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The Relationship Between Perceived Social Support and Symptoms of Acute Stress, Anxiety and Depression in Hospitalized COVID-19 Patients

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ABSTRACT

It was aimed to investigate the role of perceived social support in coping with acute stress. depression and anxiety symptoms in hospitalized COVID-19 patients. Multidimensional Perceived Social Support Scale (MSPSS). National Stressful Events Questionnaire Acute Stress Disorder Short Scale and Hospital Anxiety and Depression Scale were administered to 138 hospitalized patients with the diagnosis of COVID-19. MSPSS scores were negatively associated with acute stress. depression and anxiety symptoms. Acute stress symptoms were also negatively correlated with all subscales of MSPSS. While there was a negative correlation between "Friends" and "Important Person" subscales of MSPSS and depression symptoms. a negative correlation was found between anxiety symptoms and "Friends" subscale. As the stress buffering model suggests. perceived social support can protect individuals from the impact of negative situations. Social support can also provide important positive effects in combating psychiatric symptoms in COVID-19 patients.

Keywords: Acute Stress. Social Support. COVID-19

Introduction

After its first appearance in China in December 2019. Coronavirus Infection (COVID-19) quickly spread to many other countries. becoming a worldwide pandemic(1. 2). Coronavirus disease can cause symptoms of fever. cough. headache. fatigue. sore throat and malaise. It primarily affects lungs but can also affect other organs. leading to pneumonia. respiratory distress. kidney failure and even death in severe cases(3-5). Measures taken to reduce the risk of infection. such as social distancing. self-quarantine (6); the uncertainty about the effects of COVID and the seriousness of it (7. 8) ; people's fear of getting infected (9) can all be stressor factors for individuals. The pandemic is known to have affected not only physical health but also mental health (9-14).

In the process of the pandemic. the mental health of COVID-19 patients has become a separate concern. There are studies that suggest a link between COVID-19 infection and psychiatric symptoms (13. 14). In a cross-sectional study. infected patients reported higher levels of somatization. depression. anxiety. sleep disorders. and eating disorders compared to the healthy population (11). An online study showed that there were higher symptoms of depression. anxiety and post-traumatic stress disorder (PTSD) compared to controls without COVID-19 (15).

Anxiety. stress and psychosocial factors weaken the immune system thus can increase vulnerability to infectious diseases (16-18). There is evidence that strategies for dealing with stressor factors can have positive effects on the immune system (19). Just like anxiety and stress. loneliness is also a strong risk factor for poor health and is associated with marked changes in immune function (20). In individuals who live alone. antiviral and antibody-related immune responses decrease and these individuals show increased inflammation (20. 21). It has previously been claimed that social isolation also increases the risk of developing colds after experimental viral exposure (17). During the COVID-19 pandemic. social isolation practices which would increase loneliness had been applied all over the world. During the pandemic, the significance of maintaining good mental health became more pronounced, given its role in enhancing immune function and promoting faster recovery (22).

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Social support is important in coping with loneliness and stress. It is known that perceived social support can increase the psychological adaptation and resilience of individuals and is important in maintaining a good mood (23). In studies during infectious disease outbreaks in the general population. it has been stated that seeking social support is among the main coping strategies (24). There are many studies that report that social support also positively had affected mental health during the COVID-19 pandemic (25-29). An online study with a total of 2020 participants found that individuals in isolation had significantly higher rates of depression. irritability and loneliness than those who were not. In addition. it has been shown that the perceived social support is a protective factor for depression and poor sleep quality (27). In another study that were carried out on people in quarantine. it was detected that the prevalence of the symptoms of anxiety. depression and stress were %40.5. %57.5 and %55.5 respectively. That study also found out that social support by friends was a decreasing factor on depression and stress during quarantine (28). Most of the research in the literature have dealt with the general population and with health workers during quarantine. In this study. it was aimed to determine the symptoms of acute stress. depression and anxiety in hospitalized COVID-19 patients. and how these symptoms were affected by the perceived social support.

