IJNH

Research Article

Knowledge Regarding Self-Care among Chronic Obstructive Pulmonary Disease Patients in Selected Hospitals of Hisar, Haryana

Uma Rani

Department of Nursing, Syadwad Institute of Higher Education and Research, Baghpat, Uttar Pradesh, India

Abstract

Introduction: Chronic obstructive pulmonary disease (COPD) is a progressive, debilitating respiratory condition and a leading cause of morbidity and mortality globally. According to the World Health Organization (2024), over 390 million people suffer from COPD worldwide, with more than 3.2 million deaths annually. India carries a significant burden, with increasing prevalence linked to tobacco use, air pollution, occupational exposure, and poor health literacy. Self-care practices–such as proper medication adherence, lifestyle modifications, symptom monitoring, and smoking cessation–are vital to controlling disease progression, reducing hospitalizations, and improving quality of life. However, a large segment of COPD patients remains unaware or poorly informed about self-care measures. This study was conducted to assess the knowledge regarding self-care among COPD patients in selected hospitals of Hisar, Haryana.

Methodology: A descriptive cross-sectional study was conducted among 105 COPD patients admitted to selected hospitals in Hisar, Haryana. The purposive sampling technique was used. A 'Structured Knowledge Questionnaire on Self-Care among COPD Patients' tool comprising 25 multiple-choice questions on five sections: Disease Knowledge, Medication Adherence, Lifestyle and Diet, Symptom Management and Smoking Cessation was administered. The tool was validated by a panel of 7 experts, including professionals from nursing, respiratory medicine, public health, and statistics. The Content Validity Index was found to be 0.87, indicating high content validity, and the calculated reliability coefficient was 0.81, indicating high internal consistency. Data were analyzed using Statistical Package for the Social Sciences version 25, applying both descriptive (frequency and percentage) and inferential statistics (Chi-square test).

Results: Among the 105 participants, 68% were male and 32% female. The majority were above 60 years of age. Education levels varied, with 58% having only primary education. Knowledge scores revealed that 62% had average knowledge, 25% had good knowledge, and 13% had poor knowledge. A significant association was observed between knowledge scores and educational status ($P = 0.03$).

Conclusion: Most of the COPD patients had average knowledge about self-care, with noticeable gaps among the elderly and less educated. Tailored health education interventions are recommended to improve disease management.

Keywords: Chronic obstructive pulmonary disease, Haryana, knowledge assessment, patient education, self-care

Date of Submission: 12-07-2025
Date of Revision: 28-07-2025
Date of Acceptance: 16-08-2025

Access this article online
Website: https://innovationaljournals.com/index.php/ijnh
ISSN No: 2454-4906
DOI: 10.31690/ijnh.2025.v011i03.005

Introduction

Chronic obstructive pulmonary disease (COPD) is a progressive respiratory condition characterized by persistent airflow limitation, chronic cough, sputum production, and episodes of exacerbation. According to the World Health Organization (WHO), as of 2021, COPD affects approximately 213 million people globally, around 2.7% of the world's population, and is responsible for 3.65 million deaths, accounting for roughly

Address for Correspondence:
Uma Rani, Department Nursing, Syadwad Institute of Higher Education and Research, Baghpat, Uttar Pradesh, India. E-mail: umarani311021025@gmail.com

5% of all global mortality. It ranks as the fourth leading cause of death worldwide, with nearly 90% of these deaths occurring in low- and middle-income countries.[1] A recent ecological analysis published in 2025 reported 16.9 million new COPD cases and 3.7 million fatalities globally in 2021. The age-standardized mortality rate stood at 45.2/1.00.000 with the incidence rate at 197.4/1.00.000 notably, while absolute case counts continue to rise driven by aging populations and urbanization age-adjusted rates have modestly declined since 1990. Projections indicate that COPD prevalence will increase from around 10.6% in 2020 to approximately 9.5% in 2050, reflecting a significant absolute rise, particularly among women and residents of low- and middle-income countries.[2]

