

The Importance of Occupational Medicine Outpatient Clinics; a Single Center Experience in Turkey

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ABSTRACT

Objective: The specialty of occupational medicine is newly developing in Turkey and the number of specialists and the specialty clinics are very few. The aim of this study is to present the first two-year data of an occupational medicine outpatient clinic. This clinic is unique as it is the first outpatient clinic in a secondary health care center in Turkey (except dedicated occupational disease hospitals), and the first residency-trained occupational medicine specialist in Turkey was running this clinic. The data will be compared with national numbers in order to show if these clinics make a difference in diagnosis and notification of occupational diseases.

Materials and Methods: The data is collected from the hospital database between 2017 August to 2019 August who applied to Occupational Diseases Clinic in the hospital. Only the patients who were referred by a physician or applied themselves with suspicion of an occupational disease are included to the study. The patients who applied for periodic examinations, fitness for work evaluations are not included.

Results: A total of 491 patients were included to the study. 444 of them did not have a prior diagnosis of occupational disease. Of these patients, 162 (36.4%) were diagnosed with an occupational disease. 42.6 % of these diagnoses were pneumoconiosis.

Conclusion: Occupational diseases are underdiagnosed and/or underreported in Turkey. A single center dedicated to occupational diseases made a substantial increase in the number of occupational diseases in two years. In conclusion, these clinics would help improving recognition of occupational diseases.

Keywords: Occupational diseases, occupational medicine specialty, notification of occupational diseases.

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INTRODUCTION

Occupational diseases cause a significant public health burden [1]. Official reports and researches indicate that they are substantially underdiagnosed, globally [2]. Occupational medicine is a newly developing specialty in Turkey and the first duty of this specialty is to diagnose and notify occupational diseases. Turkey has a compensation-based occupational disease surveillance system which is run by Social Security Institution (SSI) [3]. Notifying occupational diseases is mandatory by law [4]. There

are 2 dedicated occupational disease hospitals in Turkey, Ankara and Zonguldak. In addition to these hospitals, all state university hospitals and training and research hospitals are authorized for notifying occupational diseases to SSI [3]. Workplace physicians, family physicians, specialists in secondary care hospital are not allowed to notify to SSI directly, but they must refer the suspected occupational diseases to the authorized hospitals [3]. Despite the fact that, notification is mandatory,

underreporting is very common. In a country with 80 million population and 30 million workers, the number of compensated cases by SSI in 2016 is 597 [5]. The reported number from hospitals is not officially announced, but it is estimated to be approximately 5000 per year. This number is a huge underestimate, according to the literature we should expect 4-12 occupational diseases per 1000 workers [6]. For 30 million workers the number should be between 120.000-360.000 per year. In their study, Kalayci et al. estimated approximately 500 thousand diseases should be related to work, in one year [7].

When the recording and notification system was established in Turkey, there were no residency trained occupational medicine specialists in the field. The system was conducted through experienced physicians and occupational disease hospitals. However, the first occupational medicine specialist is graduated in 2017 and in practice for 3 years. New occupational medicine specialists have graduated and approximately 40 residents are on the way.

In this study, we want to evaluate the two-year data of this first occupational medicine clinic ran by a residency-trained occupational medicine specialist. We will compare the data within Turkey, from previous year's data without such a dedicated clinic in order to understand if these clinics make a difference and improve notification. If there is an improvement, we can propose increasing the number of occupational medicine specialists and these dedicated clinics.

MATERIALS and METHODS

This is a descriptive study which was accomplished in 2019 by retrospective assessment of medical files of patients who applied to Occupational Outpatient Clinic Yunus Emre Hospital, Eskisehir, Turkey between June 2017 and Augustus 2019. The written administrative permissions were received before the study and the study was conducted in accordance with the Declaration of Helsinki.

All patients who were referred with suspicion of an occupational disease by workplace physicians, family physicians and specialists from secondary care health centers; the patients who applied by themselves; and the patients with a previous diagnosis of an occupational disease and applied

for follow-up are included to the study. The patients who applied for fitness for work and periodic examinations are not included. Data were collected from medical files of hospital electronic database system. Demographic data, occupational history, diagnosis and some imaging findings are recorded.

RESULTS

In two years, a total of 493 patients were admitted to the occupational medicine outpatient clinic. 2 patients are excluded because of missing data. The study was conducted with 491 patients. The flow diagram of the study is given in figure 1.

The study group was consisted of 437 (89%) males and 54 females. The average age of the whole group was 42.14 ± 8.97 . Approximately half of the patients were smoking and working duration was 11.6 years for the group. The demographic characteristics of the study group is given in table 1.

Workplace physicians referred 188 (38.2%) of the patients. 176 of them were referred by specialists working in a hospital and 153 of these were pulmonary medicine specialists. The distribution of referral centers is given in table 2.

