



The Importance of Health Literacy in Chronic Obstructive Lung Disease in Terms of Public Health

Pelin UYAR¹ , Gülay YILMAZEL² , Yasin UYAR¹ 

¹ Amasya Merzifon State Hospital, Clinic of Chest Diseases and Tuberculosis, Amasya, Türkiye

² Hitit University Faculty of Health Sciences, Çorum, Türkiye

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ABSTRACT

Chronic obstructive pulmonary disease is a preventable and treatable disease. The prevalence data of the disease are unevenly distributed around the world and are scarce or absent in many geographic regions. The disease is a serious cause of mortality and morbidity in all societies. At the same time, its burden on the country's economy is an undeniable fact. Studies show that the diagnosis and treatment of chronic obstructive pulmonary disease are inadequate, and patients have difficulties in managing the disease. The importance of health literacy in managing the disease and alleviating symptoms is emphasized in particular. The World Health Organization offers various approaches to raising awareness of health literacy in societies, emphasizing the importance of adult education and health education in early childhood. This review aimed to determine the place of health literacy in the epidemiology of the chronic obstructive pulmonary disease.

Keywords: Chronic obstructive pulmonary disease epidemiology, health literacy, copd

ÖZ

Halk Sağlığı Açısından Kronik Obstrüktif Akciğer Hastalığında Sağlık Okuryazarlığının Önemi

Kronik obstrüktif akciğer hastalığı önlenabilir ve tedavi edilebilir bir hastalıktır. Hastalığın prevalans verileri dünya çapında düzensiz bir şekilde dağılmıştır ve birçok coğrafi bölgede azdır veya yoktur. Hastalık, tüm toplumlar için ciddi bir mortalite ve morbidite sebebidir. Aynı zamanda ülke ekonomisine yükü de yadsınamaz bir gerçektir. Çalışmalar, kronik obstrüktif akciğer hastalığı tanı ve tedavisinde yetersiz kalındığını, hastaların hastalığı yönetmede güçlükler yaşadığını göstermektedir. Özellikle hastalığın yönetilmesi ve semptomların hafifletilmesinde sağlık okuryazarlığının önemine dikkat çekilmektedir. Dünya sağlık örgütü tarafından, toplumlarda sağlık okuryazarlığı bilincinin geliştirilmesine yönelik çeşitli yaklaşımlar sunulmakta, yetişkin eğitime ve erken çocukluk döneminde başlanacak sağlık eğitiminin önemine dikkat çekilmektedir. Bu derleme çalışmanın amacı, kronik obstrüktif akciğer hastalığının epidemiyolojisinde sağlık okuryazarlığının yerini belirlemektir.

Anahtar Kelimeler: Kronik obstrüktif akciğer hastalığı epidemiyolojisi, sağlık okuryazarlığı, koah

Corresponding Address

Pelin UYAR

Amasya Merzifon State Hospital,
Clinic of Chest Diseases and Tuberculosis
AMASYA-TURKEY

e-mail: p.deren28@gmail.com

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INTRODUCTION

Chronic Obstructive Pulmonary Disease (COPD) is defined as a common, preventable, and treatable disease characterized by progressive permanent airflow obstruction and is associated with the increased inflammatory response of the airways and lungs against harmful gases and particles (1). In COPD, the inhaled harmful gases and particles cause an increased inflammatory response in the lungs which leads to parenchymal tissue destruction (emphysema) and deterioration in normal tissue repair

and defense mechanisms (fibrosis in small airways), and these pathological changes result in air COPD and Health Literacy 2 trapping and progressive airflow obstruction. Current data on COPD prevalence has spread irregularly worldwide, and data in many geographic regions are scarce or lacking. Global COPD prevalence has been determined as 13.1% (2). In the PLATINO study conducted in five Latin American countries in 2002, COPD prevalence was detected as 18% in Brazil, 11% in Mexico, 27% in Uruguay, 23% in Chile, and 26% in Venezuela (2). According to the BOLD study from the US, between 2003 and 2012, COPD prevalence in adults aged over 40 years worldwide was found at 20%, and COPD prevalence in Türkiye was found at 19.2%, in a study performed using the BOLD methodology in January, 2004 (3-5). In 2007, the PREPOCOL study conducted in five Colombian cities found COPD prevalence based on spirometric measurements at 8.9% (6). In a study conducted on individuals aged over 40 years in Balçova, İzmir in 2007, COPD prevalence was evaluated with spirometry without a bronchodilator administration ($FEV_1/FVC < 70\%$), and COPD prevalence was 11.8% (7). In a study investigating COPD patients diagnosed between 2012 to 2016, the annual prevalence of COPD increased to 5.8% from 4.3%. While this rate increased to 5.1% from 3.7% in females (38% increase), it increased to 6.7% from 4.9% in males. The highest COPD prevalence in Türkiye is in the Black Sea region (8). According to the "Disability Adjusted Life Years (DALY)" used in evaluating disease load by the World Health Organization (WHO), COPD ranks 13th among the diseases that most frequently cause disabilities. In Türkiye, COPD ranks 11th on the DALY ranking. According to WHO data, COPD is the fourth disease resulting most commonly in death and is expected to be the third in 2020. It is the fourth disease that leads to most deaths in Türkiye, as well (3). Nonetheless, the disease is not sufficiently known, it is underdiagnosed, misdiagnoses are prevalent, and treatment is not given sufficiently. Therefore, major differences have been observed in the awareness of healthcare workers on COPD, the organization of healthcare services regarding chronic diseases, and the data associated with disease load among countries based on the presence of COPD-related drugs (9). According to the data from the Global Disease Load Study, COPD causes 2.9 million deaths annually. In the National Disease Load Study carried out in Türkiye in 2000, COPD ranked eighth with 2.8% in disease load, and COPD prevalence was found at 10.2% (10). The Global Disease Load Study propounded that COPD was the fifth leading cause of lost disabled life durations in 2013 (11). Although COPD is allocated 6% of the total health budget for respiratory system diseases in Europe, it consumes 56% of the total health budget for respiratory system diseases due to its prevalence and increased economic burden in the region (12).

