Arch Health Sci Res. 2023;10(1):60-65
DOI: 10.5152/ArcHealthSciRes.2023.22103

Original Article

The Effects of Post-Coronavirus Disease-2019 Symptoms and Functional States of Patients on Quality of Life

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Cite this article as: Bahçecioğlu Turan G, Özer Z, Teke N. The effects of post-coronavirus disease-2019 symptoms and functional states of patients on quality of life. *Arch Health Sci Res.* 2023;10(1):60-65.

ABSTRACT

Objective: This study was conducted to examine the effects of post-coronavirus disease 2019 symptoms and functional states of patients on the quality of life.

Methods: This descriptive and cross-sectional study was conducted with 1646 patients in the study between September 1 and October 31, 2021. The data were collected online by sending Patient Information Form, Post-Coronavirus Disease 2019 Symptom Form, Post-Coronavirus Disease 2019 Functional Status Scale, and the reliability of the short form 12 (SF-12) Quality of Life Scale.

Results: The symptoms most experienced by the patients in the study were fever (84.7%), headache (83.7%), muscle or joint pain (83.7%), fatigue (83.5%), and cough (82.8%). In terms of coronavirus disease 2019 functional states of the participants, it was found that 23.1% responded as "Limitations in my daily life and occasional need to avoid or decrease ordinary activities," 22.1% responded as "Limitations in my daily life and cannot perform any of the usual activities." SF-12 physical sub-dimension mean score was found as 38.1 ± 10.38, while SF-12 mental sub-dimension mean score was found as 42.28 ± 10.38. It was found that the variable of "no limitations in daily life" had a positive effect on SF-12 physical and mental factors, while the variables of age, having limitations in daily life and not being able to perform usual activities, being dependent on someone else due to symptoms, cough, decrease in appetite, drowsiness and dizziness while standing, sleep problems, fever, body rash, and hair fall has a negative and significant effect on SF-12 physical and mental factors.

Conclusion: Patients experience limitations in functional states and have a low quality of life in physical and mental dimensions due to post-coronavirus disease 2019 restrictions in daily life. Having limitations in daily life and not being able to perform usual activities, depending on someone else due to symptoms, and ongoing symptoms (cough, decreased appetite, drowsiness and dizziness while standing, sleep problems, fever, body rash, and hair loss) affect the quality of life negatively.

Keywords: Functional state, post-COVID-19, symptom, quality of life

Introduction

Since the outbreak of the coronavirus disease 2019 (COVID-19) pandemic as of March 11, 2020, it has been reported that approximately 500 million people have got sick and 6 million people have died due to coronavirus.[1] It is estimated that a total of 15 million people caught the disease and 98,514 people died so far in Turkey.[2]

Since the emergence of COVID-19, the issues that have attracted the most attention are taking under control the transmission of severe acute respiratory syndrome coronavirus 2, which is responsible for the emergence of the disease, and examining the increase in patients with critical condition in acute care environments.[3] However, now the focus is on post-acute care and symptoms (such as shortness of breath, cough, fatigue, and arthralgia) in the survivors of COVID-19.[4,5] Some classifications have been made to describe these symptoms experienced by post-COVID-19 survivors. Classifications are as follows: Transition stage: symptoms potentially associated with acute COVID-19; symptoms up to 4-5 weeks; Stage 1: post-COVID acute symptoms: symptoms from week 5 to week 12; Stage 2: long-term post-COVID symptoms: symptoms from week 12 to week 24; Stage 3: permanent post-COVID acute symptoms: symptoms lasting longer than 24 weeks.[6] Most common post-COVID symptoms have

