RESEARCH ARTICLE / ARAŞTIRMA YAZISI

Investigation of Activities of Daily Living and Hospital Anxiety and Depression Levels of COVID-19 Patients: A Descriptive Study

COVID-19 Hastalarının Günlük Yaşam Aktiviteleri ve Hastane Anksiyete ve Depresyon Düzeylerinin İncelenmesi: Tanımlayıcı Bir Çalışma

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Abstract:

This study aimed to examine the COVID-19 patients' hospital anxiety, depression levels and independence in activities of daily living. This descriptive cross-sectional study was conducted with n=100 COVID-19 patients. The data was collected using a patient descriptive information form, the "Katz Index of Independence in Activities of Daily Living", and the "Hospital Anxiety and Depression Scale". Descriptive statistics, Student t-test, Mann Whitney U test, One-way ANOVA test, and Kruskal Wallis test were used to compare groups. The significance level is pre-specified as 0.05. The mean age of the patients was 41.77 ± 12.10 years (Min: 20, Max: 70). More than half of the patients were male (68%), and 86% were treated and cared for in the service isolation rooms. Hospital Anxiety Depression Scale mean scores were 6.66 ± 6.05 (Min: 0, Max: 21) and the Katz Index of Independence in Activities of Daily Living mean scores were 5.57 ± 1.27 (Min: 0, Max: 6). It was determined that as the patients' level of independence in their daily living activities increased, their hospital anxiety and depression levels decreased. A negative moderate correlation ($r = -0.530$, $r = -0.552$) was found between the mean scores of these variables. Since these patients usually receive care in isolation in their rooms, activities of daily living should be monitored and supported in terms of the hospital anxiety and depression levels.

Keywords: Activities of daily living, anxiety, COVID-19, depression, pandemic

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Öz:

Bu çalışma, COVID-19 hastalarının hastane anksiyete, depresyon düzeyleri ve günlük yaşam aktivitelerindeki bağımsızlıklarını incelemeyi amaçladı. Tanımlayıcı kesitsel tipteki bu çalışma 1-30 Ağustos 2020 tarihleri arasında n=100 COVID-19 hastası ile yapıldı. Verilerin toplanmasında hasta sosyodemografik tanımlayıcı bilgi formu, "Katz Günlük Yaşam Aktivitelerinde Bağımsızlık İndeksi" ve "Hastane Anksiyete ve Depresyon Ölçeği" kullanıldı. Verilerin istatistiksel analizinde tanımlayıcı istatistikler, Student t testi, Mann Whitney U testi, One-way ANOVA testi ve Kruskal Wallis Testi kullanıldı. p<0.05 değeri istatistiksel olarak anlamlı kabul edildi. Hastaların yaş ortalaması 41.77 ± 12.10 (Min:20, Max:70) idi. Hastaların yarısından fazlası (%68) erkekti ve %86'sı servis izolasyon odalarında tedavi ve bakım alıyordu. Hastane Anksiyete Depresyon Ölçeği puan ortalamaları 6.66 ± 6.05 (Min: 0, Max: 21) ve Katz Günlük Yaşam Aktivitelerinde Bağımsızlık puan ortalamaları 5.57 ± 1.27 olup, hastaların günlük yaşam aktivitelerinde bağımsızlık düzeyi arttıkça hastane anksiyete ve depresyon düzeylerinin azaldığı belirlendi. Bu değişkenlerin ortalama puanları arasında negatif orta düzeyde bir korelasyon (r = -0.530, r = -0.552) bulundu. COVID-19 hastaları genellikle odalarında izole bir şekilde bakım aldıkları için günlük yaşam aktiviteleri ve hastane anksiyete ve depresyon düzeyleri değerlendirilmeli ve desteklenmelidir.

Anahtar Kelimeler: Günlük yaşam aktiviteleri, anksiyete, COVID-19, depresyon, pandemi.

Introduction

The novel Coronavirus (COVID-19) symptoms include high fever, fatigue, sore throat, runny nose, cough, and dyspnea (Centers for Disease Control and Prevention, 2020). The disease limits the daily activities of the patients and impairs their functional capacity, especially due to the symptoms of dyspnea and airway obstruction that increase with effort. In the presence of severe cardio-pulmonary symptoms, patients find it difficult to perform even the simplest physical activities; thus, they develop activity avoidance behavior. In addition, the strict isolation rules followed during the acute care process of COVID-19 patients restrict the patient's mobility (Steardo et al., 2020). Limited physical activities affect individuals emotionally, socially, and in terms of behaviors, as well as affect all activities of daily living (ADL) such as self-care, mobilization, sleep, and rest (Khademi et al., 2021; Özel et al., 2019; Zhang et al., 2020). Limitations in the patient's ADL negatively affect the quality of life by increasing care dependency. In addition, it is stated that decreased ADL level is associated with a poor prognosis after COVID-19 (Bousqet et al., 2020).

