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Research paper

The impact of COVID-19 on social support perception and stress of prehospital care providers

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ABSTRACT

Background: This study seeks to explore the impact of COVID-19 outbreak on the social support perception and acute stress disorder of prehospital care providers (PCPs) in the province of Denizli.
Methods: This descriptive and cross-sectional study was conducted between December 25, 2020 and January 25, 2021. Out of 510 ambulatory care staff constituting the study population, there were 287 PCPs (%56.2), including 13 physicians, 89 paramedics, 134 emergency medical technicians, and 51 individuals from other occupational groups (nurse, driver, cleaning staff, medical secretary) based at emergency health services. The data collection tools employed in the study include an introductory information form, Multidimensional Scale of Perceived Social Support (MSPSS), and National Stressful Events Survey Acute Stress Disorder Short Scale (NSESSS), which was organized as an online questionnaire.
Results: We analyzed the data from 287 PCPs that completed the form and scales. The mean score of the NSESSS was calculated as 1.53 ± 0.79. The PCPs who experienced health problems (1.85 ± 0.69), suffered from mental problems and received psychotherapy and medication (2.57 ± 0.57), encountered COVID-19 patients (1.58 ± 0.8), provided care for COVID-19 patients (1.59 ± 0.79), and took polymerase chain reaction (PCR) tests (1.68 ± 0.78) had higher acute stress symptom levels. The total mean score of MSPSS was calculated as 66.28 ± 17.22. Total MSPSS scores of the participants varied significantly in terms of age, marital status, taking a COVID-19 test, suffering from mental problems, status of encountering a COVID-19 patient, and workplace satisfaction (p < 0.05).
Conclusions: The findings are suggestive of high perceptions of multidimensional social support and low acute stress symptom levels of the PCPs during the COVID-19 pandemic period.

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1. Introduction

The need for service groups, whether public, private or non-governmental organizations, is increasing in the event of disasters and emergencies. The need for healthcare staff carries more weight than that of other service personnel, most notably in the case of

medical disasters, such as epidemics and pandemics. Currently, healthcare staff is fighting at the frontline against the COVID-19 disease in the ongoing pandemic period, as in the epidemics of SARS, MERS, Influenza experienced in previous years. A systematic review indicated that the healthcare staff who were female, directly contacted patients with COVID-19 manifestations or confirmed cases, and had specific personal characteristics turned out to be more susceptible to stress, anxiety, and depression [1]. Prehospital care providers as an emergency medical service (EMS) are in charge of out-of-hospital care for critically ill patients, get in the first contact with infected or suspected individuals, administer on-scene

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treatment, if necessary, and transport these individuals to the relevant healthcare institutions. Prehospital care providers, like other members of the society, are reportedly affected physically, socially and psychologically due to (a) fear of contracting the disease, (b) anxiety of infecting the family and acquaintances, (c) lockdown measures, (d) lack of sufficient knowledge and experience about the disease, (e) shortage of personal protective equipment (PPE), (f) being treated as a potential carrier by the society, (g) increasing working hours, (h) increasing number of patients cared for, and (i) less support from colleagues and administrators by pandemic processes [2–4]. Therefore, the physical, psychological, and social needs of frontline prehospital care providers should be identified in order to provide timely and effective medical care and support to individuals in need of health care during the pandemic.

This study seeks to explore the impact of COVID-19 outbreak on the social support perception and acute stress disorder of prehospital care providers in the province of Denizli.

2. Methods

2.1. Study design

This is a cross-sectional study of prehospital care providers and their social support perception and acute stress disorder. The ethics approval of this study was granted from Non-interventional Studies Ethics Board of Pamukkale University (date: 11.12.2020 and number: 192.168.89.237–35219). The research was carried out within one month (between December 25, 2020 and January 25, 2021) following the approval of the ethics committee. Out of 510 ambulatory healthcare staff based at emergency health services in the province of Denizli, 358 agreed to participate in the study. Of these participants, 71 individuals who did not meet the inclusion criteria were excluded. We ultimately analyzed the data of 287 PCPs (%56.2), including 13 physicians, 89 paramedics, 134 emergency medical technicians, and 51 individuals from other occupational groups (nurse, driver, cleaning staff, medical secretary) based at emergency medical services. The inclusion criteria can be listed as refusal to participate, failure to answer the surveys fully, and being on a leave of absence or taking sick leave during the study period. The exclusion criteria were defined as refusing to participate in the study, leaving questionnaire form incomplete, and being on a leave of absence or taking sick leave while the study was in progress.