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Received: August 25, 2022
Accepted: November 11, 2022

been reported as fatigue, shortness of breath, cough, arthralgia, and chest pain.[7] In a study conducted in Italy, of the 143 patients hospitalized due to COVID-19, at least 1 symptom continued with a mean of 60 days after discharge in 83% of the patients.[8] In another study, it was reported that of the 669 Swiss patients (mostly out-patients), 32% continued to show at least 1 symptom with a mean of 43 days after discharge.[9] In a systemic review and meta-analysis, the most common 5 symptoms in the long term were found as fatigue (58%), headache (44%), attention disorder (27%), hair loss (25%), and shortness of breath (24%). A large number of studies conducted have reported various symptoms before and after COVID-19 infection.[6,10-12] In different studies, it has been found that except for individuals with comorbidities, post-COVID symptoms are at a minimum level for approximately 1-6 months after diagnosis.[13-15] Coronavirus disease 2019 is expected to have a basic effect on physical, mental, cognitive, and public health state as in cases with mild symptoms.[16] Therefore, it is essential to take basic measures by examining the progression of symptoms and the functional states of patients affected by these symptoms.[16] At the same time, an understanding emerges that COVID-19 will cause threats to patient's quality of life, mental health, and life expectancy.[17]

Quality of life is defined as an individual's feelings of well-being in terms of satisfaction with important aspects of life.[15] Individual preferences in describing purpose, choices, and expectations in life help to determine the quality of life.[15] A large number of studies conducted show that patients' quality of life is affected after COVID-19.[17-19] Since COVID-19 is a new disease, its effect on the quality of life is still unknown.[20]

Although there are limited numbers of articles in the literature examining post-COVID-19 symptoms, functional state, and quality of life in patients,[4,15,20,21] no studies were found discussing these 3 important issues together. For this reason, the present study aims to fill a gap in the literature by examining the effects of post-COVID-19 symptoms and functional states on the quality of life. It is also thought that the present study will make significant contributions to nursing and related literature.

Research Questions

1. What are the post-COVID-19 symptoms of patients?
2. How are the post-COVID-19 functions of patients?
3. How is the post-COVID-19 life quality of patients?
4. What are the effects of post-COVID-19 symptoms and functional states of patients on the quality of life?

Methods

Type of Study

This descriptive and cross-sectional study was conducted to examine the effects of post-COVID-19 symptoms and functional states of patients on the quality of life.

Time and Sample of the Study

The study was conducted in 2 family health centers in Istanbul between September 1 and October 31, 2021. The population of the study consisted of 2351 patients who were registered with the family health center and who had been infected with COVID-19. When patients who did not meet the inclusion criteria (being a Turkish citizen aged 18 and older, being literate, having negative PCR test result at least for a month) were excluded, 2001 patients were left on the list. Since 254 of these patients did not agree to participate in the study and 66 patients could not be reached on the phone (through WhatsApp), they were excluded from the list. The study was finalized with 1681 patients who filled in the online survey. However, in data assessment, 35 forms which met the exclusion criteria (responding in less than 1 minute or more than 10 minutes for survey quality) were excluded. As a result, the online survey form was answered by 1646 (70%) patients (Figure). Power analysis of the study was calculated in GPower 3.1 program. According to the result of this study, a 0.03 effect size was obtained with 99% power and a 0.05 error margin.

Data Collection

The survey form consisting of the Patient Information Form, Post-COVID-19 Symptom Form, Post-Covid-19 Functional Status Scale (PCFS), and SF-12 Quality of Life Scale was prepared in the GoogleDocs program. The survey was developed and reviewed by the research team in line with the literature, and a pilot study was conducted before the surveys were distributed. Patients aged 18 and older in the family health center who had COVID-19 infection and who were followed were sent a survey form (WhatsApp) and asked to fill it in. A total of 1681 patients filled in the online surveys. It takes approximately 5-10 minutes to fill in the survey. Thirty-five forms which were responded in less than 1 minute or more than 10 minutes[22] were excluded for survey quality. Finally, 1646 participants were recruited for this survey.

Data Collection Tools

The data were collected online by the researchers by sending the Patient Information Form, Post-COVID-19 Symptom Form, PCFS, and SF-12 Quality of Life Scale.