Materials and Methods

Patients who were hospitalized with a COVID-19 diagnosis at Public Hospital between 01.12.2021 and 01.03.2022 were included in the study. The study was approved by the XXX Health Sciences University Faculty of Medicine Non-Interventional Ethics Committee (2021/12 – 05.11.2021). All patients included were free of any mental or physical condition that would prevent them from completing a self-report form. They were all literate and over 18 years of age. The 'Interview Form' prepared by the researchers specifically for this study was administered to the patients. Participation was based on voluntary consent, and patients who agreed to participate were selected through a simple random sampling method among those who met the inclusion criteria.

The acute stress disorder scale NSESSS. which is a self-report inventory. was used to measure acute stress symptoms. 'Severity of Acute Stress Symptoms-Adult (National Stressful Events Survey Acute Stress Disorder Short Scale [NSESSS])' was published in DSM-V as a tool to evaluate the severity of the acute stress symptoms. The Turkish validity and reliability study of NSESSS was made by Aşçıbaşı et al. (30).

Hospital Anxiety and Depression Scale (HADS) was also used as a self-report tool to measure the symptoms of anxiety and depression symptoms of hospitalized COVID-19 patients. HADS was developed by Zigmond and Snaith in 1983 to determine the risk of depression and anxiety as well as to evaluate the degree and change in severity of depression and anxiety symptoms (31). The Turkish validity and reliability study of the scale was conducted by Aydemir et al. The Turkish cut-off points for HADS was determined as 10 for HADS-Anxiety (HADS-A) subscale and 7 for HADS-Depression (HADS-D) subscale (32).

Multidimensional Perceived Social Support Scale (MSPSS). which is also a self-report scale. was applied to determine the patients' perceptions of social support. Multidimensional Scale of Perceived Social Support (MSPSS) was developed in the United States by Zimet et al. in 1988 (33). Validity and reliability studies in Turkish were conducted by Eker and Arkar (2001) (34).

Statistical Analysis: Statistical analyses were performed using IBM SPSS Statistics version 22.0 (SPSS Inc.. Chicago. USA). Continuous variables are reported as means and standard deviations (Mean ± SD). while categorical variables are presented as frequencies and percentages. Normality was assumed based on a sample size exceeding 200. along with Skewness and Kurtosis values falling within ±3.29. Independent samples t-tests were conducted to compare group means. Pearson correlation analysis. a parametric method. was used to assess relationships between the scale and its subscales. The Chi-square test was applied to examine associations between categorical variables. A p-value of less than 0.05 was considered statistically significant.

Results

A total of 138 patients were included in the study. of the participants. 81 (58.7%) were male and 57 (41.3%) were female. The average age of the participants was found to be 42.96 ± 15.10. Sociodemographic findings and clinical characteristics of the participants are given in Table-1.

The mean NSESSS score of the patients was 7.06; the mean HADS depression score was 6.77; and

Table 1: Demographic and Clinical Characteristics

		(n=138) Mean ± SD/ n (%)
Age		42.96 ± 15.10
Number of Children		1.85 ± 1.43
Years of Education		9.94 ± 4.31
The Duration of COVID-19-Positive Days		9.47 ± 6.31
		Total (n%)
Sex	Male	81 (58.7%)
	Female	57 (41.3%)
Marital status	Married	101 (73.2%)
	Single	37 (26.8%)
	Working	69 (50.0%)
Occupation	Not working	41 (29.7%)
	Retired	28 (20.3%)
Symptoms of disease	Fever	15 (10.9 %)
	Muscle pain	34 (24.6%)
	Cough	57 (41.3%)
	Dyspnea	29 (21.0%)
	Headache	28 (20.3%)
	Fatigue	39 (28.3%)
	Sore throat	17 (12.3%)
	Diarrhea	6 (4.3%)
	Chest pain	16 (11.6%)
	Other	6 (4.3%)