2.2. Data collection

The research data was collected by means of an introductory information form devised by the study researchers, Multidimensional Scale of Perceived Social Support (MSPSS), and National Stressful Events Survey Acute Stress Disorder Short Scale (NSESSS). The forms and scales were organized by the form of an online survey website (https://survey.zohopublic.com) and sent to the prehospital care providers as an email. Before filling out the surveys, the eligible participants were informed about the study through an introductory information form, and those answering the surveys were considered to have given their informed consent to participate in the study. The introductory information form devised by the researchers questions the participants' age, gender, marital status, parenthood status, profession, educational level, years of work experience, work experience at the current department, health status, taking a PCR test and its results, status of encountering, examining or caring for Covid-19 patients, and job satisfaction. The respondents were granted one-month period to complete the surveys.

2.3. Main results and measuring instruments

2.3.1. Multidimensional Scale of Perceived Social Support (MSPSS)

MSPSS was developed by Zimet et al. [5] the validity and reliability analysis of MSPSS in Turkey was performed in 2001 by Eker and Arkar, who calculated its Cronbach's alpha coefficient as 0.80–0.95 [6,7]. MSPSS, which is made up of 12 items (four items for each subscale), subjectively evaluates the adequacy of social support received from family, friends, and significant others. The options of the scale are designed in the 7-point Likert type, ranging from "strongly disagree" to "strongly agree". While sub-scale scores are obtained by summing the scores of four items in each sub-scale, the sum of all the sub-scale scores yields the total score of the scale. Accordingly, a higher score indicates a stronger perceived social support [6].

2.3.2. National Stressful Events Survey Acute Stress Disorder Short Scale (NSESSS)

American Psychiatric Association has issued the DSM-5 Severity of Acute Stress Symptom Scale-Adult to assess the severity of acute stress symptoms. NSESSS is a seven-item scale that assesses the severity of acute stress disorder symptoms developing after an extremely stressful event or experience in individuals aged 18 and over. The validity and reliability study of the Turkish version of the DSM-5 NSESSS was conducted by Aşç ıbaşı et al., who calculated its Cronbach's alpha coefficient as 0.95 [8]. Each item in the scale which asks the respondent to assess the severity of the acute stress disorder enduring for the past seven days is graded with scores ranging from "0 =none" to "4 =extremely". Total score ranges from 0 to 28 points, and average total score is calculated by dividing the total raw score by the number of items in the scale [8]. The higher the overall score is, the more severe the symptoms of acute stress disorder are.

2.4. Data analysis

All the statistical analyses were performed using SPSS v25.0 (IBM SPSS Statistics 25 software (Armonk, NY: IBM Corp.)). The continuous variables were defined by mean ± standard deviation, while categorical variables were presented as number and percent. Normality assumptions were tested with Kolmogorov Smirnov and Shapiro Wilk analyses. For independent group comparisons in which parametric test assumptions were met, we used Independent samples t test for 2 group comparisons and One Way Analysis of Variance (post hoc: Tukey Test) for 2 + group comparisons. When parametric test assumptions were violated, we performed Mann-Whitney U test for 2 group comparisons and Kruskal Wallis Variance Analysis (post hoc: Mann Whitney U test with Bonferroni Correction) for 2 + group comparisons. We also conducted Spearman correlation analysis to investigate the relationship between continuous variables. Statistical significance was set at $p < 0.05$.

3. Results

In the final analysis, the dataset formed through the information provided by 287 PCPs in total was computerized and then analyzed. The rate of participation in the surveys amounted to 56.2% of the whole emergency medical staff in the city. The mean age of the participants was calculated as 32.5 ± 7.4. Moreover, 42.9% (n = 123) were male, while 57.1% (n = 164) were female. In terms of occupational status, the largest participating group was emergency medical technicians with 46.7% (n = 134), followed by paramedics with 31% (n = 89), other occupational groups with 17.8% (n = 51), and physicians with 4.5% (n = 13). The descriptive characteristics of the participants are presented in Table 1.

