ORIGINAL RESEARCH

The Relationship Between Frailty and Psychosocial Adjustment in Older Adults with COPD

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Abstract

Objective: Frailty in older adults can manifest through various symptoms; reduced oxygen capacity is one of its prominent indicators. As individuals age, the prevalence of chronic obstructive pulmonary disease (COPD), a condition characterized by diminished oxygenation, also tends to increase. COPD and frailty can cause psychosocial adjustment difficulties. The study investigated the relationship between frailty and psychosocial adjustment in older adults with COPD.

Materials and Methods: This descriptive-correlational study was conducted with 137 older patients who met the inclusion criteria. Data were collected using a patient identification form, the Psychosocial Adjustment to Illness Scale-self report (PAIS-SR), and the Edmonton Frail Scale (EFS).

Results: Participants had a mean PAIS-SR score of 54.37 ± 12.91. They had a mean EFS score of 6.79 ± 3.83. Age and COPD stage affected their median PAIS-SR scores ($p<0.05$). Age, education, occupation, and hospitalization also affected their EFS scores ($p<0.05$). There is a negative correlation between frailty and psychosocial adjustment. Moreover, the COPD stage and frailty are associated with psychosocial adjustment.

Conclusion: The frailer the older COPD patients are, the lower their psychosocial adjustment. Poor psychosocial adjustment is associated with COPD stages and frailty. Age, education, hospitalization, and psychosocial adjustment are predictors of frailty. Older COPD patients with low education levels, advanced disease stages, and frequent hospitalizations should be assessed for frailty and psychosocial adaptation. Evaluating patients may help us detect frail patients with low adaptation levels. In that way, we can meet patients' monitoring and care needs in the early period.

Keywords: Adjustment, aging, chronic obstructive pulmonary disease, frailty, geriatric nursing

Introduction

Chronic obstructive pulmonary disease (COPD), a progressive yet preventable disease, is the fourth leading cause of death (4.7%), with a global prevalence of 10.3% (1,2). In Türkiye, respiratory diseases are the third leading cause of death, with COPD being responsible for 61.5% of deaths due to respiratory diseases (1,3). While there has been a substantial decrease in mortality from other prominent causes of death in recent years, there has been

a rise in mortality due to COPD (2,4). The prevalence of COPD, which is 13.2% at ages 65-69 and 17.9% at ages 75-79, rises with advancing age (5). As the number of risk factors grows and the population continues to age, it is anticipated that the prevalence of COPD will continue to rise in the years ahead (2).

The process of aging often leads to frailty, marked by functional losses in multiple organs or systems and heightened vulnerability to stressors. Frailty involves cognitive, psychological, and social factors (6). According to Buchner and Wagner (6), a primary

sign of frailty is decreased energy metabolism and O_2 levels due to cardiac or pulmonary disease. Individuals with COPD are also prone to frailty due to the condition's characteristic symptoms of shortness of breath and hypoxia, which are frequently associated with aging (2). Almost one in every three individuals with COPD is frail (32%), which is associated with shortness of breath (7).

Both shortness of breath and comorbidities play a role in the advancement of COPD, rendering the management of the disease more challenging (1). Chronic diseases are stressors that change adaptive capacity (8,9). Some patients consider COPD a devastating condition because COPD is a progressive disease without an effective cure. Progressive pathophysiological changes, medication requirements, and symptoms, (e.g., breathing difficulties) decrease COPD patients' quality of life, resulting in psychological issues (9,10). Research shows that COPD patients often experience death anxiety, which exacerbates their difficulties in adapting socially to the disease and life (9). COPD also leads to frequent hospitalizations and a reduced workforce due to exacerbations, resulting in socioeconomic challenges (1). Older COPD patients with long-term disease and frequent exacerbations exhibit low levels of disease acceptance (11). Therefore, COPD is not only a physical but also a psychosocial condition with biological, psychological, social, familial, and environmental consequences (9,12). Research has shown that COPD patients have poor psychosocial adaptation (9,13,14). Patients with COPD need to adapt to these changes to maintain homeostasis (12).