Infectious diseases are known to increase susceptibility to anxiety and depression. According to the study investigating the relationship between SARS and depression, the prevalence of depression at one-month post-discharge was reported as 18% (Wu et al., 2005), and 15.6% (Mak et al., 2009) at 30-month post-discharge. Studies on the mental health of COVID-19 inpatients reported that nearly half of the patients were depressed (Ma et al. 2020; Zhao et al. 2020) and experienced moderate to severe anxiety (Kong et al. 2020; Nie et al., 2020). Although the data on COVID-19 is new, it has been reported that factors caused by the disease and the treatment process such as social isolation and loneliness, loss of freedom, suffering from a highly contagious disease for which there is no definite treatment, and negatively affected physical activities lead to problems such as stress, anxiety, and depression in individuals (Brooks et al., 2020; Li et al., 2020; Ma et al., 2020; Nie et al., 2020; Wei et al., 2020).

Mental disorders such as anxiety and depression negatively affect the immune systems of individuals; symptom control of these patients becomes difficult and their quality of life is seriously deteriorated (Kong et al., 2020). Individuals with depression may have a negative attitude towards antiviral therapy, which can reduce their adherence to treatment and recovery (Ma et al., 2020). Measuring ADL is an important step in determining the functional status of the patient and providing the care he/she needs. Patients should be assessed both psychologically and physically during the treatment and care process for COVID-19 (Quidley-Rodriguez and de Tantillo, 2020). Although there are epidemiological data on the anxiety and depression levels of COVID-19 patients (Alhajjaj et al., 2020; Li et al., 2020; Ma et al., 2020; Wei et al., 2020; Zhao et al., 2020), no studies have yet evaluated the daily living activities and anxiety-depression levels of COVID-19 patients holistically. This study investigates the ability of COVID-19 patients' daily living activities and hospital anxiety and depression levels during the treatment and care to fill the gap in the literature.

Methods

Aim

The study aimed to examine the COVID-19 patients' ADL and their hospital anxiety and depression levels.

It addressed the following research questions:

What are the dependence levels of COVID-19 patients in terms of performing daily activities?

What are the scores of the COVID-19 patients in the study obtained from the Hospital Anxiety and Depression Scale (HADS)?

Is there a relationship between the ability of COVID-19 patients to perform ADL and their scores on the HADS?

Setting and Study Sample

The descriptive study included adult patients with COVID-19 who were hospitalized in a state hospital. A total of 100 patients were enrolled in this study between 1-30 July 2020. The inclusion criteria were as flows: (1) who were in the COVID-19 clinic or the secondary intensive care where COVID-19 patients were treated, (2) who spent at least three nights in the hospital, (3) who were conscious (13 and above, Glasgow Coma Scale), (4) who could have communicated verbally, (5) who did not have any obstacle to participate in the study in terms of their treatment process, and (6) who approved to participate in the study voluntarily. The study group included in the research was determined by the purposive sampling method. The power analysis of the study, which was completed with 100 patients, was performed using the G Power 3.1 package program. In the post hoc power analysis performed considering the sample size of 100 patients, the correlation of the relationship between Katz ADL and HADS mean scores was $r = 0.53$; the effect size was 0.72, and the power of the study was calculated as 95% (95% confidence interval).

Data Collection

The patients were informed about the study by the researcher. The data collection form was sent to the patients who agreed to participate in the study through social media application. The patients marked the option "I have been informed about the research and I agree to participate" and answered the questions in approximately 10 minutes. The researchers who collected and analyzed the data were different to avoid bias. The STROBE checklist was used in conjunction with this article.

The data collection forms consisted of three parts: The Patient's socio-demographic descriptive information form, the Katz ADL, and the HADS.

The Patient socio-demographic descriptive information form

A form prepared by the researchers containing the descriptive characteristics of the patient such as the clinic where the individual was treated, gender, age, marital status, educational status, presence of a chronic illness, employment status, financial status, smoking, alcohol use, symptoms at hospital admission, how the individual evaluated his/her health, and how the current health condition affected ADL (Brooks et al., 2020; Burtscher et al., 2020; Wu et al., 2005).

Katz Index of Independence in Activities of Daily Living (Katz ADL)

The Katz ADL scale was developed in 1970 (Katz et al., 1970). The validity and reliability study of the scale was conducted in 2001 by Diker et al. (Diker et al., 2001). The scale assesses the dependence status of individuals in their daily living activities (taking a bath, getting dressed, the necessity of carrying when there is a need to use the toilet,

continence, nutrition). Activities are measured at three levels "dependent," "partly dependent" and "independent." The scores are evaluated as follows: between 0-6 dependent, between 7-12 partly dependent, and between 13-18 independent (Katz et al., 1970). The Cronbach's alpha for this scale for the current study was calculated with a value of 0.908.