Patient Information Form

This form was prepared by the researcher to describe the sociodemographic characteristics and COVID-19-related information of the patients included in the study. The form includes a total of 11 questions such as gender, age, marital status, educational status, profession, income level, chronic disease, smoking, alcohol use, exercise, COVID-19 discharge time, and the place of follow-up due to COVID-19.

Post-Coronavirus Disease 2019 Symptom Form

This form prepared by the researchers through literature review[3,23,24] includes symptoms such as fever, shortness of breath, cough, tachycardia, chest or stomach pain, headache, muscle or joint pain, numbness or tingling in the feet, fatigue, drowsiness, dizziness, sleep problems, body rash, changes in smell or taste, dry mouth, decreased appetite, diarrhea, difficulty in concentrating, mood changes, memory problems, and hair loss. There are a total of 20 symptoms.

Post-Coronavirus Disease 2019 Functional Status Scale

The scale, which was developed by Klok et al.[4] can be used to evaluate post-discharge functional state and post-COVID-19 long-term functional results.[4] Turkish validity and reliability study of the scale was conducted by Kütükcü et al.[21] The scale has 5 items. Post-Covid-19 Functional Status Scale classifies functional state limitation as grade 0 (no functional limitation), grade 1 (negligible functional limitation), grade 2 (mild functional limitation), grade 3 (moderate functional limitation), grade 4 (severe functional limitation), and grade 5 (death). Cronbach's alpha value was found as 0.82 in the original scale.[21] Cronbach's alpha coefficient was found as 0.75 in the present study.

SF-12 Quality of Life Scale

In this study, SF-12 Quality of Life Scale, which was adapted in a way individuals can easily understand, was used to determine the quality of life. SF-12 is a scale that evaluates the quality of life for the last 4 weeks without focusing on a specific age and disease group. Turkish validity and reliability study of the scale was conducted by Soylu et al.[25] Similar to SF-36, SF-12 consists of 8 subscales and 12 items as physical functionality (2 items), physical role (2 items), bodily pain (1 item), general health (1 item), energy (1 item), social functionality (1 item), emotional role (2 items), and mental health (2 items). While the items related

to the physical and emotional role are answered as yes or no, other items have Likert-type options ranging between 3 and 6. While Physical Component Summary (PCS-12) score is obtained from general health, physical functionality, physical role, and bodily pain subscales, Mental Component Summary (MCS-12) score is obtained from social functionality, emotional role, mental health, and energy subscales. The raw scores obtained are converted into 100 points as in SF-36. Both PCS-12 and MCS-12 score vary between 0 and 100 and a higher score represents better health.[25] In the original scale, Cronbach's alpha values were found as 0.73 for PCS-12 and 0.72 for MCS-12.[25] In the present study, Cronbach's alpha values were found as 0.70 for PCS-12 and 0.71 for MCS-12.

Data Evaluation

Statistical software package program Statistical Package for the Social Sciences 22 was used in the analysis of the data obtained from the study. In data analysis, number, percentage, mean, and standard deviation were used in the evaluation of information obtained from Patient Information Form, Post-COVID-19 Symptom Form, PCFS, and SF-12. Regression analysis is a statistical method which is used to estimate the relationship between the dependent variable and the independent variable. It focuses on how the dependent variable is affected by the changes in independent variables.[26] Multiple linear regression analysis was conducted to determine the effects of post-COVID-19 symptoms and functional state (independent variables) on quality of life (dependent variable). The results obtained were evaluated at a 95% confidence interval and at a 5% significance level.

Ethical Principles of the Study

Permission for the study was obtained from the Ethics Committee of a Foundation Istanbul Sabahattin Zaim University (27.08.2021 dated and 2021/08 numbered). Permission was obtained from the authors for the scales used. Informed consent was obtained from the participants electronically prior to the study. This study was conducted in accordance with the principles of the Helsinki Declaration of Human Rights. Volunteering participants were included in the study and personal identity information was kept confidential.