Psychosocial adjustment is influenced by various factors related to both the disease and its treatment (9,13). Conversely, changes in psychosocial adjustment-whether improvement or decline-can impact the prognosis. Additionally, frailty is common in older COPD patients (5). Uchmanowicz reported that high levels of physical and social frailty reduced the level of disease acceptance (11). However, the link between frailty and psychosocial adjustment in older COPD patients is unclear. Healthcare professionals should adopt a holistic approach when dealing with individuals with COPD, regularly monitoring their condition and evaluating any problems or challenges they may face. Determining the relationship between frailty and psychosocial adjustment in older adults with COPD and the factors affecting this relationship will guide a holistic approach in the evaluation of care management and treatment. This study was conducted to determine the relationship between frailty and psychosocial adjustment in older individuals with COPD.

Materials and Methods

Design and Samples

This descriptive-correlational study population consisted of all patients with COPD admitted to the inpatient and outpatient units of a public hospital in Türkiye between December 2019 and February 2020. The inclusion criteria were 1) aged 65 years and older, 2) having COPD for at least six months, 3) having no mental disorder, 4) having no communication problems, and 5) volunteering. The sample consisted of 137 participants. At the end of the study, a power analysis was performed based on the results of the second regression model. The results indicated a power of 99.9% (α=0.05). The independent variables were age, gender, education, and COPD duration, and stage. The dependent variables were psychosocial adjustment and frailty levels.

Data Collection

The data were collected face-to-face using a patient identification form, the Psychosocial Adjustment to Illness Scale-self report (PAIS-SR), and the Edmonton Frail Scale (EFS). Outpatients were interviewed in the meeting room, while inpatients were interviewed in the patient rooms. Each interview lasted about 25 minutes.

The Identification Form

Consisted of 20 questions on sociodemographic (age, gender, education, income, etc.) and disease-related factors (alcohol/tobacco use, COPD duration, comorbidities, medications, hospitalizations, etc.). It was developed by the researchers (13,15).

Psychosocial Adjustment to Illness Scale-Self Report

The instrument consists of seven subscales: 1) healthcare orientation, 2) vocational environment, 3) domestic environment, 4) sexual relationships, 5) extended family relationships, 6) social environment, and psychological distress. The total score ranges from 0 to 138, with lower scores indicating good psychosocial adjustment. The scores below 35 indicate good psychosocial adjustment. The scores between 35 and 51 refer to moderate psychosocial adjustment. The scores above 51 are associated with poor psychosocial adjustment (16,17). Cronbach's alpha score was 0.81 in the present study.

EFS was developed in 2006 (18) and adapted to Turkish by Aygör et al. (19) in 2013. The scale consists of 11 items that assess nine subscales: 1) cognition, 2) general health status, 3) functional independence, 4) social support, 5) medication use, 6) nutrition, 7) mood, 8) continence, and 9) functional performance. The total score ranges from 0 to 17. The degree of frailty is scored as follows: 0-4 points indicate no frailty, while the degree of frailty increases with every 2-point increase. Cronbach's alpha score was 0.74 in the study.

Statistical Analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS, version 25) at a significance level of 0.05. Descriptive statistical methods, comparison tests, correlation, and reg ression tests were used for analysis. The results showed that the data were non-normally distributed. Therefore, the

Mann-Whitney U test and the Kruskal-Walli's test were used for analysis. Tamhane's test was used for post-hoc comparisons. Spearman's correlation coefficients were employed to assess the relationship between numerical variables. Backward analysis was used for regression testing.

Ethical Considerations

The study was approved by the ethics committee of Düzce University (approval number: 2019/119, date: 25.06.2019). Permission was obtained from the Provincial Directorate of Health (61518654-619). Written consent was obtained from all participants. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Results

Participants had a mean age of 70.51 ± 5.18 years. More than half of the patients were 65-69 years of age (52.6%), and 65% were men. 36.5% of the older patients had primary school degrees; 48.2% of them were retired. Almost a quarter of the participants were smokers, (23.4%) (19.69 ± 10.47 cigarettes a day. Participants were diagnosed with COPD more than 14 years ago (14 ± 9.16). Fewer than half of the participants had Stage II COPD (45.3%). All participants experienced dyspnea, with 54.4% reporting symptoms twice a day. More than 59.1% of the participants had been previously hospitalized for COPD. Additionally, 59.1% of participants had been hospitalized for COPD. Most participants were on respiratory support (75.2%).

