Original Article

Predictors of self-care management in patients with chronic obstructive pulmonary disease

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Abstract:

BACKGROUND AND AIM: Patients with chronic obstructive pulmonary disease (COPD) are potentially more susceptible to severe outcomes of Coronavirus Disease 2019 (COVID-19). Therefore, it is crucial for individuals with COPD to maintain their self-care management practices during the pandemic. This research aimed to determine the predictors of self-care management in patients with COPD during the pandemic.

METHODS: A cross-sectional study was conducted involving 173 hospitalized COPD patients at a hospital in Istanbul, Türkiye. Data were collected using a Sociodemographic Characteristics and Illness Data Form, the Self-Care Management Process in Chronic Illness (SCMP-G) scale, and the COPD Assessment Test (CAT).

RESULTS: The mean age of the individuals with COPD was 64.31±13.38 years; 59% were male. The mean SCMP-G total score was 116±9.52. The patient's age, status of applying for a health check-up during the pandemic, and family type were significant predictors of self-guarding ($p<0.001$). The CAT score, the patient's status of applying for a health check-up during the pandemic, and the existence of a chronic illness other than COPD were significant predictors of social guarding ($p<0.001$). The CAT score and the patient's status of applying for a health check-up during the pandemic were significant predictors of self-care management ($p<0.001$). CAT mean scores were significantly higher among those who did not go for a check-up during the pandemic ($p<0.05$).

CONCLUSIONS: The self-care management score was moderate in this sample of patients with COPD. Patients with COPD who went to regular health check-ups during the pandemic had better self-care management and disease outcomes.

Keywords:

Chronic obstructive pulmonary disease, COVID-19 pandemic, self-care management

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Introduction

Chronic obstructive pulmonary disease (COPD) is a significant cause of morbidity and mortality worldwide, representing an increasing economic and social burden.[1–3] According to World Health Organization (WHO) data, COPD was responsible for 3.23 million deaths globally in 2019, ranking third among causes of mortality.[4] Individuals with COPD suffer from multiple symptoms, which collectively adversely affect their health, activities, and quality of life.[5,6] It is reported that severe pneumonia, hypoxemia, the need for intensive care, intubation, and higher incidences of death are observed in patients with COPD who develop Coronavirus Disease 2019 (COVID-19).[7,8]

Extensive and complex self-care management is a primary element of effective COPD management.[2] High-quality self-care improves the quality of life for individuals with COPD, reduces hospitalizations, and alleviates symptoms such as dyspnea, and lowers the risk of exacerbations and mortality.[9,10] Treatment and self-care management in COPD primarily involve developing awareness and managing symptoms, maintaining a medication regimen, following a healthy diet, coping with shortness of breath, and smoking cessation.[1,2] Additionally, individuals with COPD need to engage in regular physical exercise and receive vaccinations against pneumonia, the flu, and COVID-19.[1,4]

The aim of self-care management interventions for individuals with COPD is to ensure that patients develop the skills to effectively manage their illness, as well as to motivate and support them in making positive changes in their self-care behaviors.[11] It is crucial to identify factors associated with the self-care management of patients with COPD before planning programs to improve self-care management for this high-risk group during pandemics. In this context, our study was conducted to determine the factors associated with the self-care management of patients with COPD during the COVID-19 pandemic. This study aimed to investigate the following questions:

During the COVID-19 pandemic:

- How was the self-care management of illness among patients with COPD?

- Is there a relationship between the sociodemographic and disease characteristics of patients with COPD and their illness self-care management and its severity?

- What are the factors associated with the illness self-care management of patients with COPD?

Materials and Methods

Design and sample

The cross-sectional study was conducted from September 2020 to February 2021 with COPD inpatients at the Pulmonary Diseases departments of three state hospitals in Istanbul, Turkey. The sample size was calculated using the G*Power 3.1.9.4 program, applying the independent sample t-test. It was determined that the minimum sample size should be 172 people with 90% power and a medium effect at a 95% confidence interval (Type I error (α)=0.05, Type II error (β)=0.10, Effect size (d)=0.50). The study was carried out with 173 individuals with COPD who met the study inclusion criteria. The inclusion criteria were: having COPD, admission due to COPD exacerbation, being aged 18 or over, ability to understand and respond to the questionnaires, and consenting to participate in the research. Those who did not meet the criteria were excluded from the study.

