

Effect of COVID-19 Pandemic on Mental Health in Patients with Kidney Transplantation

***Gülşah Şaşak Kuzgun, Tahsin Karaaslan, Sabahat Alışır Ecdar**

Goztepe Prof Dr Suleyman City Hospital, Department of Nephrology, Istanbul, Turkey.

*E-mail: gulsahsasak@gmail.com

Abstract: Severe acute respiratory syndrome coronavirus-2 is the cause of coronavirus disease 2019 (COVID-19). The most effective method in controlling the disease is maintaining the distance between people and, if necessary, quarantine. Recent evidence suggests that people kept in isolation and quarantine experience significant anxiety, confusion, and stress levels. This study aims to investigate the effects of COVID-19 on mental health in kidney transplant recipients. In this cross-sectional study, all renal transplant patients who followed up in our transplantation clinic were evaluated to be included in the study. The Turkish version of the fear of COVID-19 scale, depression anxiety stress scale (DASS-21), and satisfaction with life scale (SWLS) were administered to the patients. Patients were interviewed face-to-face by the same physician. A total of 68 patients were included in the study: 29 (42.6 percent) women and 39 (57.4 percent) men. In the present study, we detected that DASS-21 anxiety, depression, stress, and total scores were higher in patients with a family history of psychiatric disease than without ($p < 0.05$). We did not find any statistical differences between patients' demographic characteristics and fear of COVID-19 scale, DASS-21 anxiety, depression, stress, and total scores except for family history of psychiatric disease. More extensive and multi-center studies are needed to determine these patients' anxiety and depression states in the future.

Keywords: Covid-19; kidney transplantation; anxiety

INTRODUCTION

Severe acute respiratory syndrome coronavirus-2 is the cause of coronavirus disease 2019 (COVID-19). The covid-19 infection has different clinical presentations ranging from asymptomatic or mild respiratory infection to acute respiratory distress¹. Patients with kidney transplantation must use drugs that suppress their immune system to prevent organ rejection. This makes them prone to various infections, including COVID-19. The clinical presentation and severity of the COVID-19 disease in these patients' groups is still unknown. These patients are recommended not to enter closed environments and to be isolated. Recent evidence suggests that people kept in isolation and quarantine experience significant anxiety, confusion, and stress². These can pose risks to the mental health of the individuals.

A few numbers of studies have investigated the effects of COVID-19 on mental health. Salari et³ conducted a meta-analysis of studies investigating stress, depression, and anxiety in the general population during the covid-19 pandemic. They found that

Corresponding Author: Gülşah Şaşak Kuzgun

Göztepe Prof Dr Süleyman Yalçın Şehir Hastanesi, Nefroloji Bölümü, İstanbul, Turkey.

E-mail: gulsahsasak@gmail.com

COVID-19 results in several psychological disorders. Karlıdag et al⁴. studied the effect of COVID-19 on mental health and their relationship with clinical variables. They suggested that COVID-19 affects patients psychologically, especially females, married, rural people, ones with chronic medical or psychiatric disorders, and respiratory symptoms. We did not find any studies about the relationship between COVID-19 and mental health in kidney transplant recipients. This study aimed to investigate the effects of COVID-19 on mental health in kidney transplant recipients.

MATERIALS AND METHODS

In this cross-sectional study, all renal transplant patients who were followed up in our transplantation clinic were evaluated to be included in the study. Goztepe Educational and Research Hospital (Istanbul/Turkey) ethics committee approved the study protocol (02.9.2020/0542). The trial was conducted following the principles of the Declaration of Helsinki. Written informed consent was taken from all subjects before enrollment.

At the time of admission to the hospital, patients were questioned regarding their age, sex, marital status, education status, occupation, smoking, history of chronic disease, history of psychiatric disease, history of psychiatric disease in their first-degree relatives.

Scales Used in Evaluation

In our study, the Turkish version of the fear of COVID-19 scale, depression anxiety stress scale (DASS-21), and satisfaction with life scale (SWLS) were administered to the patients. Patients were interviewed face-to-face by the same physician. Fear of COVID-19 Scale: Ahorsu et al⁵. developed a valid and reliable scale to assess COVID-19 fear. In Turkey, the fear of COVID-19 scale was adapted to Turkish by Satici et al⁶. The Turkish version of the scale was shown to have robust psychometric features.

Lovibond developed DASS-21 to assess anxiety, depression, and stress⁷. DASS-21 was built upon the original DASS by Henry and Crawford, and Mahmoud et al^{8,9}. DASS-21 includes three sub-scales that assess depression, anxiety, and stress. DASS-21 was adapted into Turkish by Yilmaz et al¹⁰. SWLS was developed by Diener et al¹¹. and is a one-dimensional 5-point scale. High scores indicate a higher level of satisfaction with life. The SWLS was adapted into Turkish by Durak et al¹².