Hospital Anxiety and Depression Scale (HADS)

The HADS was developed in 2009 (Zigmond and Snaith, 1983) and the validity and reliability study of the scale was conducted in 1997 (Aydemir et al., 1997). It is used to diagnose anxiety and depression in a short time and determine the risk group for patients with physical diseases and those who need primary health care. The lowest score that patients can obtain from both subscales is 0, and the highest score is 21. The cut-off points of the Turkish form of the HADS were determined as 10 for the anxiety subscale (HADS-A) and 7 for the depression subscale (HADS-D) (Aydemir et al., 1997). The Cronbach's alpha values for the HADS-A subscale were 0.982 and for the HADS-D subscale were 0.987.

Data Analysis

The data analyses were performed in the SPSS for Windows 22.00 statistical package program. Descriptive statistics (number, mean, frequency, standard deviation, minimum and maximum values) were performed. Skewness-Kurtosis value ranges and Shapiro Wilk test was used for normality analysis of data. Student t-test, Mann Whitney U test, One-way ANOVA test and Kruskal Wallis test was used to compare groups. The Bonferroni correction was performed to analyze differences betweeen the groups. The relationship between scale scores was determined by performing the Pearson Correlation analysis. The level of statistical significance for all analyses was set at $p < 0.05$.

Ethical Considerations of the Study

The study was approved by the university ethical board (Date: 29.07.2020, Number:0031) and written institutional approval was obtained from the hospital administration. Permissions were received from the authors of the validity and reliability studies of the scales by e-mail. The study was conducted in line with the principles of the Helsinki Declaration.

Results

The patients' mean age was 41.77 ± 12.10 (Min: 20, Max: 70). More than half of the patients were male (68%), the mean days of hospitalization was 3.08 ± 1.17 (1-9) days, and 86% were receiving care and treatment in the clinic. The majority (87.0%) of the patients communicated with their families by phone, 25% had fear of death, 7% started taking psychiatric drugs during the pandemic process, more than half of the patients evaluated their health as average and stated that the disease affected their physical activity (Table 1).

Table 1. The Distribution of the Demographic and Medical Characteristics of the Patients (N=100)

Characteristics		Mean±SD (Min-Max)	
Mean hospital stay (Days)		3.08±1.17 (1-9)	
Mean age (Years)		41.77±12.10 (20-70)	
Characteristics	**Groups**	**N**	**%**
Gender	Female	32	32.0

	Male	68	68.0
Marital status	Married	77	77.0
	Single	23	23.0
Employment status	Working	78	78.0
	Not working	22	22.0
Do you have an additional chronic disease(s)?	Yes	28	28.0
	No	72	72.0
Chronic diseases	Diabetes Mellitus	11	11.0
	COPD	5	5.0
	Hypertension	5	5.0
	Others	7	7
Educational status	Primary school and lower	45	45
	High school	25	25.0
	University and higher	30	30.0
Financial status	Good	8	8.0
	Average	84	84.0
	Poor	8	8.0
Smoking	Yes	21	21.0
	No	71	71.0
	Quit	8	8.0
	Yes	21	21.0
Department	Clinic	86	86
	Intensive care unit	14	14
	Clinic	86	86
Communication with the family	No communication	13	13.0
	By phone	87	87.0
Fear of death	Yes	25	25.0
	No	75	75.0
Take psychiatric drugs during the pandemic	Yes	7	7.0
	No	93	93.0
Evaluation of health during hospitalization	Good	21	21.0
	Average	54	54.0
	Poor	25	25.0
The disease affects physical activities	Yes	58	58.0
	No	42	42.0
How do you think you were infected with COVID-19?	I do not know.	48	48.0
	I contracted it from family members.	8	8.0
	I contracted it from a person outside of my family.	44	44.0
Has any of your family members been hospitalized with a COVID-19 diagnosis?	Yes	25	25.0
	No	75	75.0

Note. * More than one option was selected. COPD: Chronic Obstructive Pulmonary Disease.

Almost half of the patients (48%) did not know how they had been infected, and 25.0% had family members hospitalized due to COVID-19. Of 100 patients, 28.0% had no chronic disease, most of them (11.0%) had Diabetes Mellitus, and 29.7% spent their time at the hospital sleeping (Table 1). Almost half of the patients (48%) did not know how they had been infected, and 25.0% had family members hospitalized due to COVID-19. Of 100 patients, 28.0% had no chronic disease, most of them (11.0%) had Diabetes Mellitus, and 29.7% spent their time at the hospital sleeping (Table 1).

The mean total score of the HADS-A was calculated as 6.66 ± 6.05 (Min: 0, Max: 21) while the HADS-D mean total score was 6.86 ± 6.29 (Min: 0, Max: 21) and the Katz ADL Scale mean total score was 5.57 ± 1.27 (Min:0, Max:6).