Data collection tools

Participant information form
This form consisted of a total of 20 questions about the participants' descriptive characteristics (age, gender, education, employment, economic status, family type), their COPD disease history, treatment processes, hospital admissions, and COVID-19 disease histories.

The Self-Care Management Process in Chronic Illness (SCMP-G)
SCMP-G was developed by Jones in 1986 and adapted to Turkish by Hançerlioğlu and Aykar in 2018 (Cronbach's alpha for SCMP-G total: 0.85; self-guarding: 0.83; social guarding: 0.68).[12] This scale is a 5-point Likert-type instrument, with scoring based on 5 = I definitely agree and 1 = I do not agree at all. Questions 3, 15, 19, and 28 on the scale are presented as negative questions and are scored inversely during the evaluation. A higher score on this scale indicates a greater degree of self-care management of the illness.[12]

COPD Assessment test (CAT)
The CAT is a scale for assessing COPD and has been validated and found reliable in many languages, with widespread global use. Yorgancıoğlu et al.[13] adapted the CAT

to Turkish in 2012, achieving a Cronbach's alpha of 0.91. The CAT's eight statements focus on systemic symptoms. Scores range from 0 to 5, with scores of 30 and above indicating a very high burden; scores between 20 and 30 suggest a high burden; 10 to 20, a medium burden; and below 10, a low burden.[13]

Statistical analysis

The data were analyzed using Statistical Package for the Social Sciences (SPSS) 25.0 (IBM SPSS Statistics for Windows, Armonk, NY: IBM Corp.). The data were tested for skewness/kurtosis to detect whether they were normally distributed, and a normal distribution was confirmed. The data were analyzed using descriptive statistics (frequency, percentage, mean, standard deviation), Student's t-test, one-way Analysis of Variance (ANOVA), post hoc Tukey's test, post hoc Tamhane's T2 test, and multiple regression analysis. Multiple linear regression analysis was performed to determine which factors could be associated with the self-care management of illness. The variables significantly associated with SCMP-G in the bivariate analyses were included in the multiple regression analysis. Significance was assessed as $p < 0.05$.

Ethics

This study was conducted in accordance with the Declaration of Helsinki. Approvals for conducting the study were obtained from the Ethics Committee of Bezmialem Vakıf University (Date: 18.06.2020, Decision number: 7059), the Ministry of Health, and hospital administrations. Prior to the start of data collection, verbal and written consent from the participating patients was received.

Results

The mean age of the patients with COPD participating in the study was 64.31 ± 13.38; 59% were male. Other sociodemographic characteristics and illness-related features are presented in Table 1. Table 2 displays the mean scores on the CAT and SCMP-G scales.

It was found that participants aged 65 or below had significantly higher mean scores on the Self-Guarding subscale compared to those above the age of 65 ($p < 0.05$). Conversely, this older group had significantly lower mean scores on the Social Guarding subscale ($p < 0.01$). Unemployed participants scored significantly higher on the Social Guarding subscale than employed participants ($p < 0.05$). Participants from nuclear families

had significantly higher scores on the Self-Guarding subscale compared to those from extended families ($p < 0.001$) (Table 3).

The mean score of participants who had a chronic illness in addition to COPD on the Social Guarding subscale and the SCMP-G overall scale was significantly higher ($p < 0.001$ and $p < 0.05$, respectively). The mean scores of participants who went for their check-ups during the pandemic were significantly higher on the Self-Guarding subscale, the Social Guarding subscale, and the SCMP-G overall scale ($p < 0.001$, $p < 0.05$, and $p < 0.01$, respectively). The mean score on the Social Guarding subscale of those who did not contract COVID-19 was significantly higher than that of those who did have COVID-19 ($p < 0.05$). The mean score on the Self-Guarding subscale of those who engaged in physical activity was significantly higher ($p < 0.05$), and the mean score on the Social Guarding subscale was significantly lower ($p < 0.01$) (Table 4).

CAT mean scores were significantly higher among those aged 65 and older ($p < 0.001$), the unemployed ($p < 0.001$), and those in an extended or broken family ($p < 0.05$) compared to others in the study ($p < 0.001$) (Table 2). CAT mean scores were significantly higher among those who had another chronic disease besides COPD ($p < 0.001$), those who did not go for a check-up ($p < 0.05$), those who did not contract COVID-19 ($p < 0.05$), and those who did not engage in physical activity ($p < 0.001$) compared to others in the study (Tables 3, 4).