The Cronbach's alpha coefficient was calculated as 0.951 for MSPSS and 0.846 for NSESSS in this study. The mean score of the

Table 1
Descriptive characteristics of the participants (n = 287).

		n	%
Age	18–25	48	16.7
	26–35	148	51.6
	36–45	72	25.1
	46 and over	19	6.6
Gender	Male	123	42.9
	Female	164	57.1
Marital Status	Single	85	29.6
	Married	202	70.4
Number of Children	No child	116	40.4
	1	73	25.4
	2	79	27.5
	3 and more	19	6.6
Profession	Physician	13	4.5
	Paramedic	89	31
	Emergency medical technician	134	46.7
	Other	51	17.8
Educational Status	Primary school	7	2.4
	High School	46	16
	Under-graduate and post-graduate	234	81.5
Working time in the current department	1–5 years	170	59.2
	6–11 years	83	28.9
	12–17 years	28	9.8
	18 and over years	6	2.1
Have you ever encountered a COVID-19 patient?	Yes	254	88.5
	No	33	11.5
Have you ever examined or cared for a COVID-19 patient?	Yes	231	80.5
	No	56	19.5
Have you ever taken a PCR test?	Yes	184	64.1
	No	103	35.9
Mental health problems	I did not experience any mental problems	210	73.2
	I suffered from a mental problem but did not receive any support	49	17.1
	I followed a drug regimen	20	7
	I followed a drug regimen and underwent psychotherapy	8	2.8
Job satisfaction	Satisfied	130	45.3
	Partly satisfied	136	47.4
	Dissatisfied	21	7.3

participants filling in NSESSS was found as 1.53 ± 0.79, while total mean score of MSPSS was 66.28 ± 17.22. As for the sub-dimensions of MSPSS, the highest mean scores belonged to 'family' (23.24 ± 5.9), followed by 'significant other' (22.24 ± 7.23) and 'friends' (20.8 ± 6.56).

Table 2 illustrates the breakdown of MSPSS subscale and total score averages of the participating prehospital care providers. Total MSPSS scores of the participants varied significantly in terms of age, marital status, taking a COVID-19 test, suffering from mental problems, status of encountering a COVID-19 patient, and workplace satisfaction ($p < 0.05$).

We did not detect any significant difference in a range of variables, including total MSPSS scores, gender, number of children, occupation (physician, paramedic, emergency medical technician, and others), educational status, caring for a COVID-19 patient before, Covid-19 PCR test result, working experience, working time in the current department, presence of health problems ($p > 0.05$).

NSESSS scores yielded significant differences with regard to age, gender, parenthood status, occupation, status of encountering, examining and/or caring for COVID-19 patients, years of work experience, health problems (coranary artery disease, diabetes mellitus, hypertension, chronic renal failure, etc.), taking a COVID-19 test, suffering from mental problems, and job satisfaction levels ($p < 0.05$). However, no statistical significance was observed in

NSESSS scores in terms of marital and educational status, PCR test results, and work experience at the current department ($p > 0.05$) (Table 3).

NSESSS scores indicated a weak negative correlation with 'family' and 'significant other' subscales, total MSPSS scores, but a moderate negative correlation with 'friends' subscale ($r = -0.331$, $p < 0.05$; $r = -0.272$, $p < 0.05$; $r = -0.366$. $p < 0.05$; $r = -0.401$, $p < 0.05$, respectively).

4. Discussion

This study carried out within the first year of the COVID-19 outbreak set out to investigate the impact of this outbreak on the perception of social support and stress in prehospital care providers in the province of Denizli. The resulting picture reveals that acute stress symptoms of this staff are mild, and that perceived multi-dimensional social support is high both as a whole and in the sub-scales.

Prolonged stress produces adverse mental, emotional, and physiological results. Symptoms, such as burnout, emotional fatigue, or work-related stress, have been reported in almost half of the healthcare professionals during their regular working periods [9]. Increased workload and intense work pressure during the outbreak are exhausting the healthcare staff physically and psychologically, bringing about higher levels of stress [10]. A substantial body of research investigating the psychological impact of the COVID-19 outbreak on the healthcare staff reveals that the frontline personnel is less affected than those working in the background, administrative staff, and society [11–16]. Paradoxically, many lines of evidence indicate the tremendous psychosocial impact of the COVID-19 pandemic on medical staff [2,17–20]. Our study has found mild levels of acute stress symptoms in the frontline prehospital care providers. However, the stress level of those who encountered, examined or treated COVID-19 patients turned out to be significantly higher than their counterparts who did not. Mounting clinical data support the favorable effects of social support against stress [15,21,22]. In line with the literature, our study has found the total social support perception of the prehospital care providers to be at high levels in the subscales of family, friend and significant other. Note that the lower stress levels of the participating prehospital care providers in this study may have resulted from the high levels of perceived social support. In addition, prehospital care providers fight at the frontline during the pandemic and they are the first people to do the first aid to the patients, so they bear a 'savior' role in coping with the heavy emotional burden of the pandemic can be considered as an important underlying factor. Besides, the following situations might have contributed to the lower stress levels of our participants:

