Vietnam Journal of Community Medicine, Vol. 67, English version No. 1, 2026, 356-360

SELF-MANAGEMENT BEHAVIORS AND ASSOCIATED FACTORS AMONG PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AT VIET TIEP FRIENDSHIP HOSPITAL, 2025–2026.

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Received: 12/05/2026
Revised: 22/05/2026; Accepted: 27/05/2026

ABSTRACT

Objective: To describe the current status and identify factors associated with self-management behaviors among outpatients with COPD at Viet Tiep Friendship Hospital in 2025–2026.

Methods: A cross-sectional descriptive study was conducted from November 2025 to March 2026 on 158 COPD outpatients, using convenience sampling.

Results: The mean overall self-management score was 2.30 ± 0.36, with the highest score in daily life management (2.68 ± 0.45) and the lowest in information management (2.02 ± 0.59). Most participants had a moderate level of self-management (74.1%). Significant differences in self-management scores were found according to educational level (p = 0.0001), comorbidities (p = 0.003), and history of hospitalization due to exacerbations (p = 0.002). In addition, self-management behavior was negatively correlated with age (r = -0.23; p = 0.003) and symptom burden (r = -0.28; p = 0.009).

Conclusion: Self-management behaviors among COPD patients were mainly at a moderate level and were influenced by age, educational level, comorbidities, history of exacerbations, and symptom burden. Interventions to enhance self-management should be strengthened.

Keywords: COPD, self-management behavior, outpatient.

1. INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a major global public health concern and has been widely described as a “silent epidemic” of the 21st century [1]. In 2021, it was estimated that approximately 213 million individuals were living with COPD worldwide, with an annual incidence of 16.9 million new cases. The disease accounts for approximately 3.71 million deaths each year, representing nearly 5% of all global mortality, and contributes substantially to the global burden of disease, with 79.8 million disability-adjusted life years (DALYs) lost [2]. In Vietnam, the prevalence of COPD among adults is estimated to range from 7% to 10% [3]. Patients with COPD frequently experience acute exacerbations, which are associated with increased mortality risk and a marked deterioration in quality of life. In addition to its clinical impact, COPD imposes a considerable economic burden. The average annual treatment cost for hospitalized patients may exceed 28.8 million VND, while the cost per hospitalization at central-level hospitals has been reported at approximately 18.3 million VND [4]. These data underscore that COPD in Vietnam constitutes not only a significant healthcare challenge but also a substantial socio-economic burden, thereby highlighting the need for more effective disease management strategies, particularly those enhancing patient self-management.

Self-management in COPD refers to a patient-centered process in which individuals actively engage in applying knowledge and skills to monitor symptoms, adhere to prescribed treatments, adopt appropriate lifestyle modifications, and effectively cope with physical and psychological changes associated with the disease [5]. Core components of self-management encompass symptom management, management of daily activities, emotional regulation, information management, and the enhancement of self-efficacy [5]. A growing body of evidence indicates that effective self-management interventions can reduce the frequency of exacerbations and hospital readmissions, promote long-term disease stability, improve quality of life, and strengthen patient autonomy in health management [6,7]. Despite these benefits, self-management behaviors among patients with COPD remain sub-optimal in real-world settings and often fall short of expected outcomes [7]. Emerging evidence further suggests that demographic characteristics and disease-related factors play a critical role in shaping patients’ engagement in self-management practices [6,8]. However, in Vietnam, empirical evidence examining the relationships between these factors and self-management behaviors in COPD patients remains limited. Therefore, this study was undertaken to describe self-management behaviors and to identify associated factors among patients with COPD at Viet Tiep Friendship Hospital during the period 2025–2026.

2. METHODS

2.1. Study participants

The study population consisted of patients with COPD receiving outpatient care at the respiratory clinic of Viet Tiep Friendship Hospital from November 1, 2025, to March 1, 2026.

- Inclusion criteria:

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+ Patients with a confirmed diagnosis of COPD receiving outpatient care at the respiratory clinic.

+ Disease duration ≥ 3 months.