Participants had a mean PAIS-SR score of 54.37 ± 12.91. They had mean PAIS-SR "social environment" and "extended family relationships" subscale scores of 6.93 ± 3.1 and 3.32 ± 2.87, respectively. 53.3% of the participants had poor psychosocial adjustment (Table 1). Age ($\chi^2=7.32$, $p=0.026$) and COPD stages ($\chi^2=9.71$, $p=0.021$) affected participants' median PAIS-SR scores ($p<0.05$). Participants over 76 years of age had a higher median

Table 1. EFS and PAIS-SR levels and score of averages		Mean ± SD Median (min.–max.)	Possible range of score (min.–max.)
Edmonton Frailty Scale		6.79±3.83 6 (0-15)	0–17
PAIS-SR subscales			
Orientation to healthcare		11.97±3.28 11 (7-20)	0–24
Vocational environment		7.22±2.93 8 (2-13)	0–18
Domestic environment		7.96±3.36 8 (0-17)	0–24
Sexual relationships		9.75±4 9 (1-15)	0–18
Extended family relationships		3.32±2.87 2 (0-12)	0–15
Social environment		6.93±3.11 7 (0-17)	0–18
Psychological distress		7.23±3.41 8 (0-14)	0–21
PAIS-SR total		54.37±12.91 53 (16-82)	0–138
		n (137)	%
Psychosocial adjustment level (PAIS-SR)	Well adjusted (score of <35)	7	5.1
	Moderately adjusted (35-51 score)	57	41.6
	Poorly adjusted (score of >51)	73	53.3
Frailty level (EFS)	Not frail	48	35
	Apparently vulnerable	21	15.3
	Mildly frail	20	14.6
	Moderately frail	18	13.1
	Severely frail	30	21.9
Min.: Minimum, Max.: Maximum, SD: Standard deviation, PAIS-SR: Psychosocial Adjustment to Illness Scale-Self Report, EFS: Edmonton Frailty Scale			

PAIS-SR score than those aged 65-69 years (p<0.05). Moreover, participants with Stage III COPD had a significantly higher median PAIS-SR score than those with Stage I COPD (p<0.05) (Table 2).

The participants' EFS mean score was 6.79±3.83 (Table 1). Almost half of the participants were frail (49.6%), while nearly a quarter of them were severely frail (21.9%) (Table 1).

Table 2. Comparison of EFS and PAIS-SR scales scores medians according to patients' descriptive and disease characteristics		
	PAIS-SR total score Median (min.-max.)	EFS total score Median (min.-max.)
Age		
65-69 (n=72)	49.0 (16-82)	4.0 (0-15)
70-75 (n=45)	56.0 (34-79)	8.0 (1-15)
76 + (n=20)	61.5 (37-79)	11.0 (5-14)
Test value	χ^2=7.325; p=0.026* Difference: 1-3	χ^2=35.963; p<0.001* Difference: 1-2; 1-3; 2-3
Gender		
Female (n=48)	53.0 (16-79)	5.0 (0-15)
Male (n=89)	53.0 (33-82)	7.0 (1-15)
Test value	z=-0.127; p=0.899	z=-1.094; p=0.274
Marital status		
Married (n=105)	52.0 (16-82)	6.0 (0-15)
Single (n=32)	54.0 (30-79)	8.5 (1-15)
Test value	z=-0.237; p=0.813	z=-1.879; p=0.060
Education status		
Illiterate (n=31)	57.0 (16-79)	9.0 (2-14)
Literate (n=23)	51.0 (34-79)	9.0 (3-15)
Primary school (n=50)	51.5 (33-82)	6.0 (1-14)
High school and higher (n=33)	53.0 (38-77)	4.0 (0-15)
Test value	χ^2=2.266; p=0.519	χ^2=32.244; p<0.001* Difference: 1-3; 1-4; 2-4; 3-4
Employment status		
Retired (n=12)	54.5 (38-77)	3.0 (1-15)
Officer (n=18)	50.5 (34-76)	4.5 (0-14)
Employee (n=66)	55.5 (30-79)	8.0 (1-15)
Self-employment (n=25)	50.0 (38-82)	6.0 (1-13)
Not working (n=16)	52.5 (16-70)	7.5 (1-12)
Test value	χ^2=3.519; p=0.475	χ^2=12.621; p=0.013* Difference: 1-3
Income perception		
Less than expenses (n=31)	54.0 (16-82)	7.0 (1-14)
Equal to expenses (n=92)	53.0 (30-79)	6.5 (0-15)
More than expenses (n=14)	52.0 (34-66)	6.0 (1-11)
Test value	χ^2=0.678; p=0.712	χ^2=0.430; p=0.807
Smoking status		
Current smoker (n=32)	51.5 (16-79)	4 (1-14)
Non-smoker (n=53)	56.0 (30-79)	7 (1-15)
Ex-smoker (n=52)	51.0 (33-82)	7 (0-14)
Test value	χ^2=2.171; p=0.338	χ^2=3.611; p=0.164