- The healthcare staff has been able to gain access to protective equipment since the onset of the pandemic.
- Turkish society has taken a supportive attitude towards healthcare personnel (i.e. applauding on the balconies at 9 p.m.).
- While the number of confirmed cases peaked rapidly in Asian and European countries after China in the early period of the pandemic, there were fewer cases in Turkey due to the implementation of the recommendations issued by the Ministry of Health's Coronavirus Scientific Committee to prevent the transmission of the disease.
- The number of admissions to the emergency health services during the pandemic period has been lower than those in the normal period.
- A separate living space has been arranged for healthcare staff who want to stay away from their beloved ones for fear of infecting the disease.

Table 2
Mean MSPSS scores of the prehospital care providers (n = 287).

	Family		Friends		Significant other		Overall MSPSS	
	X ± SS	p	X ± SS	p	X ± SS	p	X ± SS	p
Age								
18–25	20,9 ± 7,34	0.004 *	19,27 ± 7,86	0.179	20,33 ± 8,1	0.17	60,5 ± 21,02	0.038 *
26–35	23,51 ± 5,4		21,11 ± 6,14		22,13 ± 7,62		66,76 ± 16,36	
36–45	23,38 ± 5,96		20,44 ± 6,7		23,04 ± 5,98		66,86 ± 16,59	
46 and over	26,53 ± 2,76		23,63 ± 4,54		24,84 ± 5,04		75 ± 10,73	
Gender								
Male	22,84 ± 6,04	0.292	20,93 ± 6,69	0.633	22,17 ± 7,24	0.898	65,94 ± 17,46	0.886
Female	23,54 ± 5,79		20,71 ± 6,47		22,29 ± 7,24		66,54 ± 17,09	
Marital Status								
Single	21,35 ± 6,66	< 0.001 * *	20,49 ± 6,69	0.61	18,78 ± 8,47	< 0.001 * *	60,62 ± 18,81	< 0.001 * *
Married	24,03 ± 5,37		20,94 ± 6,51		23,69 ± 6,1		68,66 ± 15,97	
Number of Children								
No child	22,47 ± 6,28	0.039 *	21,1 ± 6,6	0.136	21,09 ± 8	0.143	64,66 ± 17,87	0.115
1	22,34 ± 6,71		19,1 ± 7,2		21,68 ± 7,6		63,12 ± 19,59	
2	24,84 ± 3,89		21,82 ± 5,74		24,22 ± 5,11		70,87 ± 12,55	
3 and more	24,79 ± 5,88		21,32 ± 6,16		23,16 ± 7,08		69,26 ± 17,22	
Profession								
Physician	22,46 ± 6,33	0.604	19,69 ± 8,78	0.394	21,08 ± 8,22	0.718	63,23 ± 22,57	0.49
Paramedic	22,7 ± 6,23		20,57 ± 7,21		21,28 ± 7,85		64,55 ± 18,74	
Emergency medical technician	23,26 ± 5,89		20,46 ± 6,29		22,53 ± 7,08		66,25 ± 16,46	
Other	24,33 ± 5,19		22,41 ± 5,21		23,43 ± 6,11		70,18 ± 14,58	
Educational Status								
Primary school	26,57 ± 2,51	0.232	23,57 ± 5,22	0.454	24,29 ± 5,96	0.607	74,43 ± 12,27	0.327
High School	22,91 ± 6,32		20,65 ± 5,97		21,83 ± 7,38		65,39 ± 16,31	
Under-graduate and post-graduate	23,21 ± 5,87		20,75 ± 6,7		22,26 ± 7,25		66,21 ± 17,51	
Working time in the current department								
1–5 years	22,59 ± 6,22	0.013 *	20,37 ± 6,84	0.526	21,56 ± 7,88	0.13	64,52 ± 18,55	0.14
6–11 years	23,76 ± 5,37		21,19 ± 6,04		23,02 ± 6,41		67,98 ± 15,05	
12–17 years	24,64 ± 5,31		21,71 ± 6,58		22,86 ± 5,36		69,21 ± 14,88	
18 and over years	28 ± 0		23,5 ± 5,05		27,67 ± 0,82		79,17 ± 5,38	
Have you ever encountered a COVID-19 patient?								
Yes	22,86 ± 6,1	0.003 * *	20,63 ± 6,58	0.171	21,78 ± 7,37	0.002 * *	65,27 ± 17,68	0.014 * *
No	26,18 ± 2,63		22,18 ± 6,33		25,73 ± 4,86		74,09 ± 10,42	
Have you ever examined or cared for a COVID-19 patient?								
Yes	22,82 ± 6,07	0.008 * *	20,86 ± 6,51	0.804	22,08 ± 7,23	0.403	65,76 ± 17,53	0.408
No	24,98 ± 4,78		20,57 ± 6,79		22,88 ± 7,25		68,43 ± 15,86	
Have you ever taken a PCR test?								
Yes	22,73 ± 6,08	0047 * *	20,01 ± 6,73	0006 * *	21,69 ± 7,50	0153	64,44 ± 17,61	0012 * *
No	24,14 ± 5,47		22,21 ± 6		23,21 ± 6,63		69,57 ± 16,06	
Mental health problems								
I did not experience any mental problems	23,96 ± 5,62	0.003 *	21,8 ± 6,22	< 0.001 *	23,05 ± 6,78	0.002 *	68,8 ± 16,34	< 0.001 *
I suffered from a mental problem but did not receive any support	21,14 ± 5,84		17,86 ± 7,09		19,55 ± 7,9		58,55 ± 17,63	
I followed a drug regimen	21,15 ± 6,87		19,35 ± 6,62		21,65 ± 7,79		62,15 ± 18,72	
I followed a drug regimen and underwent psychotherapy	22,5 ± 7,6		16,38 ± 4,34		18,88 ± 9,43		57,75 ± 17,97	
Job satisfaction								
Satisfied	25,22 ± 4,61	< 0.001 *	22,99 ± 5,63	< 0.001 *	23,88 ± 6,47	< 0.001 *	72,09 ± 14,71	< 0.001 *
Partly satisfied	22,15 ± 5,99		19,54 ± 6,39		21,17 ± 7,32		62,85 ± 17,06	
Dissatisfied	18,1 ± 7,55		15,48 ± 7,93		18,95 ± 8,91		52,52 ± 19,61	