Table 1. Sociodemographic Characteristics and COVID-19-Related Information of the Participants (n = 1646)

		Mean ± SD	Minimum-Maximum (Median)
Age		44.24 ± 18.53	18-90 (43)
COVID-19 discharge time (months)		1.48 ± 1.78	1-16 (1)
		n	%
Gender	Female	979	59.5
	Male	667	40.5
Educational status	Illiterate	136	8.3
	Primary education	168	10.2
	Secondary education	240	14.6
	High school	561	34.1
	Undergraduate and higher	541	32.9
Professional status	Unemployed	110	8.3
	Worker	364	22.1
	Housewife	335	20.4
	Officer	236	14.3
	Retired	203	12.3
	Self-employed	183	11.1
	Student	188	11.4
Economic status	Income < expense	741	45.0
	Income = expense	666	40.5
	Income > expense	239	14.5
Smoking status	Yes	692	42.0
	No	719	43.7
	Used to but gave up	142	8.6
	Gave up after COVID-19	93	5.7
Alcohol use status	Yes	317	19.3
	No	1064	64.6
	Used to but gave up	140	8.5
	Gave up after COVID-19	125	7.6
Regular exercise status	Yes	221	13.4
	No	1125	68.4
	Can't after COVID-19	300	18.2
Presence of chronic disease	Yes	519	31.5
	No	1127	68.5
The place where COVID-19 was followed	Home	1094	66.5
	Clinic	403	24.5
	Intensive care	149	9.1

COVID-19, coronavirus disease 2019; SD, standard deviation.

Results

The mean age of the participants was 44.24 ± 18.53, the mean time since COVID-19 infection was 1.48±1.78 months, 59.5% of the participants were female, 34.1% were high school graduates, 22.1% were workers, 45% had income lower than expense, 42% were smoking, and 19.3% were using alcohol. Of the participants, 13.4% were exercising regularly, 31.5% had chronic disease, and 66.5% had been followed for COVID-19 at home (Table 1).

The symptoms most experienced by the patients in the study were fever (84.7%), headache (83.7%), muscle or joint pain (83.7%), fatigue (83.5%), changes in smell or taste (78.4%), and shortness of breath (75.3%), while the least experienced were body rash (37.6%), hair loss (41.5%), memory problems (41.9%), and numbness or tingling in the feet (49.0%) (Table 2).

In terms of COVID-19 functional states of the participants, it was found that 26.4% responded as "No limitations in my daily life," 19.7%

Table 2. Post-COVID-19 Infection Symptoms (n = 1646)

Variables	n	%
Fever	1394	84.7
Shortness of breath	1240	75.3
Cough	1363	82.8
Tachycardia	1041	63.2
Chest or stomach pain	1153	70.0
Headache	1377	83.7
Muscle or joint pain	1378	83.7
Numbness or tingling in the feet	806	49.0
Fatigue	1375	83.5
Drowsiness and dizziness while standing	833	50.6
Sleep problems	1010	61.4
Body rash	619	37.6
Changes in smell or taste	1290	78.4
Dry mouth	973	59.1
Decreased appetite	1149	69.8
Diarrhea	886	53.8
Difficulty in concentrating	826	50.2
Mood changes	847	51.5
Memory problems	689	41.9
Hair loss	683	41.5

Table 3. Mean Post-COVID-19 Functional State Score and SF-12 Quality of Life Scale Measurements (n = 1646)

		n	%
Post-COVID-19 functional state	No limitations in my daily life (0)	435	26.4
	Negligible limitations (still permanent symptoms) (1)	325	19.7
	Limitations in my daily life and occasional need to avoid or decrease ordinary activities (2)	380	23.1
	Limitations in my daily life and cannot perform any of the usual activities (3)	363	22.1
	Severe limitations in daily life. Dependent on someone else during symptoms (4)	143	8.7
		Mean ± SD	Minimum-Maximum (Median)
SF-12 Physical sub-dimension		38.1 ± 10.38	18.09-65.49 (37.73)
SF-12 Mental sub-dimension		42.28 ± 10.38	22.27-69.67 (41.91)