Table 2: Distribution of Scale Scores

	Mean ± SD/ n (%)
NSESSS	7.06 ± 5.06
Family Subscale of MSPSS	24.76 ± 4.73
Significant Other Subscale of MSPSS	22.90 ± 6.56
Friends Subscale of MSPSS	22.61 ± 6.24
Total MSPSS	70.27 ± 14.89
HADS depression total	6.77 ± 4.44
HADS anxiety total	7.47 ± 4.77
HADS depression score >7 n (%)	70 (50.7%)
HADS anxiety score >10 n (%)	48 (34.8%)

NSESSS: National Stressful Events Questionnaire Acute Stress Disorder Short Scale . MSPSS: Multidimensional Perceived Social Support Scale. HADS: Hospital Anxiety and Depression Scale

the mean HADS anxiety score was 7.47. The average scale scores are given in Table-2.

When the Hospital Anxiety Depression Scale (HADS) was evaluated according to the recommended cut-off points. the prevalence of depression and anxiety symptoms were found to be %50.7 (n:70) and %34.8(48) respectively (Table-2).

NSESSS total scores were negatively related with MSPSS total scores and MSPSS-Family. MSPSS-Significant Other. MSPSS-Friends subscale scores (Table-3).

Table 3: The correlation Coefficients of Pearson's Scale Scores

		1	2	3	4	5	6	7
1.NSESSS total	r	1						
	p							
2.Family Subscale of MSPSS	r	-0.243**	1					
	p	0.004						
3.Significant Other Subscale of MSPSS	r	-0.244**	0.660**	1				
	p	0.004	<0.001					
4.Friends Subscale of MSPSS	r	-0.221**	0.590**	0.506**	1			
	p	0.009	<0.001	<0.001				
5.Total MSPSS	r	-0.276**	.856**	0.863**	0.830**	1		
	p	<0.001	<0.001	<0.001	<0.001			
6.HADS anxiety total	r	0.684**	-0.162	-0.149	-0.239**	-.218*	1	
	p	<0.001	0.058	0.082	0.005	0.01		
7.HADS depression total	r	-0.183**	-0.165	-0.203*	-0.259**	-0.251**	0.817**	1
	p	<0.001	0.054	0.017	0.002	0.003	<0.001	

NSESSS: National Stressful Events Questionnaire Acute Stress Disorder Short Scale. MSPSS: Multidimensional Perceived Social Support Scale. HADS: Hospital Anxiety and Depression Scale. *Correlation is significant at 0.05 level (Pearson correlation test). **Correlation is significant at 0.01 level (Pearson correlation test)

HADS-depression total scores were negatively related to MSPSS total scores. MSPSS-Significant Other score and MSPSS-Friends score (Table-3).

HADS-anxiety total scores were found to have a negatively significant relation with MSPSS total scores and MSPSS-Friends subscale score (Table-3).

Discussion

In this study. it was aimed to discover the relationship between perceived social support and the symptoms of acute stress. anxiety and depression in patients hospitalized with a COVID-19 diagnosis.

The average scores of NSESSS were found to be 7.06. In the validity and reliability study of NSESSS conducted in Turkey. the average score of the healthy group was found to be 3.13 (30). Du to these findings. it was thought that the patients who tested positive for COVID-19 had higher acute stress symptoms compared to the healthy population. In a study in which 58 hospitalized patients with the diagnosis of COVID-19 were included. mild to moderate symptoms of acute stress disorder were detected in 25% of the patients (35). In another study. it was stated that acute stress symptoms were detected in 40% of the patients hospitalized with a COVID-19 diagnosis (36).

According to the recommended cut-off points of the Hospital Anxiety Depression Scale (HADS). the prevalence of depression was found to be 50.7% and the prevalence of anxiety was found to be 34.8%. In a meta-analysis. the prevalence of depression was 48% (12 studies included) and the prevalence of anxiety was 42% (13 studies included) in hospitalized patients diagnosed with COVID-19 (37). According to these analyses. it can be claimed that our results are consistent with other psychiatric literature. Although there are differences and heterogeneity depending on the scales and methods of other studies. depression and anxiety were found to be generally high in COVID-19 patients.