MSPSS: Multidimensional Scale of Perceived Social Support; *Kruskal-Wallis Variance Analysis; **Mann-Whitney U test.

Many studies point to the association between being young and increased psychosocial impact. Some line of evidence suggests the relative prevalence of acute stress symptoms in young healthcare providers during the COVID-19 outbreak [23,24]. The rationale behind this finding is that excessive amount of information obtained from rapidly changing, questionable content and sources can cause fear and stress. In a qualitative inquiry carried out in Pakistan, media was portrayed as the major contributor of increased anxiety and stress levels of general public over the course of pandemic, since the accuracy of updates and news concerning the breakout was unable to be verified [25]. Avoiding this information pollution is required to minimize the adverse effects of the pandemic on individuals [26]. Paradoxically, different studies conducted in China during this outbreak have found lower stress levels in young healthcare staff than in other age groups. The justification provided for such a conclusion is that middle- and advanced-aged healthcare workers may have been in service during the SARS epidemic [16,27]. Age is also linked

with greater cognizance of risk, which contributes to greater emotional and psychophysical strain. Accordingly, younger healthcare providers tend to be more eager to launch initiatives, make use of new possibilities, and counter challenges, bringing about a stronger sense of resilience and personal fulfillment [28]. However, a study conducted in Italy reports high stress levels across all age groups in the COVID-19 pandemic [29]. When it comes to our study, as the age of the prehospital care providers increase, the acute stress level decreases, and the perception of total social support and the family subscale is significantly higher. This may result from the fact that, as the age of the individuals' increases, so does their professional experience and the social support they receive from their families, and they can manage the stress they face due to their job more easily.