COVID-19, coronavirus disease 2019; SD, standard deviation.

responded as "Negligible limitations (still permanent symptoms)," 23.1% responded as "Limitations in my daily life and occasional need to avoid or decrease ordinary activities," 22.1% responded as "Limitations in my daily life and cannot perform any of the usual activities," and 8.7% answered as "Severe limitations in daily life. Dependent on someone else during symptoms" (Table 3). The mean physical SF-12 subscale was 38.1 ± 10.38, while the mean mental SF-12 was found as 42.28 ± 10.38.

Multiple linear regression analysis conducted to find out the effects of post-COVID-19 symptoms and functional state on quality of life was found to be statistically significant (F = 51.793, $P < .001$). Independent variables in the model explained 44.7% of the total variance in quality of life. When the score in "No limitations in daily life" increased by 1 point, quality of life scores increased by 8.194 unit. When age increased by 1 unit, quality of life increased by 0.04 unit; when the scores of "cannot perform any of the usual activities" and "being dependent on someone else due to symptoms" increased by 1 unit, quality of life increased by 3.249 and 7.478 units, respectively; and when cough, decrease in appetite, drowsiness and dizziness while standing, sleep problems, fever, body rash, and hair loss scores increased by 1 unit, quality of life decreased by 2.871, 1.117, 1.332, 3.723, 2.136, 2.137, 1.386 points, respectively (Table 4).

Discussion

After COVID-19, patients show low physical functionality and low performance in daily life activities. Even a few months after infection, patients report deterioration in quality of life and being dependent on others for personal care and daily life activities in addition to ongoing symptoms such as fatigue, dyspnea, and muscle weakness.[27] This study was conducted to examine the post-COVID-19 functional status of patients and the effect of symptoms experienced on quality of life.

The mechanism behind these long-term symptoms in post-COVID-19 patients is not well understood. Doykov et al[28] found that upregulation of inflammatory markers (cytokines) and mitochondrial proteins (peroxireoxin 3 and carbonyl phosphate synthase) responded to mitochondrial stress in COVID-19 patients 40-60 days after infection. Cytokine storm and central nervous system (CNS) entry combination of the virus may cause neuroinflammation, which can lead to long-term general symptoms such as fatigue, headache, muscle pain, and shortness of breath.[29] Sleep disorders occur when patients have higher levels of stress and psychological problems prevent them from relaxing.[30] In addition, upper respiratory tract infections increase coughing reflex sensitivity. This cough sensitivity can stay for months after a viral infection.[31] In the study, the symptoms most experienced by patients were found as fever, headache, muscle or joint pain, fatigue, cough, changes in smell or taste, and shortness of breath. Tabirta et al[32] reported the most common post-COVID-19 symptoms as fatigue, dyspnea, muscle pain, and paraesthesia. In a different study, it was reported that individuals mostly experienced shortness of breath, weight loss, sleep disorders, and anxiety (Armange et al, 2021). In a systematic review, the most common symptoms were reported as shortness of breath, fatigue or weariness and sleep disorders, cough, depression/anxiety, anosmia or loss of smell, loss of taste, and atypical chest pain[33]. In a systematic review examining the effects of COVID-19, the most common 5 symptoms were fatigue, headache, attention disorder, hair loss, and shortness of breath. It has also been reported that persistence, sequelae, and other medical complications that last between weeks and months will be experienced after initial recovery from COVID-19.[34] Most reported post-COVID-19 symptoms are persistent dyspnea, general neurological deterioration, smell and taste problems, chronic fatigue, abnormal lung functions, joint pain, and chest pain. It has been stated that these symptoms may last for weeks or months or repeat following the initial recovery.[35] In another study, it has been reported that up to 2 months after the onset of symptoms, two-thirds of adults with non-critical COVID-19 have complaints, especially anosmia/ageusia, dyspnea or asthenia, and whatever the initial clinic state is, COVID-19 patients should have a long-term medical follow-up.[36] As a result, studies conducted were found to be similar to the results of our study and