Statistical analysis

Statistical analysis of the data conducted in the IBM SPSS 22 statistical package program. The data were expressed as the mean± standard deviation (SD) for continuous variables and percentage for categorical variables. Mann–Whitney U test was used to compare two independent samples. Kruskal–Wallis test was used to compare more than two independent samples for categorical variables. A p-value below 0.05 was considered statistically significant.

RESULTS AND DISCUSSION

A total of 68 people was included in the study: 29 (42.6 percent) women and 39 (57.4 percent) men. Demographic characteristics of patients are summarized in Table 1. We compared the anxiety, depression, stress and total DASS 21 scores, fear of COVID-19, and SWLS scores obtained as a result of the scales with the characteristics of the patients such as age over 65 and under, gender, education, marital status, educational status, economic status, job, smoking and alcohol use, quarantine history, presence of

psychiatric diseases, family history of psychiatric disease. In the present study, we detected that DASS-21 anxiety, depression, stress, and total scores were higher in patients with a family history of psychiatric disease than without. No significant difference was present between scale scores and any of the parameters we compared. ($p \geq 0.05$) (Table 2).

Covid-19 has affected the whole world in many aspects; socially, economically, and psychologically. This study is the first to investigate the effects of COVID-19 infection on the mental health of kidney transplant patients. In our patients, there was no difference in terms of anxiety levels between men and women, over and less than 65 years of age, those with high and low education levels, those who were married and single, those who used alcohol, and those who did not use alcohol. We found that only patients with a family history of psychiatric disease had high DASS-21 anxiety, depression, stress, and total scores (Table 2).

Table 1. Demographic Features of the Patients.

Gender	
Female	29(42.6%)
Male	39(77.4%)
Smoking	7(10.3%)
Alcohol	3(4.4%)
Marital status	
Married	51(75%)
Single	17(25%)
Educational status	
Primary school	34(50%)
High school	24(35.3%)
University	10(14.7%)
Occupation	
Housewife	22(32.4%)
Retired	30(44.1%)
Worker	16(23.5%)
Unemployed	0(0%)
Economic situation	
Low	16(23.5%)
Middle	52(76.5%)
High	0(0%)
History of quarantine	6(8.8%)
A history of psychiatric illness	4(5.9%)
A family history of psychiatric illness	3(4.4%)

Table 2. The Results of Analysis of Comparison of Demographic Characteristics of Patients with the Anxiety, Depression, Stress and Total DASS 21 Scores, Fear of COVID-19, and SWLS Scores.

	Anxiety	Depression	Stress	Total	Fear of COVID-19	SWLS
Age/p value	p:0.841	p:0.921	p0.796	p:0.929	p:0.808	p:0.410
<65 age	0.5(0-15)	0(0-12)	2(0-16)	4(0-34)	12(0-25)	21(5-35)
>65 age	1(0-5)	0(0-4)	3(0-7)	3.5(1-16)	18(4-22)	27(0-33)
Gender/p value	p:0.802	p:0.600	p:0.707	p:0.880	p:0.334	p:0.622
Female	0.5(0-15)	0(0-12)	1(0-16)	2(0-34)	13.5(0-24)	23(5-25)
Male	1(0-8)	0(0-12)	3(0-15)	4(0-30)	12(0-25)	21(5-34)
Education al status/p value	p:0.343	p:0.268	p:0.395	p:0.418	p:0.158	p:0.166
Primary	0(0-8)	0(0-12)	1(0-16)	2(0-33)	14(0-25)	22(5-35)
High school	1(0-8)	1(0-12)	2(0-15)	4(0-30)	12(7-22)	21(5-34)
University	5(0-15)	0(0-9)	4(0-15)	4.5(0-34)	15(7-22)	23.5(6-30)
Marital status/p value	p:0.951	p:0.453	p:0.384	p:0.627	p:0.106	p:0.773
Single	1(0-15)	0(0-9)	2(0-15)	3.5(0-34)	10(0-18)	19(5-34)
Married	1(0-8)	0(0-12)	2(0-16)	4(0-33)	15(0-25)	24(5-35)
Occupation /p value	p:0.804	p:0.690	p:0.195	p:0.331	p:0.427	p:0.533
Housewives	0(0-8)	0(0-12)	1(0-16)	3(0-33)	15(7-25)	17(5-35)
Worker	0.5(0-5)	0.5(0-8)	3(0-11)	6.5(0-21)	12(4-20)	20(5-34)
Retired	1(0-15)	0(0-12)	1(0-15)	2.5(0-34)	9.5(0-22)	24.5(6-33)
Unemployed	0	0	0	0	0	0
Economic situation/p value	p:0.854	p:0.941	p:0.202	p:0.285	p:0.894	p:0.235
Low	0(0-15)	0(0-12)	0.5(0-16)	2(0-33)	11(7-24)	19(5-28)
Middle	1(0-15)	0(0-9)	2.5(0-15)	4(0-34)	12(0-25)	24(5-35)
High	0	0	0	0	0	0
Smoking/p value	p:0.296	p:0.707	p:0.566	p0.784	p:0.821	p:0.632
Yes	1(0-5)	0(0-12)	3(0-15)	4(0-30)	9(7-19)	24(15-27)
No	0(0-15)	0(0-12)	2(0-16)	4(0-34)	12(0-25)	20(5-35)
Alcohol/p value	p:0.844	p:0.129	p:0.480	p:0.337	p:0.667	p:0.532
Yes	1(0-1)	0(0-0)	1(0-3)	2(0-4)	9(7-19)	24(21-27)
No	1(0-15)	0(0-12)	2(0-16)	4(0-34)	12(0-25)	21(5-35)