There has been extensive work on both society at large and healthcare staff suggesting that women experience higher levels of stress than men during the COVID-19 outbreak [30–38]. In line with the aforementioned literature, our data identified higher levels of

Table 3
Mean NSESSS scores of the prehospital care providers (n = 287).

Descriptive characteristics	ASSSS X ± SS	Statistical test
Age band		
18–25	1.67 ± 0.89	**0.026***
26–35	1.6 ± 0.75	
36–45	1.37 ± 0.78	
46 and over	1.14 ± 0.75	
Gender		
Male	1.38 ± 0.8	**0.006****
Female	1.63 ± 0.77	
Marital Status		
Single	1.46 ± 0.77	0.33
Married	1.56 ± 0.8	
Number of Children		
No child	1.48 ± 0.79	**0.003***
1	1.81 ± 0.8	
2	1.39 ± 0.71	
3 and more	1.29 ± 0.86	
Profession		
Physician	1.37 ± 0.71	**< 0.001***
Paramedic	1.72 ± 0.83	
Emergency medical technician	1.57 ± 0.73	
Other	1.1 ± 0.74	
Educational Status		
Primary school	1.49 ± 0.51	0.127
High School	1.31 ± 0.7	
Under-graduate and post-graduate	1.57 ± 0.81	
Working experience		
1–5 years	1.59 ± 0.83	**0.01***
6–11 years	1.63 ± 0.78	
12–17 years	1.49 ± 0.74	
18 and over years	1.13 ± 0.75	
Working time in the current department		
1–5 years	1.58 ± 0.82	0.515
6–11 years	1.46 ± 0.75	
12–17 years	1.45 ± 0.76	
18 and over years	1.24 ± 0.73	
Have you ever encountered a COVID-19 patient?		
Yes	1.58 ± 0.8	**0.003*****
No	1.14 ± 0.63	
Have you ever examined or cared for a COVID-19 patient?		
Yes	1.59 ± 0.79	**0.006*****
No	1.27 ± 0.74	
Have you ever taken a PCR test?		
Yes	1.68 ± 0.78	**0.001*****
No	1.23 ± 0.71	
What was your PCR test result?		
Positive	1.64 ± 0.67	0.62
Negative	1.7 ± 0.83	
Health problem		
No	1.42 ± 0.79	**< 0.001*****
Yes	1.85 ± 0.69	
Mental health problems		
I did not experience any mental problems	1.35 ± 0.76	**< 0.001***
I suffered from a mental problem but did not receive any support	1.94 ± 0.66	
I followed a drug regimen	1.95 ± 0.63	
I followed a drug regimen and underwent psychotherapy	2.57 ± 0.57	
Job satisfaction		
Satisfied	1.22 ± 0.7	**< 0.001******
Partly satisfied	1.68 ± 0.71	
Dissatisfied	2.4 ± 0.9	

National Stressful Events Survey Acute Stress Disorder Short Scale (NSESSS); *One-Way Anova test; **Mann-Whitney U test; ***T-test; **** Kruskal-Wallis Variance Analysis

acute stress symptoms in female participants than in their male counterparts. Neff and Karney state that women face more stress factors, and that both women and men display common supportive behaviors, but the former provide better social support than the latter [39]. In contrast to this report, despite more increased stress levels of women, our study found no significant difference between genders in terms of perceived social support.

Various studies conducted during the COVID-19 and SARS outbreak report stronger psycho-social influence in single individuals than in their married counterparts [2,40,41]. A Chinese study documents more psychiatric symptoms in married caregivers of patients with COVID-19 [12]. On the other hand, no significant difference was evident in acute stress symptom levels with respect to marital status in our study, in which perceived social support was higher in the married respondents, family, and a special person subscales. In the family subscale, the healthcare staff with two or more children reported significantly higher perception of social support and lower acute stress levels than those with no children. The underlying reasons for the lower stress level of our participants with children can be cited as their ability to spare more time for themselves, and the longer time spent together as well as the increased financial and moral support of other family members (grandparents or others) in direct proportion to the number of children.

