.174 **0.0001***
	I have had psychological problems but received no support	1.76±0.84	
	I had pharmaceutical treatment	1.81±0.96	
	I had pharmaceutical treatment along with psychotherapy	1.84±1.01	
Job satisfaction	Satisfied	1.24±0.76	KW=21.524 **0.0001***
	Partly satisfied	1.55±0.88	
	Dissatisfied	1.87±0.83	

ASSS: Acute Stress Symptoms Scale, KW: Kruskal Wallis Variance Analysis, Z: Mann Whitney U test.
*p<0.05

arrangement of in-clinic work shifts, the age interval of nearly half of the healthcare workers (49.8%) ranging between 33 and 44, and working experience of the majority to be six years or more. Individuals are estimated to develop more effective coping strategies in managing stress and crises as their working experience increases. Furthermore, half of the respondents reported job satisfaction, good health status, and low rates of examining or caring for Covid-19 patients (45.1%) could account for their low-stress level. The

Table 4. *MSPSS mean scores of healthcare workers by some descriptive characteristics (n=448)*

Descriptive characteristics		MSPSS total score X̄ ± S.D.	Family X̄ ± S.D.	Friends X̄ ± S.D.	Significant other X̄ ± S.D.
Marital status	Married	68.00±15.06	24.40±5.04	22.19±5.94	21.41±8.22
	Single	72.33±14.12	25.40±4.61	22.75±6.05	24.18±6.02
		Z=-3.373 **0.001***	Z=-2.434 **0.015***	Z=-1.333 0.183	Z=-3.629 **0.0001***
Parenthood	Yes	69.32±15.21	24.43±5.23	22.63±6.04	22.26±7.74
	No	71.73±14.17	25.40±4.49	22.53±6.01	23.79±6.43
		Z=-1.897 0.058	Z=-2.511 **0.012***	Z=-0.138 0.89	Z=-2.168 **0.03***
Educational background	Primary school	67.27±19.09	23.93±6.51	21.72±6.84	21.61±8.25
	Secondary school	71.87±14.30	25.85±4.22	22.43±6.16	23.59±7.33
	High school	72.04±13.01	25.17±4.57	23.14±5.75	23.73±6.70
	University	72.37±13.33	25.68±3.92	22.90±5.85	23.78±6.40
	Post-graduate	69.82±12.70	24.57±4.28	22.01±5.59	23.24±6.20
		KW=4.618 0.329	KW=10.397 **0.034***	KW=3.785 0.436	KW=5.069 0.280
Having Covid-19 PCR test	No	71.30±14.56	25.28±4.63	22.66±5.97	23.36±7.02
	Yes	68.89±14.49	24.00±5.36	22.12±6.27	22.77±6.52
		Z=-1.801 0.072	Z=-2.042 **0.041***	Z=-0.835 0.404	Z=-1.668 0.095
Work experience	1–5 years	70.86±13.83	24.68±5.04	22.62±5.58	23.56±6.41
	6–11 years	69.23±15.53	24.96±5.09	21.99±6.68	22.28±7.47
	12–17 years	72.44±14.98	25.48±4.35	23.00±5.93	23.96±6.86
	18–23 + years	73.82±11.56	25.59±3.70	23.59±4.56	24.64±6.10
		KW=5.008 0.171	KW=2.186 0.535	KW=1.522 0.677	KW=10.128 **0.018***
Background for psychological problems	I have had no psychological problems	71.98±13.24	25.52±4.17	22.79±5.88	23.67±6.63
	I have had psychological problems but received no support	68.88±15.57	23.17±5.42	22.63±5.29	23.08±6.51
	I had pharmaceutical treatment	66.50±19.65	23.78±6.98	21.22±7.41	21.50±8.13
	I had pharmaceutical treatment along with psychotherapy	65.69±19.60	24.77±5.69	21.31±6.52	19.62±10.06
		KW=5.062 0.167	KW=17.30 **0.001***	KW=2.285 0.515	KW=5.84 0.12
Job satisfaction	Satisfied	71.30±16.68	24.37±5.43	22.96±6.48	23.96±7.26
	Partly satisfied	68.20±15.72	24.04±5.03	21.74±6.49	22.42±6.97
	Dissatisfied	72.65±13.26	25.83±4.40	23.07±5.58	23.75±6.86
		KW=9.238 **0.01***	KW=23.25 **0.0001***	KW=4.413 0.11	KW=10.513 **0.005***