+ Age ≥ 18 years.

+ Provision of informed consent.

- Exclusion criteria:

+ Patients who refused to participate.

+ Patients with coexisting pulmonary diseases (e.g., pulmonary tuberculosis or lung cancer) or heart failure.

2.2. Study setting

The study was conducted at the outpatient respiratory clinic of Viet Tiep Friendship Hospital

2.3. Study period

The study was conducted from November 2025 to March 2026.

2.4. Study design

A descriptive cross-sectional design was employed.

2.5. Sample size and sampling method

The sample size was calculated using the formula for estimating a population mean, assuming a standard deviation (σ) of 0.42 (based on Lương Thị Thu Giang et al., 2016 [9]), a 95% confidence level (Z = 1.96), and a margin of error (d) of 0.07. The minimum required sample size was 139 participants. To account for an anticipated 10% rate of incomplete or invalid responses, the target sample size was increased to 150. In total, 158 eligible participants were included in the final analysis.

A convenience sampling method was used.

2.6. Study variables and measurements

- Sociodemographic and clinical characteristics: age, sex, place of residence, disease duration, educational level, marital status, and number of hospitalizations within the previous 12 months.

- Symptom burden: assessed using the COPD Assessment Test (CAT), an 8-item instrument with total scores ranging from 0 to 40, with higher scores indicating greater symptom severity.

- Self-management behaviors: assessed using the COPD Self-Management Questionnaire (CSM-Q), developed by Zhang et al. (2013) and adapted and validated for the Vietnamese context by Lương Thị Thu Giang (2016) [9]. The instrument comprises 30 items across five domains: symptom management, daily life management, emotional management, information management, and self-efficacy. Each item is rated on a 4-point Likert scale (1 = never to 4 = always). The overall Cronbach's alpha was 0.83 [9]. Mean scores (range: 1–4) were categorized as low (1.00–2.00), moderate (2.01–3.00), and high (3.01–4.00).

2.7. Data collection procedures

Data were collected through face-to-face interviews using a structured questionnaire.

2.8. Data management and analysis

Data were entered and analyzed using SPSS version 20.0. Descriptive statistics were used to summarize participant characteristics and study variables, including frequencies, percentages, means, and standard deviations. Independent samples t-tests were used to compare mean self-management scores between groups. Pearson correlation coefficients were calculated to assess associations between self-management behaviors and normally distributed continuous variables. A p-value < 0.05 was considered statistically significant.

2.9. Ethical considerations

The study protocol was approved by the Ethics Committee of Hai Phong University of Medicine and Pharmacy (Approval No. 2829/QĐ–YDHP) and conducted with permission from Viet Tiep Friendship Hospitall. All participants were fully informed about the study objectives and procedures and provided informed consent prior to participation. Participation was voluntary, and confidentiality was strictly maintained.

3. RESULTS

Table 1. Participants' characteristics (n = 158)

Variales		n	%
Age (Mean ± SD = 71,22 ± 9,17)	< 60	10	6,3
	60 - 79	123	77,8
	≥ 80	25	15,8
Place of residence	Urban	109	69
	Rural	49	31
Sex	Male	125	79,1
	Female	33	20,9
Main Caregive	Self care	9	5,7
	Spouse/children/relative	148	93,7
	Domestic caregiver	1	0,6
Education	< high school	76	48,1
	High school	49	31,0
	College/University	33	20,9
Desease duration (Mean ± SD = 11,2 ± 7,2;)	≤ 5 years	33	20,9
	> 5 years	125	79,1
Exacerbation history	None	68	43,0
	≥ 1 times	90	57,0
Comorbidity	Yes	67	42,4
	No	91	57,6
Smocking	Current smoker	11	7.0
	Former smoker	109	69,0
	Never smoker	38	24,0

The mean age of participants was 71.22 ± 9.17 years, with individuals aged 60–79 years representing the largest proportion (77.8%). The sample was predominantly male (79.1%). A majority lived in urban areas (69.0%) and received care from family members (93.7%). Nearly half had an educational attainment below high school (48.1%). The average duration of COPD was 11.2 ± 7.2 years, and 79.1% had been diagnosed for more than 5 years. Over the preceding 12 months, 57.0% had experienced at least one hospitalization due to exacerbation. Comorbidity conditions were reported in 42.4% of cases. Regarding smoking status, 76.0% had a

history of tobacco use, including 7.0% who continued to smoke at the time of the study.