In India, COPD poses a substantial national health challenge. Studies suggest around 30 million people are living with COPD, with prevalence among adults over 30 years exceeding 7% A 2023 analysis estimated a pooled prevalence in India of roughly 11.1%, though regional variations are striking; for instance, rural north Indian sites reported prevalence as high as 19.3% in those over 40 years.[3] India is also among the highest contributors to COPD-related global disability-adjusted life years, accounting for approximately 32% of global disability from chronic respiratory diseases in 2016.[4] These figures underscore a growing public health urgency: COPD remains a leading cause of death and disability both globally and in India. Self-care knowledge and practices covering smoking cessation, correct inhaler technique, management of exacerbations, and environmental exposure are pivotal for improving outcomes, reducing hospital visits, and enhancing quality of life. In regions like Hisar, Haryana, where healthcare delivery and public awareness may lag, assessing and enhancing patient knowledge is especially critical.[5]

COPD is a leading global health challenge. According to the WHO (2024), COPD is the third leading cause of death globally, with over 3.2 million annual fatalities. India bears a significant burden, with COPD affecting 5–10% of the adult population. Risk factors include tobacco use, biomass fuel exposure, and environmental pollution.[6]

Effective management of COPD requires active patient involvement in self-care practices, including medication adherence, symptom monitoring, smoking cessation, and regular physical activity. However, studies indicate that many patients have limited awareness and knowledge about these practices, especially in semi-urban and rural areas.[7]

This study addresses the knowledge gap among COPD patients in Hisar, Haryana, by evaluating their understanding of self-care and identifying key sociodemographic influences.[8]

Study objectives

1. To assess the level of knowledge regarding self-care among COPD patients at selected hospitals of Hisar, Haryana
2. To examine the association between the selected sociodemographic variables and knowledge score.

Methodology

Study design

Descriptive cross-sectional study.

Study setting

Elected public and private hospitals in Hisar, Haryana.

Sample size

The sample size was 105 patients.

Sampling technique

Purposive sampling.

Inclusion criteria

Patients aged over 40 years with a known diagnosis of COPD who are willing to participate were included in the study.

Exclusion criteria

Patients below 40 years, with other comorbidities, and not willing to participate in the study are excluded.

- Tool-I: Demographic question seeking information on the demographic background of COPD patients, i.e.,
  1. Age
  2. Gender
  3. Educational status
  4. Occupation
  5. Smoking habits.
- Tool-II: Self-care knowledge assessment questionnaire.

Knowledge questionnaire that includes 25 questions to assess knowledge regarding COPD disease, medication, lifestyle and diet, symptom management, and smoking cessation. Each question is multiple-choice questions. Each correct response will score 1 mark, and wrong answer will score zero.

Scoring

- Good knowledge: >75%
- Average knowledge: 51–75%
- Poor knowledge: <50%.

Data analysis

Data were analyzed using the Statistical Package for the Social Sciences version 25. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize the demographic characteristics and knowledge levels of COPD patients regarding self-care.

To examine the association between demographic variables and the level of knowledge regarding self-care, inferential statistics were applied using the Chi-square test. This test helped determine whether there were statistically significant relationships between categorical variables and knowledge levels among the participants.

A significance level of $P < 0.05$ was considered for all inferential analysis.

A descriptive, cross-sectional design was carried out by collecting data from 2069/06/24 to 2069/7/24. A hospital-based

 study was conducted in the inpatient and outpatient department (OPD) of medicine in Chitwan Medical College, Teaching Hospital, Bharatpur. Total samples were 182 COPD patients, selected using sample size calculation. COPD patients who were diagnosed with COPD for the past 6 months and were willing to participate were included in the study. COPD patients with critically ill and admitted to the intensive care unit were excluded from the study. From COPD patients, quantitative data were collected using a structured questionnaire interview method.