Table 4. Multiple Linear Regression Analysis Results for Predicting SF-12 Physical and Mental Sub-dimensions with Independent Variables

				Multivariable		
Model	**Variables**	***B***	**Standard Error**	β	***t***	***P***
1	Age	−0.04	0.011	−0.071	−3.503	.001*
	Functional state-0	8.194	0.585	0.348	14	.001*
	Functional state-3	−3.249	0.579	−0.130	−5.614	.001*
	Functional state-4	−7.478	0.791	−0.204	−9.454	.001*
	Cough	−2.871	0.572	−0.104	−5.02	.001*
	Decreased appetite	−1.117	0.497	−0.049	−2.249	.001*
	Drowsiness and dizziness while standing	−1.332	0.541	−0.064	−2.46	.001*
	Sleep problems	−3.723	0.518	−0.175	−7.184	.001*
	Fever	−2.136	0.596	−0.074	−3.584	.001*
	Body rash	2.137	0.521	−0.100	4.099	.001*
	Hair loss	1.386	0.501	−0.066	2.768	.001*

F = 51.793, $R = 0.668$, $R^2 = 0.447$, *$P < .05$.

studies conducted confirm the highness of the prevalence of persistent symptoms even after COVID-19. Physiopathological changes that occur in the body due to COVID-19 may cause different symptoms.

In this study, 26.4% of the participants stated that there were no limitations about their COVID-19 functional states (PCFS grade 0), 19.7% reported insignificant limitations (grade 0), and 53.9% stated that they had limitations in their functional states due to limitations in daily life (grades 2-4). In a study conducted by Pant et al.[37] during post-COVID-19 recovery, while more than half of the patients (56.6%) reported no functional limitation (grade 0), 43.4% of the patients were found to have a functional limitation (grades 1-4) prevalence to a certain degree.[37] In a study conducted by Tabirta et al.[32] insignificant (grade 1) functional limitation was reported in 41.37% of patients, mild (grade 2) functional limitation was reported in 50%, and moderate (grade 3) functional limitation was reported in 8.63% according to PCFS. In a different study, an insignificant limitation (grade 1) was found in most of the participants (63.1%) after recovering from COVID-19, while 17.1% were found to have functional limitations due to daily life (grades 2-4).[16] In another study, an insignificant limitation (grade 1) was found in 30.6% of the patients after recovering from COVID-19 and 34.1% were reported to have functional limitations due to daily life (grades 2-4).[38] In a study conducted by Carfì et al.[8] it was stated that almost 50% of the infected individuals had difficulty returning to normal activity levels. Conducting studies in different regions may cause differences in the results. Symptoms due to COVID-19 infection cause certain degrees of limitations in all functions of individuals including lifestyle, sports, and social activities.[39]

In the present study, participants' quality of life was found to be low in physical and mental dimension. In their study, Weerahandi et al[40] reported that quality of life was low in patients. González et al[41] also reported that physical and mental health scores of patients were low. Similarly, in the studies by Chen et al.[17] Giurgi-Oncu et al.[42] and Arnold et al.[43] quality of life was found to be low in physical and mental dimensions. In another study examining the quality of life, patients were found to have low EuroQol scores.[8] In a meta-analysis by Malik et al.[44] low quality of life was reported in patients after COVID-19. As a result, studies conducted found similar results to our study. This result shows that most of the post-COVID-19 recovery patients have a low quality of life that creates difficulties for healthcare professionals.