Table 2. continued		
	PAIS-SR total score **Median (min.-max.)**	**EFS total score** **Median (min.-max.)**
COPD duration		
1-5 year (n=32)	53.5 (37-82)	7.5 (0-15)
6-10 year (n=27)	50.0 (16-77)	8.0 (1-14)
11-15 year (n=31)	53.0 (30-79)	5.0 (1-14)
16-20 year (n=22)	53.5 (33-79)	4.5 (1-15)
21 and above (n=25)	55.0 (34-79)	9.0 (1-13)
Test value	χ^2=1.166; p=0.884	χ^2=6.753; p=0.150
COPD stage		
Stage 1 (n=22)	47.5 (16-76)	5.5 (0-14)
Stage 2 (n=62)	52.0 (30-77)	(1-14)
Stage 3 (n=40)	57.0 (38-82)	(1-15)
Stage 4 (n=13)	53.0 (38-79)	9.0 (1-14)
Test value	χ^2=9.712; p=0.021* Difference: 1-3	χ^2=3.518; p=0.318
Respiratory distress		
With effort (n=66)	51.0 (16-79)	6.0 (0-15)
All the time (n=71)	55.0 (37-82)	7.0 (1-14)
Test value	z=-1.266; p=0.205	z=-1.593 p=0.111
Hospitalization		
Yes (n=81)	56.0 (30-82)	8.0 (1-15)
No (n=56)	50.5 (16-79)	4.0 (0-14)
Test value	z=-1.920; p=0.055	z=-4.063; p<0.001*
Using respiratory support device		
Yes (n=103)	55.0 (16-82)	6.0 (0-15)
No (n=34)	50.0 (37-76)	6.5 (1-14)
Test value	z=-1.662; p=0.097	z=-0.243; p=0.808
*p<0.05, (z): Mann-Whitney U testi, (χ^2): Kruskal-Wallis, Difference: Tamhane's Test. PAIS-SR: Psychosocial Adjustment to Illness Scale-Self Report, EFS: Edmonton Frailty Scale, SD: Standard deviation, Min.: Minimum, Max.: Maximum, COPD: Chronic obstructive pulmonary disease		

Age (χ^2=35.96, p<0.001), education (χ^2=32.24, p<0.001), occupation (χ^2=12.62, p=0.013), and hospitalization history (z=-4.06, p<0.001) affected participants' median EFS scores. Participants over 76 years of age had a significantly higher median EFS score than those aged 65-69 years. Participants with bachelor's or higher degrees had a significantly lower median EFS score than those with high school or lower degrees. Illiterate participants had a significantly higher median EFS score than those with primary school or higher degrees. Participants with a history of hospitalization had a significantly higher median EFS score than those without a history of hospitalization (p<0.05) (Table 2).

There was a weak positive correlation between total EFS and PAIS-SR scores (rs=0.337, p<0.05). A weak positive correlation existed between total EFS and PAIS-SR "vocational environment" (rs=0.314), "domestic environment" (rs=0.323), "extended family relationships" (rs=0.206), "social environment" (rs=0.204),

and "psychological distress" (rs=0.248) subscale scores. The results showed that the more severe the frailty, the poorer the psychosocial adjustment (Table 3).