When the Katz ADL mean total scores were compared based on some descriptive characteristics of the patients, it was found that the patients who were hospitalized in the clinic, those who communicated with their families by phone, those who did not have fear of death, and those who did not take psychiatric drugs had higher mean total scores

compared to those who were hospitalized in the intensive care unit (t = -15.401, p <0.001), those who did not communicate with their families by phone (z = -9.919, p <0.001), those who had fear of death (t = -5.132, p <0.001), and those who took psychiatric drugs (t = -5.635, p =0.001) (Table 2).

Table 2. Comparison of Katz ADL, HADS-A, and HADS-D Mean Scores of Patients According to Some Descriptive Characteristics of COVID-19 Patients (N=100)

		Katz ADL		HADS-A		HADS-D	
		Mean±SD	Test statistics p	Mean±SD	Test statistics p	Mean±SD	Test statistics p
Department	Intensive care unit	2.92±1.89	t=-15.401	14.57±4.43	t= 6.179	15.57±4.32	t=6.713
	Clinic	6.00±0.00	p<0.001*	5.37±5.26	p<0.001*	5.44±5.36	p<0.001*
Gender	Female	5.59±1.29	t= 0.127	6.78±5.80	t= 0.137	6.96±6.01	t=0.118
	Male	5.55±1.27	p=0.899	6.60±6.21	p=0.892	6.80±6.46	p=0.906
Marital status	Married	5.44±1.42	t= -1.869	7.40±5.85	t= 2.290	7.63±6.12	t=2.306
	Single	6.00±0.00	p=0.065	4.17±6.19	p=0.024*	4.26±6.29	p=0.023*
Educational status	Primary school and lower[a]	5.24±1.720	x^2=3.888	7.53±6.207	x^2=8.185	7.73±6.45	x^2=7.079
	High school[b]	5.84±0.624	p=0.143	7.84±5.850	p=0.017*	8.08±6.45	p=0.029*
	University and higher[c]	5.83±0.647		4.36±5.542	(c-a,b)**	4.53±1.04	(c-a,b)**
Employment status	Working	5.58±1.21	t= 0.291	6.96±6.06	t= 0.503	7.20±6.32	t= 1.033
	Not working	5.50±1.50	p=0.772	5.59±6.05	p=0.351	5.63±6.16	p=0.304
Smoking	Yes[a]	5.37±1.53	F= 5.997	7.95±5.43	F=1.187	7.95±5.69	F=1.463
	No[b]	5.77±0.94	p=0.004*	6.07±6.30	p=0.309	6.22±6.42	p=0.237
	Quit[c]	4.25±2.18	(b-c)**	8.50±4.95		9.62±6.23	
Evaluation of health during hospitalization	Good[a]	6.00±0.00	F=13.160	0.95±1.82	F=57.624	1.00±2.02	F=62.237
	Average[b]	5.87±0.72	p<0.001*	5.62±4.20	p<0.001*	5.66±4.35	p<0.001*
	Poor[c]	4.56±2.02	(c-a,b) **	13.68±5.23	(a-b,c) **	14.36±5.13	(a-b,c) **
Communication with the family	By phone	6.00±0.00	z= -9.919	5.43±5.27	z=-4.738	5.54±5.40	z=-4.637
	No communication	2.69±1.75	p<0.001*	14.84±4.48	p<0.001*	15.69±4.47	p<0.001*
The hospitalization of another family member	Yes	5.92±0.40	t=1.599	6.40±5.40	t= -0.247	6.72±5.58	t=-0.128
	No	5.45±1.43	p=0.113	6.74±6.29	p=0.806	6.90±6.54	p=0.899
Fear of death	Yes	4.56±2.14	t= -5.132	14.44±4.22	t=11.059	15.04±3.91	t= 11.367
	No	5.90±0.47	p<0.001*	4.06±4.00	p<0.001*	4.13±4.23	p<0.001*
Take psychiatric drugs during the pandemic	Yes	3.28±2.42	z= -5.635	19.00±3.00	z= 6.719	19.00±2.88	z= 6.217
	No	5.74±0.96	p=0.001*	5.73±5.14	p<0.001*	5.94±5.47	p<0.001*
The disease affects physical activities	Yes	5.25±1.60	t= -2.986	9.72±5.75	t= 7.372	10.03±5.99	t= 7.341
	No	6.00±0.00	p=0.004*	2.42±3.32	p<0.001*	2.47±3.41	p<0.001*

Note. * Level of statistical significance p<0.05, ** The difference between the groups expressed by letters is statistically significant after Bonferroni correction, z= Man Whitney U Test, t= Student t test, F= One Way Anova test, x^2 = Kruskal Wallis test

In addition, patients who evaluated their health as poor and those who stated that they quit smoking were found to have lower Katz ADL mean total scores than the patients who evaluated their health as good or average (F = 13.160, p <0.001) and those who never smoked (F = 5.997, p = 0.004). It was revealed that the variables of gender, marital status, educational status, employment status, smoking, the hospitalization of another family member, and the effect of the disease on physical activity did not reveal any significant difference in the Katz ADL mean total scores (p> 0.05) (Table 2).