In the multiple regression analysis, a significant relationship was found between the SCMP-G Self-Guarding subscale of the patients with COPD and the participant's age ($\beta = -0.210$, $p < 0.01$), going for a check-up ($\beta = 0.192$, $p < 0.01$), and family type ($\beta = 0.184$, $p < 0.05$). These variables explain 15.2% of the total variance in the Self-Guarding subscale ($R^2 = 0.152$, $p < 0.001$). It was determined that age, going for a health check-up regularly during the pandemic, and family type were significant predictors of Self-Guarding (Table 5).

A significant relationship was identified between the SCMP-G Social Guarding subscale scores in patients with COPD and several factors: the participants' CAT scores ($\beta = 0.337$, $p < 0.001$), undergoing health check-ups ($\beta = 0.216$, $p < 0.01$), and the presence of chronic diseases in addition to COPD ($\beta = 0.150$, $p < 0.05$). These variables

Table 1: Sociodemographic and disease-related characteristics of patients with COPD

Variables	Median	Mean±SD
Age	62	64.31±13.38 (27–93)
Time from diagnosis (years)	10	10.33±6.96 (1–40)
No. of hospitalizations due to COPD	3	3.92±2.66 (1–12)
No. of admittances to the ER due to COPD	1	1.48±0.61 (1–4)
	n	**%**
Age		
Less than 65 years old	97	56.1
Age 65 and above	76	43.9
Gender		
Female	71	41
Male	102	59
Education		
Illiterate+Uneducated	59	34.1
Primary School	53	30.6
Middle School	33	19.1
High school+University	28	16.2
Employment status		
Employed	36	20.8
Unemployed	137	79.2
Economic status		
Disadvantaged	64	37
Average	197	61.8
Good	2	1.2
Family type		
Nuclear family	59	34.1
Extended family	87	50.3
Broken family	27	15.6
Received COPD training		
Yes	122	70.52
No	51	29.48
Illness other than COPD		
Yes	142	82.1
No	31	17.9
Using oxygen at home		
Yes	72	41.62
No	101	58.38
Having a health checkup during the pandemic		
Yes	91	52.6
No	82	47.4
Receiving pneumococcus vaccine		
Yes	21	12.1
No	152	87.9
Contracting COVID-19		
Yes	31	17.9
No	142	82.1
COVID-19 treatment		
At home	4	2.3
Hospitalized	24	13.9
Admission to intensive care	3	1.7
Engaging in physical activity		
Yes	51	29.5
No	122	79.5
Smoking		
Current smoker	16	9.2
Smoked and quit+never smoked	157	90.8
Illness-related sleep problem		
Yes	125	72.3
No	48	27.7
Total	173	100

COPD: Chronic obstructive pulmonary disease, SD: Standard deviation, ER: Emergency room

Table 2: Mean scores of CAT and SCMP-G subscales

Scales	Possible scores	Min-max	Median	Mean±SD
CAT	0–40	15–37	26	26.51±4.12
SCMP-G sub-scale				
Self-guarding	20–100	51–84	67	66.63±5.39
Social guarding	15–75	33–73	49	49.38±5.77
SCMP-G total	35–175	84–157	118	116.01±9.52

CAT: Chronic obstructive pulmonary disease assessment test, SCMP-G: The self care management process in chronic illness

Table 3: Comparison of SCMP-G and CAT mean scores according to COPD patients' sociodemographic characteristics