Table 4 shows the effect of sociodemographic characteristics and frailty on psychosocial adjustment. The model using backward elimination was significant (F=13.22, p<0.001). COPD stages and EFS explained 15.2% of the model. The effect of frailty on PAIS-SR was greater than the effect of COPD stages [beta (β)=-0.341].

Two models were developed using backward elimination to assess the effect of sociodemographic characteristics and psychosocial adjustment on frailty (Table 5). Model 1 was significant (F=18.654, p<0.001). Hospitalization history and psychosocial adjustment accounted for 20.6% of the variance in the model. Psychosocial adjustment had a greater effect on frailty than hospitalization history (β=0.319). Model 2 was

significant (F=24.501, p<0.001). Age, education, hospitalization history, and psychosocial adjustment accounted for 40.9% of the model. A one-unit increase in the PAIS-SR score led to an average increase of 0.073 units in the EFS score. Age had a greater effect on frailty than the other variables (β=0.318).

Discussion

The study explored the relationship between psychosocial adjustment and frailty in older COPD patients. The participants had poor psychosocial adjustment and were frail to varying degrees. The study results also indicated a negative correlation between psychosocial adjustment and frailty. It was concluded that the psychosocial adjustment of older patients with advanced COPD and those who are frail may be poor.

COPD has adverse effects on an individual's healthcare, psychological well-being, sexual life, relationships, and social surroundings. Because of the systemic impacts of COPD, patients' ability to adapt to psychosocial domains may be affected (14). The participants had poor psychosocial adjustment. Çelik and Özkan (13) found that patients with COPD had poor psychosocial adjustment, mostly affecting their adjustment to healthcare orientation and vocational environment. Yuet et al. (20) documented those patients with COPD had poor psychosocial adjustment, mostly affecting their adjustment to sexual relationships and domestic, vocational, and social environments. Research shows that patients with COPD have poor psychosocial adjustment, mostly affecting their adjustment to sexual relationships, healthcare orientation, and vocational, social, and domestic environments (9,13,20,21). In this study,

Table 3. The relationship between frailty scale score and psychosocial adjustment scale and sub-dimension scores

PAIS-SR		Total	Orientation to healthcare	Vocational environment	Domestic environment	Sexual relationships	Extended family relationships	Social environment	Psychological distress
EFS total	Spearman's rho	0.337**	-0.002	0.314**	0.323**	0.064	0.206*	0.204*	0.248**
	p	<0.001	0.131	<0.001	<0.001	0.458	0.016	0.017	0.003

*p<0.01, **p<0.05.
PAIS-SR: Psychosocial Adjustment to Illness Scale-Self Report

Table 4. Predictors of the psychosocial adjustment in individuals with COPD

Model	Coefficient		Standardized coefficient	t	p
	B	Std. Error	Beta		
Constant	40.483	3.259	–	12.423	<0.001
EFS	1.150	0.269	0.341	4.274	<0.001
COPD stage	2.618	1.203	0.174	2.176	0.031

F=13.222 p<0.001; Adjust R2= %15.2

EFS: Edmonton Frailty Scale, COPD: Chronic obstructive pulmonary disease

Table 5. Predictors of the frailty in individuals with COPD

Variables	Model 1					Model 2				
	Coefficient		Standardized coefficient	t	p	Coefficient		Standardized coefficient	t	p
	B	Std. Error	Beta			B	Std. Error	Beta		
Constant	4.824	1.650		2.925	0.004	4.250	1.666		2.550	0.012
Hospitalization	-2.262	0.602	-0.291	-3.759	<0.001	-1.223	0.544	-0.157	-2.250	0.026
PAIS-SR	0.095	0.023	0.319	4.124	<0.001	0.073	0.020	0.246	3.611	<0.001
Age						1.670	0.388	0.318	4.305	<0.001
Educational status						-0.922	0.261	-0.261	-3.535	0.001
F				18.654					24.501	
p				p<0.001					<0.001	
Adjust R2				20.6%					40.9 %	

PAIS-SR: Psychosocial Adjustment to Illness Scale-Self Report, COPD: Chronic obstructive pulmonary disease

COPD mostly affected the participants' healthcare orientation, sexual relationships, and vocational and domestic environments, which is consistent with the literature (9,13,20,22). Limitations in daily activities, functional reliance, and decreased physical activity could have influenced their healthcare orientation.

