

# Effects Of Social-economic And Demographic Features Hospital Admission For Patients With Chronic Obstructive Pulmonary Disease In Istanbul

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## Abstract

We aimed to obtain descriptive data about patients with chronic obstructive pulmonary disease (COPD). In addition, we investigated the correlation of these features with the frequency of hospital admissions.

We evaluated descriptive data (smoking habits, education, economic status, living condition, using regular medications, etc.), and hospital admissions of 75 patients with COPD means of a standard questionnaire form. The mean age was  $65,8 \pm 9,7$  (41-84) years, smokers ratio was 17,3%. Education level was high school in 58,7% of the patients, and 28% of the patients had an income of less than 3070 Euro/year. Of these, 52% of patient had home nebulizer, and 21,4% used home oxygen therapy. Admission rates to hospital were higher in-patients who were fewer smokers and/or had poor education and/or had lower income and/or were using stove for warming up their houses. Patients taking medicine regularly admitted to hospital more than the others did. However, these patients admitted to emergency room less than the others did. Frequency of hospital admissions of patients who had medical equipment at home was higher than the others.

In Conclusion, we have to give information to patients not only about principals of medical treatment of COPD, but also the ways of improving the living condition.

## INTRODUCTION

Chronic Obstructive Pulmonary Diseases (COPD) is a progressive illness that decreases the functional capacity of patient in years; causing difficulty in daily activities. The patient will have to face several difficulties such as mental, social, sleeping, nutritional, fatigue and emotional problems that makes living harder.

COPD is a costly public health problem due to its high prevalence. Direct costs are due to hospital admissions and expensive treatments such as long-term oxygen, whereas indirect costs include loss of working capacity and poor quality of life (1). To give the ability of carrying on social activities and to reduce hospital admissions of patient takes

an important place in the target of approach and treatment of clinical illnesses in perceptive of current modern science. For this reason, different opportunities are submitted to increase the quality of life and the possibility of treatment away from the hospital. In COPD the living conditions of patient is pretty important both in process of illness and admission to hospital. Recently an important improvement in quality of life is obtained by informing the patient about COPD, single-handed medical equipment and respiratory exercises.

In our study, we aimed to prepare a documentary of patients different characteristics such as living conditions, monthly salary, whether they have medical equipment like nebulizer,

oxygen tube or concentrator at home. In addition we searched effects of these features to hospital admission and hospitalization

## **MATERIAL AND METHOD**

From September 1998 to February 1999, 26 women, 49 men total 75 patients with COPD were taken into study. COPD diagnosis was set according to American Thoracic Societies criteria's (2). A standard evaluation form which includes 20 questions, smoking habits, social, economic and demographic characteristics, whether they take any medications regularly, medical equipment at home (nebulizer, oxygen tube, concentrator) and condition of patients during hospital admission, was filled out by doctor. It was excluded that patients who came to routine control or no complaints.

Data for results were expresses mean ( SD and the level of significance was 0.05. Pearson's Correlation test and Student t test were used for analyzing the relationship between patient characteristics and hospital admission and hospitalization.

## **RESULTS**

Out of 75 patients 26 (34.4%) was female, 49 (65.3%) was male, and the mean age was 65.8(9.7 (41-84). It is shown distribution of ages of patients at figure 1. We have obtained most cases (85.5%) from retirement health care foundation. Of these in 26 female only 2 were smokers, in 49 male 11 were smokers. Number of cigarette mean per day was 20.8(6.4 (10-33), mean smoking year was 38.8(14.0 (6-65). Our patients of 29 (38.7%) were passive smokers. The education level of 7 (9.3%) was illiterate, 3 (4.0%) literate, 8 (10.7%) primary school, 9 (12.0%) secondary school, 35 (46.7%) high school, 13 (17.3%) university graduates. Of these 54 (72.0%) was married, 18 (24.0%) were widow, 3 (4.0 %) were single.

Most of cases (90.66 %) were non-active workers. Of patients 5 (6.7%) had income of 30 million Turkish Lira(/month and under, 3 (4.0%) patients had income 31-50 million Turkish Lira/month, 13 (17,3%) patients had income 51-100 million Turkish Lira/month, 32 (42.7%) patients had income of 101-200 million Turkish Lira/month, 22 (29.3%) patients had income of 201 million Turkish Lira/month and over.

Of cases 63 (84.0%) owned their houses. Ten (13.3%) patients lived in rental houses. One of patients was living in

a retirement home and one of patients was living with his son in son's house. Of cases 61 (81.3%) was living apartments and 12 (16.0%) detached houses. Patients who live apartments 3 of them were living at ground floor, 9 of them were living at rooftop, and 49 of them were living in the other flats. Of these 52 (69.3%) had central heating, 23 (30.7%) had stove for heating in their houses.