In this study. a negative correlation between perceived social support and acute stress symptoms was observed in hospitalized patients with a diagnosis of COVID-19. MSPSS total scores and all the subscale scores of it (friends. family. significant other) were found to have a negative correlation with symptoms of acute stress. As to our knowledge. there are no other studies examining the relationship between acute stress symptoms and social support of patients who are hospitalized with a COVID-19 diagnosis. There are studies that report that social support is protective for COVID-19-related acute stress symptoms in the general population (38. 39). In another study in which the COVID-19 patients are evaluated with Depression. Stress and Anxiety Scale (DASS21) and MSPSS. it was reported that stress subscale and perceived social support are negatively related (40). In a study where COVID

patients were evaluated using perceived social support scale-family (PSS-Fa) and Perceived Stress Scale-4. it was found that perceived stress and perceived social support of family were negatively related (41).

Our study identifies that in hospitalized patients with a COVID-19 diagnosis. depression and anxiety symptoms are negatively related with MSPSS total scores and MSPSS-Friends subscale scores. The significant other subscale was also negatively related with depression symptoms in our patients. There are very few studies in the literature that examine the relation between social support and psychiatric symptoms in COVID-19 patients. In the paper of Kandeğer et al. the HADS scores of hospitalized patients with a COVID-19 diagnosis were found statistically negatively related with MSPSS total scores. the MSPSS-Family subscale scores and the MSPSS-Friends subscale scores (42). But there were no information about the relationship between MSPSS subscale scores and HADS-anxiety and HADS-depression scores. In the study of Kong et al.. depression and anxiety symptoms were found negatively related with social support in COVID-19 patients. When the subscales were evaluated. depression symptoms were found to have a meaningful negative relationship with social support from friends. family and significant-others while anxiety symptoms were negatively related with social support from friends and significant others (43). In the study of Largani et al. where they only focused on social support provided by family in COVID-19 patients. anxiety and depression symptoms were found negatively related with social support from family. In the paper of Chen et al.. it was detected that social support was a protective factor against depression and anxiety in hospitalized COVID-19 patients (41). In a study conducted by Sadeghian et al.. in COVID-19 patients. social support was again negatively related with symptoms of depression and anxiety (40).

This study was conducted on hospitalized COVID-19 patients. Some of the relatives of the patients were COVID-19-contacted or COVID-19-positive. Even though the patients' perceived social support from family members was high. this situation was not reflected in the symptoms that much. This may be due to fa

mily members' own anxiety about the patient's condition. On the other hand. this study indicates that perceived social support. family support and the support of the significant others had an important role in preventing symptoms of depression. anxiety and acute stress. As the stress-buffering model suggests. perceived social support can protect individuals from the impact of negative situations (44). It is known that perceived social support is important in preventing symptoms of stress. anxiety and depression. including those caused by the infectious disease itself (45-48). It has also been reported that stress-related psychiatric conditions that may occur in the absence of social support negatively affect the immune system (22). Patients need social support both in the fight against the symptoms of COVID-19 and the symptoms of stress. anxiety and depression brought about by COVID-19.

This study contributes to understanding the relationship between perceived social support and symptoms of acute stress, anxiety, and depression in patients hospitalized with a COVID-19 diagnosis. However, it has several limitations. Due to the restrictions imposed by quarantine measures during the pandemic, data were collected through self-report scales, which may be subject to response biases. Additionally, the relatively small sample size limits the generalizability of the findings. Most importantly, the cross-sectional design of the study precludes the ability to draw causal inferences regarding the observed relationships. Future research should employ longitudinal designs that include the post-discharge period and the normalization phase of the COVID-19 pandemic, using clinical assessment tools to obtain more robust and causally informative data.

Although this study has limitations. it may provide new insights on how to mitigate the effects of COVID-19 on the mental health by creating an environment of social support.

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