MSPSS: Multidimensional Scale of Perceived Social Support, KW: Kruskal Wallis Variance Analysis, Z: Mann Whitney U test.
*p<0.05

Table 5. *Correlation between ASSS and MSPSS scores of healthcare workers (n=448)*

	MSPSS Sum	Family	Friends	Significant other
ASSS				
r	-0.236*	-0.234*	-0.250*	-0.155*
p	0.000	0.000	0.000	0.001

ASSS: Acute Stress Symptoms Scale, MSPSS: Multidimensional Scale of Perceived Social Support.
*p<0.05

applauding of healthcare workers by the public at home at a specific time in the evenings, organization of support campaigns on social media, the broadcasting of programs aimed at healthcare workers, and the prayers said for them in mosques every day during the period when the study was performed may also have contributed to the lower levels of stress in healthcare workers.

Social support refers to the social network lending psychological and physical support to maximize an individual's resilience to combat stress[19]. In addition, the multidimensional scale of perceived social support covers three sub-dimensions, including "family," "friend," and "significant other"[26]. Within this framework, we can define social support as enjoying the presence of folks that a person counts on and is assisted by their family, friends, or acquaintances and gaining indirect access to those people's resources up to a certain degree. In the pandemic, the support given to healthcare workers through a psychosocial organization and family and social environment can be a protective factor when at sufficient levels. Conversely, insufficient psychosocial support may be a major underlying risk factor for individuals' psychological well-being.

Similarly, social rejection and isolation pose a significant challenge to the mental health of healthcare

workers[30]. There is scientific evidence that the social support perception of healthcare professionals proves to be high in the Turkish context[38]. Another line of research has established that the delivery of social support is most likely to minimize anxiety and stress levels[18]. Consistent with previous scientific works, healthcare workers' total social support perception and the sub-dimensions of family, friends, and significant others proved significantly high. Positive public support to healthcare workers and adequate personal protective equipment and medical supplies in the hospital might have heightened our respondents' perceived social support. Besides, this finding also indicates that healthcare workers' high social support perception may be key to alleviating their stress.

Our findings reveal more increased acute stress symptoms in our male respondents than their female counterparts. Other research on the psychological state of healthcare workers also reports corresponding results to those of our study[28]. On the contrary, some lines of counter-evidence in the pertinent literature document higher stress levels among women[23,33,39–41]. As for the underlying reasons why male medical staff reported higher stress levels in our study, we believe that their avoidance of verbally expressing the stress they experienced during the outbreak and their inability to share their feelings with their acquaintances may have played a role.

We established a significant relationship between acute stress symptom levels and the profession of the respondents, and consistent with the previous findings[2,29,42], these levels turned out to be higher in nurses than in other healthcare workers. A study conducted during the SARS outbreak likewise revealed that nurses were more susceptible to stress[43]. This may result from nurses coming into more close contact with infected patients and providing prolonged care-giving.

Generally speaking, a negative mood is likely to heighten individuals' stress levels[17,44]. Stress may exert an adverse effect on our mental and physical well-being. Besides, suffering from a physical or psychological disorder may also double stress levels[45]. Our findings broadly support the work of previous studies in this area linking acute stress symptoms of healthcare workers with their physical and psychological disorders. Accordingly, healthcare workers reporting having physical and psychological disorders ended up with higher stress levels.

Another notable finding from our analysis is a significant increase in acute stress symptom levels of healthcare workers reporting dissatisfaction. As identified by previous research, healthcare workers' sense of fulfillment in their work mediates their stress levels and job satisfaction[46,47].