Table 2. Symptom burden characteristics of the study participants (n = 158)

Symptom burden (CAT items)	Mean	SD
Cough	2,54	1,32
Sputum production	2,24	1,27
Chest tightness	2,31	1,33
Dyspnea on exertion	3,37	1,16
Activity limitation	2,64	1,37
Reduced confidence leaving home	2,35	1,57
Sleep disturbance	2,52	1,34
Lack of energy	2,68	1,04
Total CAT score	20,66	7,46

The mean total CAT score was 20.66 ± 7.46, indicating a considerable symptom burden among the participants. Dyspnea on exertion had the highest mean score (3.37 ± 1.16), followed by lack of energy (2.68 ± 1.04) and activity limitation (2.64 ± 1.37). The remaining items ranged from 2.24 to 2.54, suggesting a consistent impact on patients' daily functioning and overall well-being.

Table 3. Self-management behavior characteristics of the study participants (n = 158)

Domain	Mean	SD	Min	Max
Symptom management	2,48	0,43	1,38	3,88
Daily life management	2,68	0,45	1,71	4,00
Emotional management	2,14	0,59	1,00	4,00
Information management	2,02	0,59	1,00	3,50
Self-efficacy	2,15	0,44	1,14	3,71
Overall self-management score	2,30	0,36	1,59	3,54

The mean overall self-management score was 2.30 ± 0.36. Among the domains, daily life management yielded the highest mean score (2.68 ± 0.45), followed by symptom management (2.48 ± 0.43). In contrast, lower scores were observed for information management (2.02 ± 0.59) and emotional management (2.14 ± 0.59).

Table 4. Classification of self-management behavior levels among the study participants (n = 158)

Self-management level	n	%
Low	33	20,9
Moderate	117	74,1
High	8	5,1
Total	158	100

Most participants demonstrated a moderate level of self-management (74.1%), whereas 20.9% were classified as having low levels. Only a small proportion (5.1%) achieved a high level of self-management.

Table 5. Comparison of mean self-management scores across groups by sex, place of residence, educational level, comorbidity, and exacerbation history (n = 158)

Variables	Self-management	M± SD	p
Sex	Male	2,31 ± 0,37	0,40
	Female	2,25 ± 0,32	
Place of residence	Urban	2,29 ± 0,37	0,83
	Rural	2,30 ± 0,33	
Education	< high school	2,12 ± 0,28	0,0001
	≥ high school	2,46 ± 0,34	
Comorbidity	Yes	2,39 ±0,41	0,003
	No	2,21 ± 0,29	
Number of exacerbation-related hospitalizations in the past 12 months	None	2,19 ± 0,29	0,002
	≥ 1 times	2,37 ± 0,39	

No statistically significant differences in self-management scores were observed by sex (p = 0.40) or place of residence (p = 0.83). In contrast, significant differences were identified according to educational level, presence of comorbidity, and history of exacerbation-related hospitalization. Participants with an educational level ≥ high school, those with comorbidity conditions, and those with prior exacerbation-related hospitalizations had higher self-management scores compared with their respective counterparts (p < 0.05).

Table 6. Factors associated with self-management behaviors among the study participants

Variables	Self-management behavior	
	r	p
Age	-0,23	0,003
Desease duration	0,12	0,15
Symptom burden	-0,28	0,009

Pearson correlation analysis indicated that self-management was significantly and inversely associated with age (r = −0.23) and symptom burden (r = −0.28) (p < 0.05). No statistically significant association was observed between self-management and disease duration (p > 0.05).