When the HADS-A and HADS-D mean scores were compared according to some descriptive characteristics of the patients, it was found that patients hospitalized in the

intensive care unit compared to those in the clinic (t = 6.179, p <0.001; t = 6.713, p <0.001, respectively), married patients compared to single patients (t = 2.290, p = 0.024; t = 2.306, p= 0.023, respectively), those who evaluated their health as poor compared to those who evaluated it as good or average (F = 57.624, p <0.001; F = 62.237, p <0.001, respectively), those who did not communicate with their families compared to those who communicated by phone (z = -4.738, p <0.001; z = -4.637, p <0.001, respectively), those who had fear of death compared to those who did not (t = 11.059, p <0.001; t = 11.367, p <0.001, respectively), those who took psychiatric drugs compared to those who did not (t = 6.719, p <0.001; t = 6.217, p <0.001, respectively), and those who thought that their disease affected their physical activities compared to those who said the disease did not affect their physical activity (t = 7.372, p <0.001; t = 7.341, p <0.001, respectively) had higher HADS-A and HADS-D subscale mean scores, which were statistically significant. It was found that the mean total scores of the patients with a university degree or higher education level from the

HADS-A and HADS-D subscales were lower than those whose education level was high school and below (x2 = 8.185, p = 0.017; x^2 = 7.079, p = 0.029, respectively). When the mean scores of the HADS-A and HADS-D subscales were compared according to the variables of gender, employment status, smoking, and the hospitalization of another family member, no significant difference was seen (p> 0.05) (Table 2).

There is a negative correlation between the mean total scores of the HADS-A and HADS-D subscales and the Katz ADL total scores (r = -0.530, p <0.001; r = -0.552, p < 0.001, respectively). It was found that as the total score of the patients from the Katz ADL increased, the HADS-A and HADS-D subscale mean scores decreased. In addition, as the HADS-A subscale mean total scores increased, the HADS-D subscale mean scores increased as well. A significant and very strong positive relationship was found between the mean scores of the HADS subscales (r = 0.989, p <0.001) (Table 3).

Table 3. The Correlation Between HADS-A, HADS-D subscales and Katz ADL Scale

	HADS-A	HADS-D	Katz ADL Scale
HADS-A	1		
HADS-D	0.989[*]	1	
Katz ADL Scale	-0.530[*]	-0.552[*]	1

Note. * p<0.001 statistically significant

Discussion

The first striking findings of this study were that the patients treated in the intensive care unit had higher anxiety and depression scale scores. The patients stay in the intensive care unit for a longer period, experience symptoms such as infection, high fever, respiratory distress and were exposed to more invasive procedures (Xiang et al., 2020). In addition, patients receiving treatment in intensive care units were faced with many stressors such as disruption of day-night distinction, sleep disruption, noise, immobilization, monitoring through tube/drains and machines connected to them, procedures applied to other patients, and seeing other patients deteriorate/die (Yava et al., 2011). In addition, the coronavirus can initiate an abnormal immune system response due to direct viral infection of the central nervous system. (Mazza et al., 2020). The "cytokine storm" involved in the immune response of patients with severe symptoms in intensive care units against coronavirus may accelerate neuroinflammation and cause psychiatric symptoms (Dantzer, 2018). Fear of death, uncertainty about the future, traumatic memories of the severe illness, and isolation experienced by patients during COVID-19 are important factors of psychological stress that may interact in defining the psychopathological outcomes. Due to all these factors, intensive care patients were more dependent and experienced more anxiety and depression compared to those in the clinic. Patients treated in the intensive care unit experienced more severe symptoms

related to their vital signs, which may have led to this result (Brooks et al., 2020; Carvalho, 2020).

Married individuals experienced more anxiety and depression. This may be attributed to the fact that they have responsibilities related to home, spouse, and family. Patients are away from family members and cannot fulfill their parental roles and domestic responsibilities as they are isolated during their hospitalization or until the quarantine period after discharge. High levels of anxiety and depression in married patients may be due to the thought of the possibility of death and the anxiety of separation from the family they are responsible for (Kutlu et al., 2016).

There are different findings in the literature regarding the relationship between education level and anxiety/depression levels. The Organisation for Economic Cooperation and Development (OECD) noted that people with high levels of education experience less depression in all countries, while low levels of depression are associated with employment (Organisation for Economic Co-operation and Development, 2018). Although some studies revealed that those with university and higher education levels experience less anxiety and depression in parallel to this study (Kong et al., 2020). Nie et al. (2020) have determined that higher education level is a risk factor for anxiety and depression.

Patients who had a good perception of their health and did not have a fear of death had low anxiety levels. The perception of a situation as stress undoubtedly depends on

many factors. It is thought that patients who evaluated their health as good and did not have the fear of death felt the symptoms of the disease more mildly, did not consider the hospitalization experience as a major stressor, and therefore did not experience high levels of anxiety and depression. It is believed that patients with fear of death experience higher levels of health anxiety than other patients and perceive treatment and care interventions as greater stressors (Khan et al., 2020; Yıldırım and Güler, 2020). However, even in ADL can perform, they seek help from nurses due to the intense anxiety they experience. In addition to all the negativities brought about by the disease process, loss of independence and high anxiety also increase the tendency to depression.