Social support theory argues that the support given by the family can potentially reduce stress and protects individuals' physical and psychological well-being[48,49]. Our results signal a significant relationship between our respondents' total social support perception and their marital status and job satisfaction. In addition, the family sub-dimension was significantly correlated with marital status, parenthood status, educational background, having a Covid-19 PCR test, background for psychological problems, and job satisfaction. Social support, which can be conceptualized as the resources provided by family members, relatives, and other close social circles, can mediate people's physical health and well-being[50]. Moreover, social support can mediate the emergence, course, and duration of numerous physical or mental disorders[51]. In this study, high scores for the family sub-dimension are thus an expected outcome in the individuals who are married, have children, have a strong education background, and do not have a Covid-19 PCR test because such descriptive characteristics as marriage and parenthood are included in the family sub-dimension. As the education level of individuals increases, their skills of self-expression, effective exploitation of social support channels, social sharing, and socialization may be improved correspondingly. Furthermore, the other sub-dimension of significant other was significantly associated with marital status, parenthood, working experience, and job satisfaction. However, the sub-dimension of friends indicated no significant relationship with some sociodemographic characteristics. The underlying reason for the lack of a significant relationship in this sub-dimension might be the imposition of social restrictions and the lockdown process.

Individuals' awareness that they are loved and valued by their social circle and that people to help them are around in case of need can inspire confidence and happiness in them[52]. High social acceptance contributes positively to social support and facilitates coping with stress. Confident that they will be accepted and supported by their social circle, individuals are less affected by unfavorable situations than those who think otherwise. In this way, when they encounter

an unfavorable situation, they can take a step to cope with the challenges without stress[53]. During the pandemic process, mobilizing social support resources, such as support from family, friends, and significant others, can serve as a protective factor for lowering stress levels and maintaining mental health when at sufficient levels. Healthcare workers whose daily lives are affected by the pandemic, such as getting in less contact with family members, become more vulnerable to stress and experience major mental health problems[30,37]. The research conducted in the Chinese context during the Covid-19 outbreak reveals that social support to healthcare workers exerts a favorable effect on mental health[54], proves to be the strongest protective factor for coping with stress and maintaining mental health[55], and helps to minimize anxiety and stress levels as well as to improve their self-efficacy[18]. As substantiated by previous reports in this field, a weak negative correlation was noted between acute stress symptom severity of healthcare workers and their multidimensional perceived social support and its sub-dimensions in this study. In other words, it has been suggested that as their stress symptom severity decreases, their social support perceptions tend to increase.

The generalizability of our results is subject to some limitations. One source of weakness which could have affected our results is that the information obtained from healthcare workers belongs to the specified dates. Another limitation is that the present study is cross-sectional, and its sample size is small. Thus these findings might not be representative of other contexts. Finally, the surveys and scales utilized in our study are based on self-report, so the reported results may have reflected a subjective assessment.

Our results suggest that healthcare workers' acute stress symptom levels are mild, while their multidimensional social support perceptions are quite high. Given some descriptive characteristics of our respondents, a statistical significance was evident in their levels of acute stress symptoms and perceived social support. Our analyses also revealed a weak, negative correlation between acute stress symptom levels and the total mean score of multidimensional perceived social support and its sub-dimensions of family, friends, and significant other. Based on these findings, we suggest several courses of action to minimize the stress levels of healthcare workers during the pandemic process, such as supplying a sufficient amount of personal protective material, increasing the number of staff, the use of protective materials, meeting basic needs (food and liquid intake), providing required information about the care-giving of Covid-19 patients, and creating resting areas. Psychological programs can also be organized to maximize coping strategies for healthcare workers. In addition, it would be of great value to develop multidisciplinary mental health teams (psychiatrists, psychiatric nurses, clinical psychologists) in health facilities to alleviate their burden. Most notably, in risky times such as pandemics, it may be important to intensify social support by mobilizing social support resources to minimize their stress level and organizing regular training programs explaining the importance of this effort for healthcare workers.

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