4. DISCUSSION

Overall, the findings indicate that self-management behaviors among patients with COPD were at a moderate level (2.30 ± 0.36), with the majority classified as moderate (74.1%) and only a small proportion achieving a high level (5.1%). This pattern is consistent with existing evidence suggesting that self-management among individuals with COPD remains sub-optimal. A study by Luong Thi Thu Giang et al. (2015) similarly reported a moderate level of self-management (2.72 ±

0.42) [9]. Likewise, studies by Lan (2019) [7] and Khan (2017) [10] have demonstrated that self-management behaviors in COPD populations are often limited or incomplete, particularly when assessed across multiple behavioral domains. At the domain level, daily life management yielded the highest score (2.68 ± 0.45), followed by symptom management (2.48 ± 0.43), whereas information management (2.02 ± 0.59), emotional management (2.14 ± 0.59), and self-efficacy (2.15 ± 0.44) were comparatively lower. These findings are consistent with prior Vietnamese research, in which daily life management was also the highest-scoring domain and information management the lowest [9]. This pattern suggests that patients are more likely to perform routine, practical behaviors that are easier to implement, while experiencing greater difficulty with skills requiring knowledge acquisition, information processing, and psychological regulation. International evidence supports this interpretation. For instance, Khan et al. (2017) reported that although adherence to medication and vaccination was relatively high, only approximately 40% of patients had a structured self-management plan [10].

Regarding the association between sociodemographic characteristics and self-management, no significant differences were observed by sex or place of residence ($p > 0.05$), consistent with findings reported by Lan et al. [7]. In contrast, educational level was significantly associated with self-management, with patients having at least a high school education demonstrating higher scores compared to those with lower educational attainment ($p < 0.001$). This aligns with previous findings [7], suggesting that individuals with higher education levels may have better access to health information and a greater capacity to understand and apply disease-related knowledge. In addition, patients with comorbidity exhibited higher self-management scores than those without ($p < 0.01$). One possible explanation is that these individuals have more frequent interactions with healthcare services, thereby receiving greater support and guidance in disease management. However, this finding is not entirely consistent with some previous studies, which have suggested that comorbidity may increase disease burden and negatively affect certain aspects of self-management [6]. This discrepancy indicates that the relationship between comorbidity conditions and self-management may vary depending on the study context and measurement approaches, warranting further investigation. Similarly, patients with a history of exacerbation-related hospitalization demonstrated higher self-management scores, which may reflect increased awareness of disease severity and greater engagement in self-care practices. This could also be attributed to enhanced health education and support received during inpatient treatment. Correlation analysis further showed that self-management was significantly associated with both age and symptom burden. Specifically, age was inversely correlated with self-management ($r = -0.23$; $p = 0.003$), indicating that older patients tend to have lower levels of self-management. This finding is consistent with previous research [7] and may be explained by age-related declines in physical function, cognitive capacity, and access to health information, which can limit the ability to effectively perform self-management behaviors. Similarly, symptom burden was negatively correlated with self-management ($r = -0.28$; $p < 0.01$), in agreement with findings by Bringsvor et al. [6], who reported that higher symptom burden was associated with poorer performance across most self-management domains. This suggests that as symptoms become more severe, patients may experience reduced capacity to engage in self-care activities, as well as fatigue and decreased motivation, thereby adversely affecting self-management behaviors.

No significant association was found between disease duration and self-management ($p > 0.05$), consistent with previous studies indicating that disease duration alone does not adequately reflect self-management experience. Instead, self-management appears to depend more on the level of education, support, and patients' ability to access and process health-related information [7].

5. CONCLUSION

Self-management among patients with COPD was at a moderate level (2.30 ± 0.36), with higher scores in daily life and symptom management, and lower scores in information and emotional management. Most participants were classified as moderate (74.1%), with only 5.1% at a high level.

Self-management was not associated with sex or place of residence, but showed significant associations with educational level, comorbidity, age, exacerbation-related hospitalizations, and symptom burden, while no association was found with disease duration.

These findings highlight the need for targeted interventions to improve self-management, particularly in enhancing access to information and emotional management, with a focus on older patients and those with greater symptom burden.

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