The presence of a physical and mental illness or a negative mood is likely to enhance the level of stress [2,42–44]. Similarly, a range of studies in the pandemic period document more increased levels of stress in individuals inflicted with health problems [15,45]. Our findings also validate those of other research in that higher stress levels were observed in the participants suffering from chronic diseases (hypertension, diabetes, COPD, immunodeficiency, etc.) and mental problems. Fear of contracting the infection in chronic disease patients and social isolation enforced during the outbreaks add to the stress level of those with existing mental problems. Besides, social support is a key factor in preserving individuals' well-being or coping with the stress caused by any disease [21,46]. In this context, our data analysis reveals decreased levels of social support in those manifesting psychiatric symptoms.

A wide range of studies performed in different parts of the world during the pandemic period have revealed higher levels of stress in medical staff with low educational levels [15,47,48]. In contrast, the relevant research in the Turkish context has reported no marked correlation between educational level and stress [49]. Likewise, our research data did not signal a noteworthy relationship between the educational and stress levels during the pandemic process. This scenario may have resulted from the fact that the COVID-19 Guide has been issued online, that the healthcare staff can easily access the accurate medical information regardless of their educational level, and that they may have felt more prepared for the pandemic.

Various studies on healthcare staff report conflicting results on the correlation between occupation and stress levels during pandemic periods. While some studies indicate more increased levels of stress in nurses, others report higher degrees of stress in doctors, and some others find even higher stress levels in paramedics [37,41,50,51]. In our study, the paramedics manifested by far the highest acute stress level of all the occupational groups. The risk of transmission, fear of getting sick, and infecting their beloved ones may have enhanced the stress levels of our paramedics on the grounds that they did not use PPEs appropriately in the field for faster emergency intervention in patients who did not manifest trauma or COVID-19 symptoms.

Individuals who develop work-related stress may manifest physical, behavioral, emotional and psychological disorders [52]. The more experienced individuals are in their profession and the more satisfied they are with their workplace, the lower stress they end up with [2,53]. Consistent with the above-mentioned findings, our data also confirm the link between job satisfaction of the healthcare staff and their low stress levels and high levels of perceived social support. As the working time increases, factors such as increasing professional experience, improving bilateral relations with co-workers, and sustaining a regular income may produce favorable effects on

stress. It is assumed that working with a fixed job and income in the same workplace for long facilitates getting married and having children, which in turn multiplies the social support tools perceived by the individual from the family. Moreover, many employees have either lost their jobs or closed down their workplaces due to the adverse financial conditions of the pandemic, but the healthcare staff have maintained their job guarantee and income during this period, which may have improved their job satisfaction and thus led to lower stress and high levels of perceived social support.

While stress level was reportedly higher in the medical personnel in Spain who did not take RT-PCR test [54], a Turkish study performed on 939 healthcare staff during the pandemic process demonstrated more increased stress levels in those who took this test [55]. Similar to the latter study, our results also implicate higher levels of stress in the prehospital care providers taking the test. The likely factors for increased stress levels could the anxiety of being quarantined if the test result is positive, the status of being distanced from working, educational, and social life for a while, and the fear of being stigmatized by the society.

4.1. Limitations

The current research suffers three main limitations. Initially, the evidence garnered from this study is bounded by the specified dates, and the psychosocial approaches of the participants to the pandemic and their psychosocial impact caused by the pandemic may have changed from the onset of the outbreak to the initiation date of the study. Besides, our data may not be generalizable to all prehospital care providers in Turkey and around the world due to the cross-sectional nature of the study. Finally, the questionnaires and the scales that we drew on in this study were based upon the self-reports of the respondents and so reflect their subjective evaluations. These evaluations may have been influenced by other psycho-social events in their daily lives.

5. Conclusion

Performed in the ongoing process of the COVID-19 pandemic, this study reveals that prehospital care providers perceived strong multidimensional social support and manifested low acute stress symptoms. The second major finding is that their acute stress levels and perceived multidimensional social support indicate significant correlations with some of their sociodemographic characteristics. For example, the level of acute stress symptoms correlates negatively with age, experience, and job satisfaction of the healthcare staff but positively with female staff and those who are afflicted with health or mental problems, encounter, examine or care for COVID-19 patients, and take a PCR test. In addition, the level of acute stress symptoms reveals a negative relationship between social support subscales like family, friends, a special person and overall score of multidimensional perceived social support.

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Ethics

The study protocol was accepted by the ethical committees of Pamukkale University (date: 08.12.2020 and number: 2020/23).

Conflict of interest

The authors have no conflict of interest to declare.

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