History of quarantine/p value	p:0.253	p:0.990	p:0.767	p:0.889	p:0.800	p:0.258
Yes	2.5(0-4)	0(0-12)	1.5(0-15)	4.5(0-30)	7.5(7-16)	23.5(5-35)
No	0.5(0-15)	0(0-12)	2(0-16)	3.5(0-34)	13(0-25)	20.5(5-35)
A history of psychiatric illness/p value	p:0.812	p:0.186	p:0.891	p:0.645	p:0.950	p:0.987
Yes	1.5(0-3)	3(0-3)	3(0-15)	7.5(0-21)	12.5(7-19)	22(7-29)
No	1(0-15)	0(0-12)	2(0-16)	4(0-34)	12(0-25)	21.5(5-35)
A family history of psychiatric illness/p value	p:0.038	p:0.025	p:0.015	p:0.025	p:0.500	p:0.845
Yes	3(3-3)	3(3-5)	11(6-15)	19(12-21)	15(10-19)	19(17-25)
No	0(0-15)	0(0-12)	1(0-16)	3(0-34)	12(0-25)	22(5-35)

*Mann–Whitney U test was used to compare two independent samples and Kruskal–Wallis test was used to compare more than two independent samples. The level of significance was set at $P < .05$. **The numerical values in the table are median (minimum–maximum) values.

Our knowledge about COVID-19 infection is limited; the contamination and mortality rates of the virus are high. Furthermore, COVID-19 infection can cause anxiety, panic attacks, and suicidal thought. A meta-analysis showed that the prevalence of stress, anxiety, and depression because of the COVID-19 pandemic in the general population, was 29.6, 31.9, and 33.7 percent, respectively³. The National Health Commission of China also released basic principles for emergency psychological crisis interventions for 2019-nCoV pneumonia on Jan 26, 2020¹³. Anxiety, when above-average, weakens the immune system and increases the risk of infection. Previous research had shown that patients with chronic illnesses are more vulnerable to mental illnesses¹⁴.

Kidney transplantation patients are under immunosuppression at high risk of any infection. The progression of Covid-19 disease in kidney transplant recipients is not precisely known. Initially, it was thought that the risk of transmission was higher in kidney transplant recipients and that the disease would progress more severely. However, it was found that the prevalence of COVID-19 virus infection was 1.6-3 percent in kidney transplant recipients. Ozturk et al¹⁵. found that patients with kidney transplantation have an 11.1 percent mortality rate. Their patients adjusted mortality and combined outcomes (mortality and intensive care admission) did not differ from the control group. The uncertainty of the clinical progression of the disease may increase the anxiety and stress levels of kidney transplant patients. Although Karlıdag et al⁴. found a positive relationship between chronic diseases and fear of Covid-19 and anxiety, we did not find increased anxiety in kidney transplant recipients.

We only found that patients with a family history of the psychiatric disease have high DASS-21 anxiety, depression, stress, and total scores. Karlidağ et al⁴. also stated that patients with the psychiatric disorder had higher fear of COVID-19 scale, DASS-21 anxiety, and total scores than those without. Since psychiatric disorders involve neurotransmitter abnormalities in the cerebrum, these patients seem to have poor control of anxiety and anger symptoms related to the emotional center^{3,16}. We could not find any relationship with anxiety, depression, stress. We think it is because our patients with a history of psychiatric disorders number were minimal. Considering that most psychiatric diseases are genetically inherited, having a family history of the disease puts these patients at risk.

During this period, our patients reached us by all the communication ways and conveyed their problems. These results can be due to this. Physicians following kidney transplant patients should consider that patients may be under intense stress during this period, suppressing immunity. By providing patients with easy access to their physicians, patients' intense stress and anxiety can be reduced. Our limitation is sample size was small. Our study has some limitations. One of them is that the number of patients was small. The other one is that anxiety and stress levels of the patients evaluated through a questionnaire may not be compatible with the evaluation of psychologists and psychiatrists.

CONCLUSION

We aimed to study the effect of Covid-19 on kidney transplant recipients. We only have if patients have mental illness risk factors have more anxiety, depression, and stress during the pandemic. It can be expected that all types of psychiatric disorders may be negatively affected by the fear of COVID-19. Research with more sample size is needed for more complete results.

CONFLICT OF INTEREST

The author report no conflicts of interest and no funding resources in this study.

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