Risk factors in COPD

Genetic Factors: The hereditary deficiency of alpha-1 antitrypsin is the most well-known genetic risk factor for COPD. WHO recommends the testing of alpha-1 antitrypsin enzyme deficiency (AATD) in patients anticipated to have COPD because the incidence of AATD is 1 in 2.000-5.000 live births (13). IL-6 gene is associated with a long time of life in males, the risk is lower in those carrying the IL-6-572c allele, and a significant difference has been identified between healthy smokers and smokers with COPD (14).

Age and Sex: COPD is rarely seen before the age of 40 years. The incidence of the disease increases with advancing age. According to the Chronic Diseases and Frequency of Risk Factors Study of Türkiye, COPD prevalence standardized by age and sex based on SFT results is 5.3%. It has been determined in both SFT results and physicians' diagnoses that COPD prevalence increases with advancing age and COPD prevalence is higher in males compared to females in age groups over 45 years (15). Age has been confirmed as a risk factor for COPD in both PLATINO and BOLD studies. It has been reported in the BOLD study that every 10-year increase in age causes a 1.94-fold increase in COPD risk (2). According to CDC data, COPD has been found more in females, which is related to the fact that there has been an increase in the rate of smoking in females, females live longer and as a result, are at more risk of developing COPD (16).

Lung Growth and Development: Lung development may be affected by factors including the mother's smoking status, nutrition, genetic tendency, weight at birth, active and passive smoking, bronchial hyperactivity, atopy, eosinophilia, and poverty. Encountering COPD more frequently in adults who were born with low birth weight shows that chronic obstructive pulmonary disease starts in the prenatal period.

Chronic Bronchitis: One of the most commonly encountered pathologies in COPD is chronic bronchitis. In a study conducted in the rural region of Kayseri with individuals aged over 20 years using the ECRHS questionnaire, the prevalence of chronic obstructive bronchitis has been found as 13.5% (17.8% in males and 10.0% in females) (17). This condition constitutes a predisposing factor for future COPD cases.

Infections: Infections in childhood lead to an increase in respiratory symptoms in the future. In a study, COPD was seen at a much earlier age in individuals with HIV (18). Tuberculosis has been found to be a risk factor for COPD (19).

Air Pollution, Drug Exposure, and Occupation: High COPD prevalence seen in non-smoker females in the Middle East, Africa, and Asia is the result of bio mass fuels used by

women for cooking purposes. In a study conducted in Tanzania, it has been found that 99.5% of the population uses biomass fuels for cooking (20). COPD prevalence has been found higher in farmers in another study (21).

Tobacco Use: Tobacco use is one of the major public health problems fought worldwide. It has the largest share among all COPD factors worldwide. According to the Turkish Health Research 2016 of the Turkish Statistical Institute, the rate of regular daily tobacco use in Türkiye was 26.5% (22). The disease can be seen in individuals who do not use tobacco, and the conditions vary from person to person (1). Chronic cough, expectorating, and shortness of breath are symptoms of COPD. Even though individuals are in the risk group, the patient may not be symptomatic or may not care for his/her symptoms enough to consult a physician. The acute phase is associated with COPD exacerbation characterized by the worsening of COPD symptoms. The attack may create a life-threatening condition for some patients and necessitates hospitalization and costly lifesaving drugs (23).

Treatment and Protection in COPD

Bronchodilator use is recommended according to the phases of the disease, and patient education and health literacy are important at the same time. Among the individual and social measures to be taken are the prevention and cessation of tobacco use, betterment of health equality, prevention of indoor and outdoor air pollution, prevention of occupational exposure, and increasing regular physical activity and health literacy (1).