This study revealed that the ADL scores of the patients who stated that they quit smoking were lower than the non-smokers. Smoking harms the respiratory system. It potentially increases the risk of experiencing symptoms associated with COVID-19, positive diagnosis, and worse health outcomes (National Institute of Drug Abuse, 2020). A meta-analysis conducted in China revealed that smokers were at a higher COVID-19 progression risk compared to non-smokers (Patanavanich and Glantz, 2020). The finding in this study suggests that as it is not known when the patients who quit smoking did so, it was assumed that the damage to their lungs continues and they are more dependent on their daily living activities because they feel pulmonary symptoms more.

Those who took psychiatric medications had a high level of dependence on their activities of daily living, and they mostly experienced anxiety and depression. Normally, the incidence of anxiety and depression scores are high in patients with a psychiatric history and related psychiatric medication use. In addition, this psychiatric illness may have been the result of the relapse of the disease due to many stressors such as isolation, loneliness, and hospitalization due to the diagnosis of a highly contagious disease-causing death (Lee et al., 2020; Li et al., 2020; Quidley-Rodriguez and de Tantillo, 2020). In a study investigating anxiety, depression, and health anxiety in Turkey, those with a psychiatric diagnosis were found to have high anxiety and health anxiety levels, which coincides with the findings of this study (Özdin and Özdin, 2020).

Staying in a single room in clinics, restrictions on leaving the room, and lying on the bed in intensive care units without standing up can cause patients to feel that their freedom is restricted (Khademi et al., 2021; Nie et al., 2020). In a study, the vast majority of individuals stated that their physical activities were negatively affected during the isolation process. As far as the reasons behind their inability to perform physical activities are concerned, the individuals stated that they were unable to perform their activities due to a lack of motivation along with isolation (Burtscher et al., 2020). Under these conditions, it is an expected finding that the patients who thought that the disease affected their physical activities have high levels of anxiety.

As the level of Katz ADL scores increased, the levels of HADS scores decreased. Psychological symptoms such as social isolation, dependence on others in activities of daily living, anxiety, and depression are conditions that follow and affect each other (Gümüş et al., 2012), which indicates the psychological well-being of COVID-19 patients deteriorates when their physical dependence increases.

Limitations
This study was conducted in a single hospital with clinically stable patients. The results of this study include the responses of the patients who receive treatment in a single center and who can use smartphones. The results are limited to the answers given by the patients. No observation has been made within the scope of the study.

Conclusion
This study showed that many factors such as the symptoms of COVID-19, the need for isolation due to its contagiousness, loneliness, and the absence of a companion during hospitalization make the patients dependent on someone else, especially the nurse, even in the simplest daily life activities. With the effect of this dependence, disease, and hospitalization, patients' susceptibility to anxiety and depression increases, and their compliance with the treatment is affected. Most of the time, the physical needs of the patients are prioritized and their psychosocial needs are overlooked by the nurses. Confidence-based communication should be established with patients; risk factors for anxiety and depression should be evaluated, and patients should be allowed to express themselves. Besides, nursing interventions should be planned and implemented for physical problems that may be seen in patients such as malnutrition and sleep issues.

Relevance for clinical practice
This present study demonstrated that the symptoms of COVID-19 can affect patients physically and in terms of anxiety and depression. It must give an idea about the holistic care that mental health nurses and even nurses who care for COVID-19 patients are expected to provide. The nurses responsible for the care of patients need to be aware of the anxiety and depression experienced by the patients and the affecting factors. This awareness will enable nurses to carry out planning, guidance, support, and protection to minimize psychosocial problems such as anxiety and depression that continue and may deepen in the future in COVID-19 patients or other patients isolated because of serious infectious diseases.

Declarations

References

Alhajjaj, A. H., Al Abduljaber, T. H., Alsadeq, Z. A., Alkhabbaz, F. L., Alobaidan, H. H., Al Saeed, F. A., Al-Jishi, J. M. and Aljanobi, G. A. (2020). Psychological and mental health among isolated hospitalized suspected and confirmed COVID-19 patients, Qatif Central Hospital, Eastern Province, Saudi Arabia: A single-center descriptive study. Open Journal of Internal Medicine, 10(03), 245-255. https://doi.org/10.4236/ojim.2020.103026

Aydemir, Ö., Güvenir, T., Küey, L. and Kültür, S. (1997). Validity and reliability of Turkish version of Hospital Anxiety and Depression Scale. Turkish Journal of Psychiatry, 8(4), 280-287.

Baykara, Z. G. and Eyüboğlu, G. (2020). Nursing care in the COVID-19 pandemic. Gazi Sağlık Bilimleri Dergisi, 9-17.