Variables			SCMP-G			CAT
			Self-guarding	Social guarding	Total	
	n	%	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Age						
Less than 65 years old	97	56.1	67.53±4.95	48.27±4.55	115.80±7.99	25.21±3.85
Age 65 and above	76	43.9	65.48±5.73	50.80±6.80	116.29±11.22	28.18±3.8
Statistical assessment			t=2.519	t=–2.928	t=–0.332	t=–5.031
			p=0.013	p=0.004	p=0.740	p<0.001
Gender						
Female	71	41	65.9±5.46	50.07±6.17	115.97±10.27	26.35±4.05
Male	102	59	67.15±5.31	48.9±5.46	116.05±9.01	26.63±4.2
Statistical assessment			t=–1.500	t=1.312	t=0.052	t=–0.431
			p=0.135	p=0.191	p=0.958	p=0.667
Employment status						
Employed	36	20.8	67.55±6.18	47.22±3.71	114.77±7.97	23.88±4.01
Unemployed	137	79.2	66.39±5.16	49.94±6.08	116.34±9.88	27.20±3.88
Statistical assessment			t=1.151	t=–2.562	t=–0.877	t=–4.528
			p=0.251	p=0.011	p=0.382	p<0.001
Economic status						
Disadvantaged	64	37	67.36±4.8	49.23±5.77	116.59±8.82	26.08±4.21
Average	197	61.8	66.23±5.66	49.49±5.85	115.72±9.95	26.86±4
Good	2	1.2	65±9.9	48.5±2.12	113.5±12.02	22±7.07
Statistical assessment			F=0.965	F=0.061	F=0.237	F=1.952
			p=0.383	p=0.941	p=0.789	p=0.145
Family type						
Nuclear family[1]	59	34.1	68.69±6.01	49.29±5.83	117.98±10.21	25.25±3.98
Extended family[2]	87	50.3	65.20±4.11	49.69±5.54	114.89±8.42	27.10±4.01
Broken family[3]	27	15.6	66.78±6.27	48.59±6.51	115.37±10.92	27.37±4.31
Statistical assessment			F=8.019	F=0.381	F=1.957	F=4.387
			p<0.001	p=0.684	p=0.144	p=0.014
			1>2			1<2,3

accounted for 20.3% of the total variance in the Social Guarding subscale (R²=0.203, p<0.001). It was determined that CAT scores, undergoing health check-ups, and the presence of chronic diseases besides COPD were significant predictors of social guarding (Table 5).

A significant relationship was also found between the self-care management process in patients with COPD and two key factors: their regularity in applying for health check-ups during the pandemic (β=0.247, p<0.001) and their CAT scores (β=0.179, p<0.05). These factors explained 8% of the total variance in the self-care management process (R²=0.080, p<0.001). The study established that CAT scores and regular health check-ups were significant predictors of self-care management (Table 5).

Table 4: Comparison of SCMP-G and CAT mean scores according to COPD patients' disease-related characteristics

Variables			SCMP-G			CAT
			Self-guarding	Social guarding	Total	
	n	%	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Received COPD training						
Yes	122	70.52	66.64±4.8	49.2±5.47	115.84±8.68	26.28±4.23
No	51	29.48	66.63±6.65	49.82±6.49	116.45±11.35	27.08±3.84
Statistical assessment			t=0.012	t=−0.650	t=−0.386	t=−1.164
			p=0.989	p=0.517	p=0.700	p=0.246
Illness other than COPD						
Yes	142	82.1	66.65±5.14	50.1±5.79	116.75±9.44	26.99±4
No	31	17.9	66.58±6.53	46.1±4.48	112.68±9.31	24.35±4.06
Statistical assessment			t=0.054	t=3.617	t=2.179	t=3.309
			p=0.957	p<0.001	p=0.031	p<0.001
Having a health checkup during the pandemic						
Yes	91	52.6	67.74±4.63	50.26±5.44	118±8.19	25.92±4.43
No	82	47.4	65.41±5.92	48.4±6.01	113.82±10.42	27.17±3.67
Statistical assessment			t=2.851	t=2.139	t=2.913	t=−2.004
			p=0.005	p=0.035	p=0.004	p=0.045
Contracted COVID						
Yes	31	17.9	67.68±6.28	47.13±5.03	114.81±9.71	24.9±3.76
No	142	82.1	66.41±5.18	49.87±5.82	116.28±9.49	26.87±4.13
Statistical assessment			t=1.188	t=−2.432	t=−0.781	t=−2.434
			p=0.236	p=0.010	p=0.436	p=0.016
Engaging in physical activity						
Yes	51	29.5	67.94±4.92	47.63±3.96	115.57±7.03	23.67±3.59
No	122	79.5	66.09±5.51	50.11±6.25	116.20±10.4	27.70±3.74
Statistical assessment			t=2.078	t=−3.140	t=−0.467	t=−6.546
			p=0.039	p=0.002	p=0.641	p<0.001

Discussion

Self-care management of COPD patients was found to be at a moderate level in this study that was conducted during the COVID-19 pandemic. Previous studies with COPD patients before the pandemic indicated lower levels of self-care management than those observed in this study.[14,15] This finding suggests that COPD patients paid more attention to their disease self-care during the pandemic. It is hypothesized that the enhanced social support received by the study participants, due to the severe nature of their condition, also contributed to the improved self-care management.