Results

Table 1 shows that out of 105 participants, 59 (56%) were aged above 60 years, indicating that a majority of the patients suffering from COPD belonged to the elderly age group, which is consistent with the known age-related risk factors for chronic respiratory conditions. Among the total participants, 71 (68%) were male and 34 (32%) were female, which suggests a higher prevalence of COPD among males, possibly due to higher exposure to risk factors such as smoking and occupational pollutants in men. 61 participants (58%) had received only primary education, reflecting a relatively low educational background among the study population, which may influence their awareness and practice regarding self-care in COPD management. 72 participants (69%) resided in rural areas shows that a large portion of the study population belonged to rural settings, where limited access to healthcare facilities and awareness programs may affect disease management and outcomes. A significant number of participants, 78 (74%), reported a history of smoking. Smoking is a major risk factor for COPD, and its high prevalence among the participants underlines the importance of tobacco cessation efforts in reducing COPD burden.

As shown in Table 2, out of 105 COPD patients, 26 (25%) demonstrated a good level of knowledge regarding self-care, disease management, and preventive practices. The majority of participants, 65 (62%), exhibited an average level of knowledge. 14 participants (13%) showed poor knowledge about COPD and self-care practices Figure 1.

Table 3 shows the association between socio-demographic variables and knowledge levels of COPD patients. Among participants aged over 60 years, 10 (17%) had good knowledge, 38 (64%) had average knowledge, and 11 (19%) had poor knowledge (P = 0.07), indicating no significant association. Among male participants, 19 (27%) had good knowledge, 44 (62%) had average knowledge, and 8 (11%) had poor knowledge (P = 0.21), which was not statistically significant. In contrast, a statistically significant association was found with education level: Among those with primary education or below, only 8 (13%) had good knowledge, 40 (66%) had average knowledge, and 13 (21%) had poor knowledge (P = 0.03). Rural residents showed 17 (24%) with good knowledge, 45 (63%) with average knowledge, and 10 (13%) with poor knowledge (P = 0.18), which was not significant. Similarly, smoking history showed no significant association with knowledge level (P = 0.08), with 18 (23%) of smokers having good knowledge, 48 (61%) average, and 12 (15%) poor. These findings suggest that education level plays a crucial role in influencing COPD self-care knowledge.

Table 1: Data frequency and percentage distribution of demographic variables in participants (n=105)

Demographic variable	Frequency	Percentage
Age >60 years	59	56
Male	71	68
Female	34	32
Primary education	61	58
Rural residence	72	69
History of smoking	78	74

Table 2: Frequency distribution of knowledge levels among COPD patients

Knowledge level	Frequency	Percentage
Good	26	25
Average	65	62
Poor	14	13

COPD: Chronic obstructive pulmonary disease

Table 3: Association between respondent level of self-care knowledge and selected demographic characteristics (n=105)

Sociodemographic variable	Good	Average	Poor	p-value
Age (>60 years)	10	38	11	0.07
Gender (male)	19	44	8	0.21
Education (primary or below)	8	40	13	0.03
Residence (rural)	17	45	10	0.18
Smoking history	18	48	12	0.08

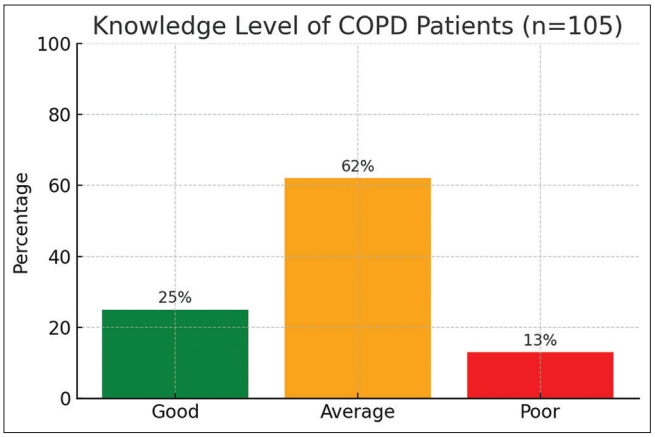

Figure 1: Bar chart showing the distribution of knowledge levels among chronic obstructive pulmonary disease patients