The stages of COPD, the frequency and duration of symptoms, comorbidities, and the loss of physical strength all have a negative impact on psychosocial adjustment (13,20). With an increase in the severity of COPD, there is a corresponding increase in respiratory difficulty and fatigue, leading to a decrease in activity status. This situation, in turn, results in a decrease in psychosocial adjustment (20). The results showed that COPD stage was a predictor of psychosocial adjustment and that participants with Stage III COPD had poorer psychosocial adjustment than those with Stage I COPD.

Half of the participants were frail to varying degrees. Researchers also show that the prevalence of frailty ranges from 35% to 50.2% (23-25). The underlying mechanisms linked to COPD, including factors like inflammation and muscle weakness, which contribute to the pathophysiology of frailty can increase the prevalence of frailty by at least twofold in individuals with COPD (15,24,26). Frailty is also a risk factor for COPD exacerbations and progression (15).

Age is also a risk for frailty (24). COPD is also associated with frailty. Aging, chronic inflammation, endocrine dysfunction, and smoking are shared risk factors for both COPD and frailty (11, 27). The result showed that age was a critical predictor of frailty. The literature also shows that age is an important variable for frailty in COPD patients (11,23,27). The findings align with the existing literature.

The results showed that education was a significant variable associated with frailty. There was a negative correlation between education and frailty. Education can mitigate frailty as educated individuals often have better access to information sources, are more adaptable to treatment, and tend to age more actively, which decreases the risk factors for frailty (23,28).

COPD causes repeated hospitalizations in frail patients. Kennedy et al. (29) highlighted a link between frailty and extended hospital stays in COPD patients, while Bernabeu et al. (30) noted that severely frail individuals were about five times more likely to be hospitalized. Frailty was an important risk for rehospitalization in patients with acute exacerbations. Shortness of breath and reduced physical activity resulting from COPD exacerbations as well as the loss of muscle strength due to frailty can contribute to multiple hospitalizations in older adults (11,29,30). Consistent with earlier studies, the findings emphasize that hospitalization is a significant determinant of frailty.

The results indicated a negative correlation between frailty and psychosocial adjustment. The results also showed that frailty was significantly associated with psychosocial adjustment. Frailty has a greater impact on psychosocial adjustment than COPD stages. Since both COPD and frailty lead to diminished oxygen capacity and share similar risk factors like dyspnea, these factors collectively have adverse effects on adjustment. In line with these findings, Uchmanowicz found that older patients with severe COPD were more prone to frailty and exhibited lower acceptance of their illness (11). The same study concluded that low disease acceptance was linked to higher levels of frailty, particularly in the physical and social domains. Frailty, coupled with decreased muscle strength resulting from COPD, frequent hospitalizations, reduced mobility, high levels of anxiety, and the fear of death, may collectively impact various aspects of life and hinder psychosocial adjustment (9,20,24,27,30). Zhao et al. (31) found that frailty and depression in individuals with COPD were associated with low disease self-management and limited social support. Low self-management impedes adaptation to healthcare orientation, while inadequate social support can lead to poor adaptation in extended family relationships and social environment areas.

Study Limitations

This is the first study to unveil the relationship between frailty and psychosocial adjustment and related predictors in older patients with COPD. However, the results are sample-specific and cannot be generalized to all older patients with COPD. Researchers should conduct studies in different centers and different cultures to better understand the link between frailty and psychosocial adaptation.

Conclusion

The participants had poor psychosocial adjustment. More than half of the participants were frail to varying degrees. Age, education, hospitalization, and psychosocial adjustment were predictors of frailty. The results showed a negative correlation between frailty and psychosocial adjustment. The results also suggested that COPD stages and frailty were associated with psychosocial adjustment. If healthcare professionals implement interventions to promote psychosocial adjustment and reduce frailty, the patients receiving these interventions experience the disease less severely and are hospitalized less frequently. In this context, it is advisable to conduct regular assessments of COPD patients, particularly those who are older, have lower education levels, are in advanced COPD stages, and experience frequent hospitalizations, with a focus on evaluating their psychosocial adjustment and frailty. The assessment will enable healthcare professionals to identify frail patients with low adjustment levels early and meet their follow-up and care needs in the early period. Furthermore, it is essential to expand psychosocial support services for older adults on both clinical and community levels, with the aim of enhancing psychosocial

adjustment. Educational and intervention initiatives are strongly recommended as effective strategies for mitigating frailty and enhancing psychosocial adjustment in older individuals with COPD.