Most of cases (63 patients) took medicine regularly. Of the cases 39 (52.0%) had home nebulizer, 11 (14.7%) had oxygen tube and 5 (6.7%) had oxygen concentrator at home.

Of patients 14 (18.7%) admitted to hospital 10 times over in last one year. While of cases 39 (52.0%) were not admitted to emergency room in last 1 year, 9 (12.0%) admitted to emergency room 5 times over in last 1 year. The mean hospitalization period was 23.4(19.7 (4-90) days.

The reasons of effect to hospital admission and hospitalization are shown at table I. We determined that patients who were fewer smokers, had poor education level, had stove for heating in their house, had insufficient salary/month, taken their medicine regularly and who had medical equipment at home were admitted to outpatients service of the hospital frequently (table II). Patients who had been living at home alone, had insufficient salary/month, had medical equipment at home, had not taken medicine regularly admitted to emergency room frequently (table III). Patients who had insufficient salary/month, had a smaller and/or detached house, had medical equipment at home and had stove for heating in their house admitted to hospital more frequently (table IV). Patients, who had poor education degree, had stove for heating in their house and had shorter period of disease had hospitalization time longer than the others (table V).

## **DISCUSSION**

COPD, which includes chronic bronchitis and emphysema, is characterized of airflow limited, and thought that it is different from the bronchial asthma. The disease is a major cause of morbidity and mortality (3). In the course of chronic illnesses, in addition to the characteristics of the illness, living conditions, adaptation to treatment, social-economic factors of patients is in confidential.

COPD generally appears in elderly ages. The mean age was 65.4(9.6 in our study. Kartaloglu et al. (4) found that the mean age of their series of 100 cases was 61.5(10.5, Sevim et al (5) found that the mean age was 59.0(7.0 in their study

in Turkey. Higher prevalence of COPD among men is the likely explanation for more exposition to predisposing factors. In our study, the female/male ratio was 1/2. This ratio was around 1/4, 1/5 in other Turkish studies (4,5), though 1/1 was the ratio in other countries. Of 48.3 female course (close to 1/1) was stated in a study made in USA (6). Though the smoking habit is one of the important factors for COPD. Also small populating of female smoker was in our country. In our patients, rate of smoking habit was 17.3% (13 cases) and in female patients rate was 7.7% (2 cases). Of the cases 29 (38.7%) were passive smokers. Sevim et al.(5) found the ratio of smoking was 41% and Poole et al (7) found 33.3% in 80 patients. The patients who were active smokers admitted to outpatient service of hospital infrequently. We suggested that these patients were retiring for their exams because of the doctor prohibit smoking.

We found that the education level of patients was 76.0% secondary school and over. In asthmatic cases, Ege et al. (8) reported that education level of patients was 36.6% secondary school and over. In-patients with COPD, Kartaloglu et al. (4) obtained that education level was 38.0% secondary school an over. This differentiation would be come from aim character of study centers. We observed that patients whose education level was lower had admitted to outpatient service of hospital frequently, and their hospitalization periods were longer. In our other study, it determined that the patients who had high education level had neglected their health (9). We considered that patients with COPD when the education level increased their admission to hospital were decreased.

Physico-social factors are also important in COPD as it is in bronchial asthma. Most of our cases were married (72.0%), 19 of them (25.33%) were live alone. Poole et al.(7) have clarified the rate of single-living as 45% in their study in New Zealand. The patients who were living alone admitted to emergency more frequently in our study. We estimated that patients with COPD who live alone had death phobia.

Generally, patient with COPD had progressive hypoxemia. Because the hypoxemia make cell damage, supplemental oxygen must give to patients. Our patients of 16 (21.4%) used oxygen at home, addition, we determined that patients of 39 had home nebulizer. Poole et al. (7) had clarified 45% cases were used nebulised drugs regularly. In our study, there was no different admission to hospital between used oxygen at home or not. Furthermore, it was observed that patients who had oxygen at home admitted to emergency

room more frequently. We accepted that the patients who had medical equipment were severe COPD. It was considered that the patients who had medical equipment admitted and hospitalization frequently due to could not use it sufficiently. Patients need to learn how to use their medical equipment.

It was obtained that most of patients took their medicine regularly. But there was no significant correlation between education level and took medicine regularly. Ege et al. (8) reported that asthmatic patients of 45.5% did not take medicine regularly and taking medicine regularly has connection with level of education. In our study, patients who took medicine regularly admitted to hospital frequently, but they admitted to emergency room infrequently. These patients had awareness of their disease and perfect following by doctor.