The most important finding of this study was the discovery that going for a check-up during the pandemic was a significant determinant in the self-care management process. Those with COPD who had check-ups displayed better self-care management. The quarantine and social distancing measures governments worldwide, including in Turkey, implemented during the pandemic, advised the public not to visit medical facilities unless they had specific problems or exacerbated symptoms.[16,17] This study showed that the self-care management of COPD patients who did not visit health facilities for a check-up during the pandemic was negatively affected, leading to hospitalizations. Individuals with COPD must undergo regular monitoring evaluations of their exposure to risk factors, current condition, symptoms, and treatment effectiveness.[18,19] It was reported that individuals with COPD, who visited clinics only to renew their prescriptions and did not undergo regular examinations, displayed lower rates of inhaler drug compliance and drug use as per the guidelines.[18] In pandemics and epidemics, countries need different action plans to enable the follow-up and monitoring of individuals with chronic illnesses. Hospitals admitting COVID-19 patients should be separate from those treating other chronic diseases. Additionally, home care, telephone follow-ups, and telehealth services can be beneficial. In the systematic review and meta-analysis by Jolly et al.[20] (2016), similar recommenda-

Table 5: Multiple regression analysis of factors associated with self-care management of COPD patients

SCMP-G subscales and total SCMP-G	R²	ΔR²	F	p	Unstandardized regression coefficients B	95% CI for B		Standardized regression coefficients β	t	p
						Lower bound	Upper bound			
Self-guarding										
Constant	0.152	0.137	10.136	<0.001	70.283	65.982	74.584		32.257	<0.001***
Age					−0.085	−0.145	−0.024	−0.210	−2.757	0.006**
Having a health checkup during the pandemic					2.064	0.554	3.574	0.192	2.699	0.008*
Family type					2.088	0.379	3.797	0.184	2.412	0.017*
Social guarding										
Constant	0.203	0.189	14.366	<0.001	33.248	27.895	38.601		12.262	<0.001***
CAT					0.471	0.273	0.669	0.337	4.701	<0.001***
Having a health checkup during the pandemic					2.495	0.914	4.076	0.216	3.115	0.002**
Illness outside of COPD					2.830	0.731	4.929	0.189	2.661	0.009**
Self care management (total SCMP-G)										
Constant	0.080	0.069	7.364	<0.001	102.592	93.164	112.020		21.480	<0.001***
Having a health checkup during the pandemic					4.698	1.905	7.492	0.247	3.320	<0.001***
CAT					0.413	0.074	0.752	0.179	2.405	0.017*

*: p<0.05, **: p<0.01, ***: p<0.001. CI: Confidence interval

tions were made for COPD patients' access to healthcare. Thus, increased interaction of patients with health professionals will contribute to improved self-care management and, consequently, better disease outcomes.

Patients with COPD exhibited a high level of illness severity according to CAT scoring. The CAT score is a significant determinant of self-care management and social guarding; as the severity of the illness increases, social guarding and self-care management also increase. COPD symptoms adversely affect an individual's daily activities and family life.[6] Research has shown that as the illness progresses, there is a deterioration in quality of life.[6,21] This study found that individuals with more severe diseases are more dependent on family members for daily activities and coping with self-care requirements and that this increases their level of social guarding.

Our study indicated that age is a significant determinant of self-guarding, with self-guarding behavior declining as age increases in patients with COPD. It was also observed that the older the individual, the more severe their illness was and the more their social guarding increased. Another study found that younger individuals were better able to adapt to written action plans concerning COPD flare-ups.[22] Chen et al.[23] (2017) found an association in their study between living with others or receiving social support from a caretaker and higher self-care behavior among adults with COPD. For these reasons, the elderly, patients with more severe illness and comorbidity, and their relatives should be provided with training on how to achieve self-care management. Patient school programs and support groups for patients with COPD and their relatives can also contribute to increasing the self-care management of patients with COPD.

COPD symptoms negatively affect the quality of life, daily activities, sleep patterns, and physical activity, presenting a significant burden for persons with COPD who are employed.[6,24] We also found in our study that the severity of the illness and social guarding were higher in unemployed individuals compared to those who were working. The results of the study by Kar and Zengin (2019) similarly indicate that unemployed individuals have higher levels of illness severity.[25] These findings show that as the severity of the illness increases, patients find they cannot continue to work, which leads to a decline in their self-care behavior and increases their dependency on others.