Bousquet, G., Falgarone, G., Deutsch, D., Derolez, S., Lopez-Sublet, M., Goudot, F. X., ... and Pamoukdjian, F. (2020). ADL-dependency, D-Dimers, LDH and absence of anticoagulation are independently associated with one-month mortality in older inpatients with Covid-19. Aging (Albany NY), 12(12), 11306.

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., and Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. The Lancet, 395, 912-920. https://doi.org/10.1016/S0140-6736(20)30460-8

Burtscher, J., Burtscher, M. and Millet, G. P. (2020). (Indoor) isolation, stress and physical inactivity: Vicious circles accelerated by COVID-19? Scandinavian Journal of Medicine & Science in Sports, 30(8), 1544-1545. https://doi.org/10.1111/sms.13706

Carvalho, F. (2020). Providing holistic care to patients undergoing surgery in the COVID-19 pandemic. Gastrointestinal Nursing, 18(7), 14-15. https://doi.org/10.12968/gasn.2020.18.7.14

Centers for Disease Control and Prevention (2020). Symptoms of Coronavirus. Retrieved November 20, 2020 from https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html

Dantzer, R. (2018). Neuroimmune interactions: From the brain to the immune system and vice versa. Physiological Reviews, 98(1), 477-504. https://doi.org/10.1152/physrev.00039.2016

Diker, J., Etiler, N., Yıldız, M., & Şeref, B. (2001). Association between cognitive status and activities of daily living, life quality and some demographic variables in older than 65. Anatolian Journal of Psychiatry, 2(2), 79-86.

Gümüş, B. A., Keskin, G. and Orgun, F. (2012). Pain and living activities in elderly at a nursing home: An investigation in terms of depression, anxiety and somatization. Turkish Journal of Geriatrics, 15(3), 299-305.

Katz, S., Downs, T. D., Cash, H. R. and Grotz, R. C. (1970). Progress in development of the index of ADL. Gerontologist, 10(1), 20-30. https://doi.org/10.1093/geront/10.4_Part_1.274

Khan, K. S., Mamun, M. A., Griffiths, M. D. and Ullah, I. (2020). The mental health impact of the COVID-19 pandemic across different cohorts. International Journal of Mental Health and Addiction, 1-7. https://doi.org/10.1007/s11469-020-00367-0

Khademi, F., Rassouli, M., Rafiei, F., Moayedi, S., Torres, M., Marzban, N., Haji, E. And Golitaleb, M. (2021). The effect of mandala colouring on anxiety in hospitalized COVID- 19 patients: A randomized controlled clinical trial. International Journal of Mental Health Nursing. 30(1), 1437-1444. https://doi.org/10.1111/inm.12901

Kong, X., Zheng, K., Tang, M., Kong, F., Zhou, J., Diao, L., Wu, S., Jiao, P., Su, T. and Dong, Y. (2020). Prevalence and factors associated with depression and anxiety of hospitalized patients with COVID-19. MedRxiv, 2020.

https://doi.org/10.1101/2020.03.24.20043075.t

Kutlu, R., Özberk, D. I., Gök, H. and Demirbaş, N. (2016). Frequency of anxiety and depression, and affecting factors in inpatients in cardiology intensive care unit. Turkish Journal of Thoracic and Cardiovascular Surgery, 24(4), 672-679. https://doi.org/10.5606/tgkdc.dergisi.2016.13227

Lee, A. M., Wong, J. G., McAlonan, G. M., Cheung, V., Cheung, C., Sham, P. C., Chu, C. M., Wong, P. C., Tsang, K. W. T. and Chua, S. E. (2007). Stress and psychological distress among SARS survivors 1 year after the outbreak. The Canadian Journal of Psychiatry, 52(4), 233-240. https://doi.org/10.1177/070674370705200405

Li, W., Yang, Y., Liu, Z. H., Zhao, Y. J., Zhang, Q., Zhang, L. and Xiang, Y. T. (2020). Progression of mental health services during the COVID-19 outbreak in China. International Journal of Biological Sciences, 16(10), 1732-1738. https://doi.org/10.7150/ijbs.45120

Ma, Y. F., Li, W., Deng, H. B., Wang, L., Wang, Y., Wang, P. H., Bo, H. X., Cao, J., Wang, Y., Zhu, L. Y., Yang, Y., Cheung, T, Ng, C. H., Wu, X. And Xiang, Y. T. (2020). Prevalence of depression and its association with quality of life in clinically stable patients with COVID-19. Journal of Affective Disorders, (275), 145-148. https://doi.org/10.1016/j.jad.2020.06.033

Mak, I. W. C., Chu, C. M., Pan, P. C., Yiu, M. G. C. and Chan, V. L. (2009). Long-term psychiatric morbidities among SARS survivors. General Hospital Psychiatry, 31, 318–326. https://doi.org/10.1016/j.genhosppsych.2009.03.001