In this study, it was found that having limitations in daily life and not being able to conduct all of the usual activities, being dependent on someone else due to symptoms, and ongoing symptoms (cough, decreased appetite, drowsiness and dizziness while standing, sleep problems, fever, body rash, and hair loss) affect quality of life negatively. In individuals with COVID-19, long-term persistent symptoms and decreased functional capacity have a negative effect on the quality of life.[42] Optimal management of patients with persistent symptoms after the acute phase of COVID-19 is unknown. All functional activities including lifestyle, sports, and social activities have a negative effect on individual's quality of life.[39] While millions of people suffer from COVID-19 infection, in addition to persistent symptoms and deterioration in functional capacity, long-term quarantine and excessive doubt during COVID-19 disease worsen the quality of life in patients.[16] In a meta-analysis, it was reported that COVID-19-related symptoms and functional loss of COVID-19 survivors during the first months after infection cause deterioration in the quality of life. In a different study conducted, it was found that physical health and social life problems, decreased working capacity and daily activities, and psycho-emotional disorders worsened quality of life.[45] Similarly, a large number of studies reported that post-COVID-19 symptoms decreased quality of life.[46-48] COVID-19 may cause long-term persistent respiratory function disorder, muscle weakness, pain, fatigue, depression, anxiety, professional problems, and various degrees of low quality of life.[32] Coronavirus disease 2019 disrupts multiple organ systems of patients such as pulmonary, cardiovascular, neurological, hematopoietic, and endocrine, their physical health and psychiatric states.[19] The study result was found to be in line with the literature. This may show that post-COVID-19 functional states of patients and symptoms experienced affect their quality of life negatively.

This study has a few limitations. First of all, Post-COVID-19 Symptom Form was applied without expert views. Second, the data were collected through self-report scales; therefore, the possibility of widespread method biases should be considered. Third, the fact that only individuals who were reached online participated in the study may have caused sample bias. In addition, possible differences due to the effect of the environment in which the surveys were filled in or the device could not be found. Fourth, the reliability of data is limited to the accuracy of responses given by the patients in the study. Fifth, follow-up time was limited for patients. Sixth, pre-disease data regarding the functional and quality of life states of patients included in the study were not available. Since basal data results are not known, the results may not be associated with COVID-19 directly. Finally, the cross-sectional nature of data prevents from making causal inferences.

Our study provides a database for the functional state, ongoing symptoms, and life quality of post-COVID-19 patients. According to the results of the study, patients experience limitations in functional states and have a low quality of life in physical and mental dimensions due to restrictions in daily life. Having limitations in daily life and not being able to perform usual activities, depending on someone else due to symptoms, and ongoing symptoms (cough, decreased appetite, drowsiness and dizziness while standing, sleep problems, fever, body rash and hair loss) affect the quality of life negatively. Nurses can help develop sustainable and effective strategies, especially by early detection of individuals in the risk group, by taking precautions against these risks and discussing health states as a whole. Long-term follow-up with a multidisciplinary team is required to recognize the long-term sequelae of COVID-19 and to help patients during this difficult recovery process. It is recommended to initiate a comprehensive program to help COVID-19 patients improve their basic functions. Coronavirus disease 2019 significantly depletes the health status of patients both mentally and physically. Therefore, it is recommended for policymakers and the government to develop comprehensive strategies to reduce the psychological and physical health problems of COVID-19 patients.

Data Availability: The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Istanbul Sabahattin Zaim University (Date: August 27, 2021, Number: 2021/08).

Informed Consent: Online informed consent was obtained from patients who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – G.B.T., Z.Ö., N.T.; Design – G.B.T., Z.Ö., N.T.; Supervision – G.B.T., Z.Ö.; Resources – Z.Ö., N.T.; Data Collection and/or Processing – G.B.T., Z.Ö.; Analysis and/or Interpretation – G.B.T., Z.Ö.; Literature Search – G.B.T., Z.Ö., N.T.; Writing Manuscript – G.B.T., Z.Ö., N.T.; Critical Review – G.B.T., Z.Ö., N.T.

Declaration of Interests: The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding: The authors received no financial support for the research, authorship, and/or publication of this article.

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