In our study, we found that family type was a significant determinant of chronic illness self-care management, with those living in a nuclear family exhibiting higher levels of self-guarding. The present study also showed that individuals in nuclear families had lower levels of illness severity, which we believe contributed to their increased self-guarding. Other studies have demonstrated that patients who are married and living with their families possess higher levels of self-care capability,[26] and those in nuclear families exhibit lower levels of illness severity.[25]

The majority of patients with COPD participating in the study had another comorbidity. The presence of comorbidities is reported to increase the severity of COPD, leading to limitations in activity and adversely affecting quality of life and mortality.[1,25] The findings of the present study align with the literature, indicating that an additional illness alongside COPD leads to a higher level of illness severity. Moreover, the presence of an illness in addition to COPD is a significant determinant of social guarding; levels of social guarding and chronic illness self-care management are higher among those with an additional illness alongside COPD. Given that comorbidity can negatively impact the progression of disease in the event of a COVID-19 infection,[16] self-care management becomes even more critical among individuals with COPD who have an additional condition.

In the present study, we found that those with COPD who did not contract COVID-19 exhibited higher levels of illness severity and social guarding compared to those who had become ill with COVID-19. We believe that since individuals with COPD tend to experience more severe cases of COVID-19, those with more severe COPD are more likely to adhere to protective measures against COVID-19. Additionally, the activity limitations due to their illness likely result in forced isolation, a factor that reduces the risk of becoming infected.[24,27,28] It might be said that individuals with COPD who receive substantial social support and have a high degree of social guarding tend to limit their external contacts. This could reduce their risk of contracting COVID-19, positively affecting their illness management.

Regular exercise is reported to decrease dyspnea in COPD patients, increase functional capacity, enhance daily living activities, improve quality of life, and relieve anxiety and fatigue.[29,30] Despite the positive impacts of physical activity and exercise, this study found that patients with COPD displayed low levels of physical activity. Those who did not engage in physical activity had more severe cases of the disease. Literature reports also reveal that individuals with COPD exhibit insufficient physical activity levels, which decrease as the illness progresses.[31] Our findings indicate that those engaging in physical activity had high levels of self-guarding, low levels of social guarding, and placed importance on physical activity as recommended in the literature. The major barriers to engaging in physical activity for COPD patients are a lack of motivation and comorbidity.[30] For effective disease management, it is crucial for COPD patients to be physically active and perform regular exercises; they should receive support and motivational encouragement in this regard.

Limitations
The study's results are limited to its own sample and, therefore, cannot be generalized. Data were collected based on self-reporting, with results restricted to the responses given by the COPD patients on the questionnaire.

Conclusion

The results of the study indicate that individuals with COPD generally exhibited moderate self-care management levels. Higher levels of self-care management was observed in those attending health check-ups during the pandemic and in patients with more severe disease. Notably, it was observed that individuals with COPD from nuclear families who participated in health check-ups during the pandemic showed higher self-protection levels, although these levels decreased with age. Moreover, individuals with severe COPD, comorbidities, and who underwent health check-ups during the pandemic had higher social protection levels.

In summary, individuals with COPD who maintained regular health check-ups during the pandemic demonstrated improved self-care management and disease outcomes (CAT). Thus, consistent follow-up of COPD patients in hospitals, including the separation of COVID-19 hospitals, along with providing home care, telephone follow-up, and telehealth services, is crucial during pandemic conditions. These measures are anticipated to boost self-care management and improve disease outcomes in COPD patients. This study's findings are expected to contribute to programs designed to improve self-care management of patients with COPD. Future research should focus on evaluating the effectiveness of these programs in improving COPD patients' self-care management.

Conflicts of interest

There are no conflicts of interest.

Ethics Committee Approval

The study was approved by the Bezmialem Vakıf University Non-interventional Research Ethics Committee (No: 7059 Date: 18/06/2020).

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Authorship Contributions

Concept – E.Y., N.İ., T.A.; Design – E.Y., N.İ.; Supervision – E.Y., N.İ., T.A.; Funding – E.Y., N.İ., T.A.; Materials – E.Y., N.İ.; Data collection &/or processing – E.Y.; Analysis and/or interpretation – E.Y., N.İ.; Literature search – E.Y., N.İ., T.A.; Writing – E.Y., N.İ.; Critical review – E.Y., N.İ., T.A.

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