Ethics

Ethics Committee Approval: The study was approved by the ethics committee of Düzce University (approval number: 2019/119, date: 25.06.2019). Permission was obtained from the Provincial Directorate of Health (61518654-619).

Informed Consent: Written consent was obtained from all participants.

Footnotes

Authorship Contributions

Concept: T.T.K., E.Ö., H.E.D., M.Ç.A., Design: T.T.K., Data Collection or Processing: H.E.D., M.Ç.A., Analysis or Interpretation: T.T.K., Literature Search: T.T.K., E.Ö., M.Ç.A., Writing: T.T.K., E.Ö., H.E.D.

Conflict of Interest: No conflict of interest was declared by the authors.

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References

1. Kocabaş A, Atış S, Çöplü L, Erdinç E, Ergan B, Gürgün A, et al. Chronic obstructive pulmonary disease (COPD) protection, diagnosis and treatment report 2014. Official Journal of the Turkish Thoracic Society. 2014;2(15):1-72. [In Turkish]. Available from: https://toraks.org.tr/site/sf/books/pre_migration/ 1e1f62017cef563a8a 04783042f7a1461a3b3a92c4c 96737dca6c0e02053f6eb.pdf

2. Global strategy for the diagnosis, management, and prevention of chronic obstructive lung disease: The GOLD science committee report. Last accessed: October 20, 2024. Available from: https://goldcopd.org/2024-gold-report/

3. Cause of death statistics. Last accessed: October 5, 2024. Available from: https://data.tuik.gov.tr/Bulten/Index?p=Olum-ve-Olum-Nedeni-Istatistikleri-2023-53709

4. Global Alliance Against Chronic Respiratory Diseases (GARD). Last accessed: August 3, 2024. Available from: https://www.who.int/groups/global-alliance-against-chronic-respiratory-diseases-(gard)/terms-of-reference

5. Adeloye D, Song P, Zhu Y, Campbell H, Sheikh A, Rudan I; NIHR RESPIRE Global Respiratory Health Unit. Global, regional, and national prevalence of, and risk factors for, chronic obstructive pulmonary disease (COPD) in 2019: a systematic review and modelling analysis. Lancet Respir Med. 2022;10:447-458.

6. Buchner DM, Wagner EH. Preventing frail health. Clin Geriatr Med. 1992;8:1-17.

7. Wang L, Zhang X, Liu X. Prevalence and clinical impact of frailty in COPD: a systematic review and meta-analysis. BMC Pulm Med. 2023;23:164.

8. Karataş T, Bostanoğlu H. Perceived social support and psychosocial adjustment in patients with coronary heart disease. Int J Nurs Pract. 2017;23.

9. Togluk S, Çuhadar D. The Effect of Death Anxiety on Psychosocial Adjustment in Individual With Chronic Obstructive Pulmonary Disease. Indian J Palliat Care. 2021;27:358-366.

10. Esteban C, Arostegui I, Aramburu A, Moraza J, Najera-Zuloaga J, Aburto M, Aizpiri S, Chasco L, Quintana JM. Predictive factors over time of health-related quality of life in COPD patients. Respir Res. 2020;21:138.

11. Uchmanowicz I, Jankowska-Polanska B, Chabowski M, Uchmanowicz B, Fal AM. The influence of frailty syndrome on acceptance of illness in elderly patients with chronic obstructive pulmonary disease. Int J Chron Obstruct Pulmon Dis. 2016;11:2401-2407.

12. Akdemir N. Internal medicine and nursing care. 6th ed. Akademisyen; 2021.

13. Çelik S, Özkan AH. Investigation of the factors affecting psychosocial adjustment to COPD. Eur Respir J. 018;Suppl.52:PA1517.