Most of our cases were house-owners along with a standard income and had central heating. In asthmatic cases, Turker et al.(10) have clarified the mid-flats users as 59%, shanty as 33%, ground-floor as 6%, roof top as 2% and 88% of these houses were heated by stoves. We have stated the social-economic conditions of our cases were generally above the country standards. It was determined that patients had an insufficient income admitted to hospital and emergency room and hospitalization frequently. Prevalence of COPD increased at people had insufficient level of social-economy.

If the patients follow insufficiently by doctor and have inadequate medical therapy, their disease gets worse. In our study, patients had admitted to outpatient service of hospital for their complaints approximately 6 times in 1 year. Addition, they admitted to emergency room for acute exacerbation 1-2 times in a year. Vilkmann et al (11) reported that male patients with COPD increased necessity of medical therapy after 50 years old. It was determined that education level, income level were important connection with admission to hospital, and social-economic factors were important developing COPD in early period of life in Denmark (12). In our study, age of patients and sexuality was not affected to hospital admission, but social-economic factors were effect meaningfully.

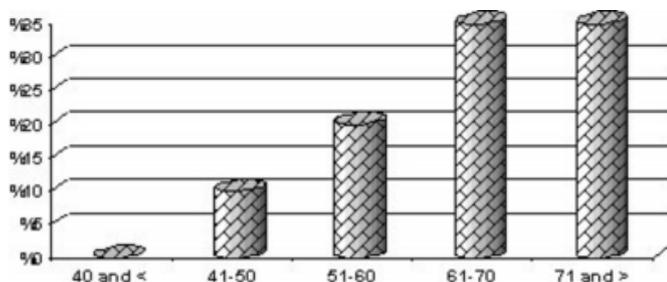
As a result, we found that life style of patients with COPD and had medical equipment effected to their admission to hospital. Thus, it was encouraged that they constituted ideal place for their life. We considered that should help them to obtain medical equipment, how to use them, and give

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information about their disease.

**Figure 1**

Figure 1: Distribution of ages of patients



**Figure 2**

Table I: Effective factors to hospital admission and hospitalization in COPD

FACTORS	Admission to outpatient service of hospital	Admission to emergency room	Admission to hospital	Hospitalization period
Age	No effective	No effective	No effective	No effective
Sex	No effective	No effective	No effective	No effective
Education level	Effective (p=0.002)	No effective	No effective	Effective (p=0.04)
Smoking time (year)	Effective (p=0.05)	No effective	No effective	No effective
Cigarette/day	Effective (p=0.04)	No effective	No effective	No effective
Marital Status	No effective	No effective	No effective	No effective
Number of people at home	No effective	Effective (p=0.05)	No effective	No effective
Passive Smoking	No effective	No effective	No effective	No effective
Income	Effective (p=0.0001)	Effective (p=0.0001)	Effective (p=0.0001)	No effective
Rental House	No effective	No effective	No effective	No effective
Apartment or detached house	No effective	No effective	Effective (p=0.001)	No effective
Size of house	No effective	Effective (p=0.04)	Effective (p=0.0001)	No effective
Stove or central heating	Effective (p=0.001)	No effective	Effective (p=0.004)	Effective (p=0.002)
Period of the disease	No effective	No effective	No effective	Effective (p=0.04)
Take medicine regularly	Effective (p=0.0001)	Effective (p=0.02)	No effective	No effective
Medical equipment at home	Effective (p=0.05)	Effective (p=0.02)	Effective (p=0.01)	No effective

**Figure 3**

Table II: Effective factors to admission to outpatient service of hospital

FACTORS	Frequently admission	Infrequently admission
Education level	poor	higher
Smoking time (year)	shorter	longer
Cigarette/day	fewer	more
Income	lower	higher
Stove or central heating	stove	central heating
Take medicine regularly	regularly	irregularly
Medical equipment at home	yes	no

**Figure 4**

Table III: Effective factors to admission to emergency room

FACTORS	Frequently admission	Infrequently admission
Number of people at home	alone	no alone
Income	lower	higher
Size of house	small	large
Take medicine regularly	irregularly	regularly
Medical equipment at home	yes	no

**Figure 5**

Table IV: Effective factors to admission to hospital

FACTORS	Frequently admission	Infrequently admission
Income	lower	higher
Size of house	small	large
Apartment of detached house	detached house	apartment
Stove or central heating	stove	central heating
Medical equipment at home	yes	no

**Figure 6**

Table V: Effective factors to hospitalization period

FACTORS	Long Period	Short period
Education level	poor	higher
Period of the disease	shorter	longer
Stove or central heating	stove	central heating

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