Discussion

This study found that a majority of COPD patients had average knowledge regarding self-care. Patients with higher education levels demonstrated a better understanding of self-care

practices, reinforcing the importance of health literacy as a crucial component in disease management. This suggests that tailored health education interventions, designed according to the educational level and comprehension capacity of patients, could significantly improve self-care outcomes by using visual aids, regional languages, and interactive sessions in OPDs and IPDs can enhance knowledge retention and practice adherence. To further bridge the knowledge gap, customized educational modules addressing specific self-care deficits, especially among less-educated or elderly patients, should be integrated into routine care. Regular follow-ups, caregiver involvement, and distribution of simplified educational booklets could help reinforce learning and promote sustained self-care behavior.

Conclusion

The study concludes that COPD patients in Hisar possess moderate awareness about self-care, with significant gaps among elderly and less educated individuals. Educational efforts tailored to literacy levels and cultural context are essential to improve patient outcomes.

Recommendations

It is recommended that structured and interactive self-care education sessions be routinely organized in both OPDs and inpatient departments (IPDs). These sessions should focus on imparting knowledge regarding disease understanding, medication adherence, lifestyle changes, symptom monitoring, and the importance of smoking cessation. Sessions should be tailored to the patients' educational levels and should include both verbal explanations and visual demonstrations to enhance understanding and retention.

To reinforce the information provided during education sessions, easy-to-understand, illustrated self-care booklets should be distributed to all COPD patients. These booklets should be developed in local languages, using simple language and visual content such as diagrams, charts, and pictograms. The booklets should cover all aspects of self-care and be designed for patients of varying literacy levels, enabling them to refer back to the material at home.

There should be a system in place for the periodic assessment of patients' knowledge and self-care practices. This could involve administering brief knowledge questionnaires, conducting follow-up interviews, or monitoring symptom control and medication adherence. Such evaluations will help healthcare providers identify knowledge gaps, measure the effectiveness of education interventions, and make necessary improvements to the self-care education strategies being implemented.

Limitations

- The study was confined to a few selected hospitals within the Hisar district of Haryana. As a result, the findings may not be generalizable to all COPD patients across other regions or healthcare settings with different demographic and clinical characteristics.
- This research utilized a cross-sectional design, which captures data at a single point in time.
- The study did not include a follow-up component to assess the long-term impact of any educational interventions on patients' self-care behavior.

References

1. Sharma A, Verma P, Kaushik R. Knowledge of COPD patients regarding self-care. Int J Res Med Sci 2022;10:1125-30.
2. World Health Organization. Global Health Estimates of COPD. Geneva: World Health Organization; 2023.
3. Yadav S, Thapa R, Paudel B. Self-care practices among patients with chronic respiratory conditions. Nepal J Med Sci 2021;6:45-51.
4. Alam K, Naghavi M, Ong KL, Aali A, Ababneh HS, A Abate YH, *et al.* Global burden of 288 causes of death and life expectancy decomposition in 204 countries and territories and 811 subnational locations, 1990-2021: A systematic analysis for the Global Burden of Disease Study 2021. Lancet 2021;403:2100-32.
5. Sharma R, Meena N, Dahiya K. Knowledge and practice of self-care among COPD patients. Indian J Public Health 2022;66:123-8.
6. Ghosh S. Self-management in Indian COPD patients. J Pulmonary Med 2021;45:145-50.
7. Ministry of Health and Family Welfare. National Health Profile. New Delhi: Government of India; 2023.
8. Global Burden of Disease Study. Global burden of respiratory diseases. Lancet Respir Med 2023;11:400-15.

How to cite this article: Rani U. Knowledge Regarding Self-Care among Chronic Obstructive Pulmonary Disease Patients in Selected Hospitals of Hisar, Haryana. Innov J Nurs Healthc. 2025;11(3):25-28.