Health Literacy

American Medical Association (AMA) defines health literacy (HL) as “the ability to obtain, process, and understand basic health information and services needed to make appropriate health decisions and follow instructions for treatment” (24). Developing health literacy is important for a healthy public and sustainable health system and should be one of the primary objectives of a country’s health policies (25). Health literacy affects community health outputs and health costs over health behaviors and healthcare service use of individuals. An increase in the health literacy level provides an increase in quality of life by ensuring self-determination and empowerment, which in turn fashions equality and sustainability in health and positive health outputs (26). According to a model developed by Sorensen who works in the field of public health, health literacy is influenced by factors including social and environmental determinants such as demographic status, culture, language, political powers, and public systems, by individual determinants such as age, sex, race, socioeconomic status, education, profession, employment, income,

and literacy, and by initial factors including situational determinants such as social support, family and peer impact, media use, and physical environment (27). Low HL may lead to misconceptions about diseases and their prognosis and may cause dissatisfaction with the care given and anxiety. High HL contributes to the individuals’ disease management and leads to significant survival from diseases.

COPD and Health Literacy

Various data have been put forth with studies investigating the importance of health literacy in COPD. In a health literacy study conducted in Nepal, the insufficient health literacy rate of the participants in terms of chronic diseases has been found as 73%. Insufficient health literacy in patients with COPD is associated with low physician appointments in a year and not receiving any health-related and health management education for COPD (28). In a study by Puente-Maestu et al. investigating health literacy and health results in patients with COPD, it has been established that health literacy was insufficient with a rate of 59% in a majority of COPD patients and individuals did not have the necessary control, information, and self-sufficiency over their diseases (29). In a prospective cohort study by O’Connor et al. investigating health literacy in COPD patients and the effects of cognitive abilities on the disease, sufficient health literacy rate has been found at 28.5% and individuals have been found to forget the information they have received during the recommended educations and not use their medications regularly. This situation attracts attention to the continuity of education in health literacy (30). Sufficient health literacy has been associated with sufficient compliance with COPD drugs. In a study by Türe et al. conducted in Bursa investigating the relationship between health literacy and COPD expenses, it has been determined that the total cost of healthcare services and cost of emergency service admission are higher in individuals with low health literacy compared to those with a significantly serious course of the disease. This situation shows that there is a major relationship between the individuals’ knowledge of the disease and health literacy (31). In a study evaluating COPD awareness in individuals addicted to smoking, it has been found that individuals did not sufficiently know COPD but had a midlevel awareness of factors that have a role in the development of COPD (32). A thorough understanding of the factors that contribute to COPD is a critical component of disease awareness. In another study investigating health management in patients with COPD, the level of COPD website use of two groups for a period of 3 and 12 months has been investigated, and it has been observed that 80% of the study group fulfilled the physical activity require- COPD and Health Literacy during the first month but

a decrease was seen at the 12th month. It has been emphasized that it is vital to sustain and continue the state of being in good health (33). In China, it has been detected that 86.1% of patients with COPD do not manage their disease well, and it has also been stressed that health education is important and required to continuously increase health literacy (34). Health management related to the use of COPD apps has been questioned in a study conducted in Toronto. In the study, an application has been developed to follow O₂ saturation and heart rate and tell individuals how to react in critical situations. This application demonstrated that various difficulties people face on a daily basis can be avoided, and people searched the internet for answers to their questions. It has also been found that expectations towards the physicians decreased and individuals felt more self-sufficient about their disease (35). In a study by Ding et al. in which patients have been observed for six months and the health application program has been used, education videos, COPD symptoms, physical activity, and inhaler use have been aimed at increasing health literacy and proper inhaler use of the patients (36). Health literacy education to be given to patients with COPD would prevent anxiety in these patients, increase life quality, and have a key role in the management of problems that arise during symptoms and exacerbations. Thus, it would have a direct impact on healthcare costs. There is an e-health application for COPD in Türkiye. However, this application has been developed for healthcare professionals and does not include patient information or patient guidance (4). Applications oriented at COPD patients to treat symptoms and improve life quality are necessary both for patients and public health. A multidisciplinary medical approach combined with cross-sectoral collaboration would therefore improve patient symptom control, recognition of exacerbations, and prompt physician consultations.

CONCLUSION

Health literacy level is insufficient in COPD patients as in all chronic diseases. Primary healthcare services play a key role in increasing health awareness. Health literacy is an important part of preventive healthcare services and thus, health education must be planned to address all age groups. In institutions where curative healthcare services are provided, education before discharge from the hospital should be given to individuals on correct drug use and symptom management. WHO recommends that individuals receive education on health literacy and the concept of improving health in early childhood, that multi-directional programs be implemented based on the characteristics and capacities of the individuals, that participant education methods be used, and that participants actively participate in their education (37).

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