Mazza, M. G., De Lorenzo, R., Conte, C., Poletti, S., Vai, B., Bollettini, I., Teresa Melloni, E. M, Furlan, R., Ciceri, F., Rovere-Querini, P, COVID-19 BioB Outpatient Clinic Study group and Benedetti, F. (2020). Anxiety and depression in COVID-19 survivors: Role of inflammatory and clinical predictors. Brain, Behavior, and Immunity, 89, 594-600. https://doi.org/10.1016/j.bbi.2020.07.037

National Institute of Drug Abuse (2020). COVID-19: Potential implications for individuals with substance use disorders. Retrieved November 20, 2020 from https://nida.nih.gov/about-nida/noras-blog/2020/04/covid-19-potential-implications-individuals-substance-use-disorders

Nie, X. D., Wang, Q., Wang, M. N., Zhao, S., Liu, L., Zhu, Y. L. and Chen, H. (2020). Anxiety and depression and its correlates in patients with coronavirus disease 2019 in Wuhan. International Journal of Psychiatry in Clinical Practice, 1-6. https://doi.org/10.1080/13651501.2020.1791345

Organisation for Economic Co-operation and Development (2018). Education indicators in focus. Retrieved November 20, 2020 from https://www.oecd-ilibrary.org/education/how-is-depression-related-to-education_782fc82d-en

Özdin, S. and Özdin, Ş. B. (2020). Levels and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society: The importance of gender. International Journal of Social Psychiatry, 66(5), 504-511. https://doi.org/10.1177/0020764020927051

Özel, A., Yümin, E. T. and Tuğ, T. (2019). Konuk, S. Evaluation of physical activity, kinesiophobia, daily life activities and quality of life in individuals with chronic obstructive pulmonary disease in different phenotypes. Archives of Physiotherapy and Rehabilitation, 2(1), 7-17. https://doi.rg/10.26502/fapr003

Özdin, S. and Özdin, Ş. B. (2020). Levels and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society: The importance of gender. International Journal of Social Psychiatry, 66(5), 504-511.

Patanavanich, R. and Glantz, S. A. (2020). Smoking is associated with COVID-19 progression: A meta-analysis. Nicotine & Tobacco Research, 22(9), 1653-1656. https://doi.org/ 10.1093/ntr/ntaa082

Steardo, L., Steardo Jr, L., Zorec, R. and Verkhratsky, A. (2020). Neuroinfection may contribute to pathophysiology and clinical manifestations of COVID- 19. Acta Physiologica, 11, e13473.

Quidley-Rodriguez, N. and de Tantillo, L. (2020) Preventing COVID-19 Infection in Mental Health Units: Recommendations for Best Practices. Issues in Mental Health Nursing 41(11), 969-975.

Wei, N., Huang, B. C., Lu, S. J., Hu, J. B., Zhou, X. Y., Hu, C. C., Chen, J. K., Huang, J. W., LI S. G., Wang, Z., Wang, D. D., XU, Y. and Hu, S. H. (2020). Efficacy of internet-based integrated intervention on depression and anxiety symptoms in patients with COVID-19. Journal of Zhejiang University Science B, 21(5), 400-404. https://doi.org/10.1631/jzus.B2010013

Wu, K. K., Chan, S. K. and Ma, T. M. (2005). Posttraumaticstress, anxiety, anddepression in survivors of severe acute respiratory syndrome (SARS). Journal of Traumatic Stress,18(1), 39–42. https://doi.org/10.1002/jts.20004

Xiang, Y. T., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T. and Ng, C. H. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. The Lancet Psychiatry, 7(3), 228-229. https://doi.org/10.1016/S2215-0366(20)30046-8

Yava, A., Tosun, N., Ünver, V. and Çiçek, H. (2011). Patient and nurse perceptions of stressors in the intensive care unit. Stress Health, 27(2), e36-e47. https://doi.org/ 10.1002/smi.1333

Yıldırım, M. and Güler, A. (2020). Positivity explains how COVID-19 perceived risk increases death distress and reduces happiness. Personality and Individual Differences, 168, 110347. https://doi.org/10.1016/j.paid.2020.110347

Zhao, Q., Hu, C., Feng, R. and Yang, Y. (2020). Investigation of the mental health of patients with novel coronavirus pneumonia. Chinese Journal of Neurology, 53. https://doi.org/10.3760/cma.j.cn113694-20200220-00102

Zigmond, A. S. and Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. Acta Psychiatrica Scandinavica, 67(6), 361-370.

Zhang, J., Yang, Z., Wang, X., Li, J., Dong, L., Wang, F., Li, Y., Wei, R. and Zhang, J. (2020). The relationship between resilience, anxiety and depression among patients with mild symptoms of COVID- 19 in China: A cross- sectional study. Journal of Clinical Nursing, 29(21-22), 4020-4029. https://doi.org/10.1111/jocn.15425