14. Özdemir Ü, Taşçı S. Psychosocial problems and care of chronic diseases. ERÜ Sağlık Bilimleri Fakültesi Dergisi. 2013;1:57-72.

15. Guan C, Niu H. Frailty assessment in older adults with chronic obstructive respiratory diseases. Clin Interv Aging. 2018;13:1513-1524.

16. Derogatis LR. The psychosocial adjustment to illness scale (PAIS). J Psychosom Res. 1986;30:77-91.

17. Adaylar M. Attitudes, adaptations, perceptions and self-care orientations of individuals with chronic illness. Dissertation, Istanbul University, Institute of Health Sciences. Istanbul, 1995. Turkish

18. Rolfson DB, Majumdar SR, Tsuyuki RT, Tahir A, Rockwood K. Validity and reliability of the Edmonton Frail Scale. Age Ageing. 2006;35:526-529.

19. Aygör HE, Fadıloğlu Ç, Şahin S, Aykar FŞ, Akçiçek F. Validation of edmonton frail scale into elderly turkish population. Arch Gerontol Geriatr. 2018;76:133-137.

20. Yuet LM, Alexander M, Chun CJ. Coping and adjustment in Chinese patients with chronic obstructive pulmonary disease. Int J Nurs Stud. 2002;39:383-395.

21. Okur E, Nural N. Compliance of a patient with chronic obstructive pulmonary disease and nursing interventions: case report. STED. 2022;31:314-20.

22. Borgmann M, Linnemann T, Schönhofer B, Ott SR, Bernardy K, Stammberger U, Vedder V, Bals R, Köllner V, Hamacher J. Krankheitserleben, partnerschaft und sexualität bei patienten mit COPD [Experience of disease, relationship and sexuality in patients with COPD]. Z Psychosom Med Psychother. 2019;65:257-271.

23. Bozkurt C, Yildirim Y, Şenuzun-Aykar F. The effect of frailty level on acceptance of illness in older people with chronic obstructive pulmonary disease. Turkish Journal of Geriatrics. 2021;24:244-254.

24. Lahousse L, Ziere G, Verlinden VJ, Zillikens MC, Uitterlinden AG, Rivadeneira F, Tiemeier H, Joos GF, Hofman A, Ikram MA, Franco OH, Brusselle GG, Stricker BH. Risk of frailty in elderly with COPD: a population-based study. J Gerontol A Biol Sci Med Sci. 2016;71:689-695.

25. Chin M, Voduc N, Huang S, Forster A, Mulpuru S. Practical lessons in implementing frailty assessments for hospitalised patients with COPD. BMJ Open Qual. 2020;9:e000782.

26. Marengoni A, Vetrano DL, Manes-Gravina E, Bernabei R, Onder G, Palmer K. The relationship between COPD and frailty: a systematic review and meta-analysis of observational studies. Chest. 2018;154:21-40.

27. Maddocks M, Kon SS, Canavan JL, Jones SE, Nolan CM, Labey A, Polkey MI, Man WD. Physical frailty and pulmonary rehabilitation in COPD: a prospective cohort study. Thorax. 2016;71:988-995.

28. Chang CI, Chan DC, Kuo KN, Hsiung CA, Chen CY. Prevalence and correlates of geriatric frailty in a northern Taiwan community. J Formos Med Assoc. 2011;110:247-257.

29. Kennedy CC, Novotny PJ, LeBrasseur NK, Wise RA, Sciurba FC, Benzo RP. Frailty and Clinical Outcomes in Chronic Obstructive Pulmonary Disease. Ann Am Thorac Soc. 2019;16:217-224.

30. Bernabeu-Mora R, García-Guillamón G, Valera-Novella E, Giménez-Giménez LM, Escolar-Reina P, Medina-Mirapeix F. Frailty is a predictive factor of readmission within 90 days of hospitalization for acute exacerbations of chronic obstructive pulmonary disease: a longitudinal study. Ther Adv Respir Dis. 2017;11:383-392.

31. Zhao J, Zhang X, Li X, Zhang R, Chang Y, Li Y, Lu H. Unraveling the mediation role of frailty and depression in the relationship between social support and self-management among Chinese elderly COPD patients: a cross-sectional study. BMC Pulm Med. 2024;24:66.