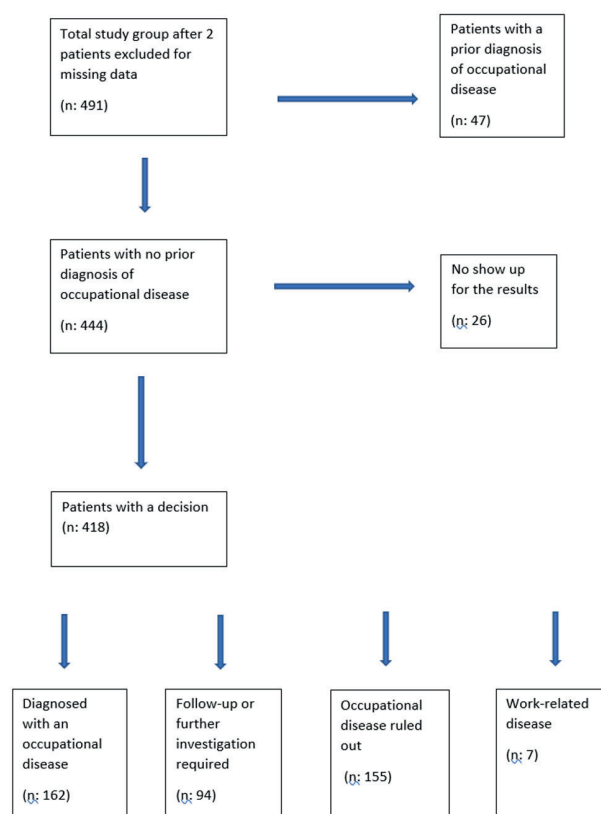


Figure 1. The flowchart of the study

Table 1. Demographic characteristics of the patients

		All patients	Patients who received an occupational disease diagnosis
Age	(years)	42.1±8.9	41.3±9.4
Gender	Male n (%)	437 (89%)	139 (85.8%)
	Female n (%)	54 (11%)	23 (14.2%)
Smoking cigarettes	n (%)	272 (55.3%)	92 (56.7%)
Working duration	(years)	11.6±8.38	10.6±8.9
Total		491 (100)	162 (100)

Table 2. The distribution of centers referring patients to our clinic

The center	All patients n (%)	Patients who received an occupational disease diagnosis n (%)
Workplace physician	188 (38.2)	41 (25.3)
Specialist referral	176 (35.8)	65 (40.2)
Individual application	110 (22.4)	54 (33.3)
Disability medical board	13 (2.6)	1 (0.6)
Courtroom	4 (0.8)	1 (0.6)
Total	491 (100)	162 (100)

In the study group, 47 patients had a prior diagnosis of an occupational disease. All of them were male and had pneumoconiosis. 32 (68%) of them were working in ceramics industry.

444 patients had no history of occupational disease at the time of admission. 26 of them did not show up for the results assessment. Therefore, a decision was made for 418 patients. For 155 (37%) of these patients, an occupational disease was ruled out. 94 patients were required a follow-up between 6-12 months. 7 patients were diagnosed with a work-related disease.

162 patients (38.7%) were diagnosed with an occupational disease. Of these patients 23 were female and 139 (85.8%) were male. Average working time was 10.69±8.38 years for this group. 92 of them were smoking and 15 of them quit smoking. 41 (25%) of them were referred by workplace physicians and 65 of them were referred by specialists in the hospital. 52 patients were working in ceramics industry and 48 were from metal industry. The sectors in which the study group are working is given in table 3.

Of these patients, 72 were diagnosed with pneumoconiosis, 27 had heavy metal poisoning, 23 of them had musculoskeletal disease and 12 had occupational asthma. The diagnoses of this group are given in table 4. For all these patients, a medical evaluation report was prepared and then they were

referred to an authorized healthcare center for notification.

All patients were exposed to a mix of hazards. The main exposure was silica exposure (66.2%). Welding fumes, heavy metals, and ergonomic hazards were other exposures.

According to the Eskisehir city Social Security Center there were 17 suspected cases referred to an occupational disease hospital in 2016 (a year before the occupational medicine clinic). Direct notification of an occupational disease from this city was 0 in 2016 [5].

DISCUSSION

We evaluated two-year data of the first occupational medicine clinic in a secondary care hospital, ran by the first residency-trained occupational medicine specialist, in Turkey. Local newspapers and official website of the hospital made public announcement of the clinic. However, total number of patients are relatively few when compared to occupational diseases hospitals. Many factors may contribute to this, but the most important factor is the hospital was unauthorized for notification of occupational disease which caused hesitation of workplace physicians to refer to this hospital. Other factors may include; reluctance of employees with the fear of losing their jobs, the employers' perception of

Table 3. Distribution of patients according to the industry

Sector	All patients	Patients who received an occupational disease diagnosis
	n (%)	n (%)
Ceramics industry (sanitaryware)	177 (36.0)	53 (32.7)
Metal industry	65 (13.2)	37 (22.8)
Brick, tile, roof tile, porcelain, cement, marble manufacturing	53 (10.7)	10 (6.1)
Metal manufacturing (aviation, automotive, railways, other)	47 (9.5)	21 (12.9)
Service sectors	42 (8.5)	13 (8.0)
Mining	30 (6.1)	5 (3.0)
Glass manufacturing	18 (3.6)	3 (1.8)
Other sectors	59 (12.0)	20 (12.3)
Total	491 (100)	162 (100)

Table 4. Distribution of occupational disease diagnoses

Diagnosis	n (%)
Pneumoconiosis	80 (49.3)
Heavy metal poisoning	26 (16.0)
Musculoskeletal disease	23 (14.1)
Occupational dermatoses	13 (8.0)
Occupational asthma	10 (6.1)
Noise induced hearing loss	4 (2.4)
Other	6 (3.7)
Total	162 (100)

economic loss when declaring a workplace hazard and unawareness of physicians about occupational diseases [8].

The main advantage of this dedicated clinics was the relatively more time to obtain occupational history. This allowed the physician to diagnose many occupational diseases only by history taking. Many studies emphasized the importance of occupational history taking [9-11]. Another important advantage is that, this clinic, as being a local center, evaluated the workers in the city they lived. Our results show that for approximately 40% of the workers an occupational disease diagnosis was ruled out. This removed an unnecessary economic and psychological burden over the workers and the employer. The follow up examinations are also made in the same clinic.

Specialist referrals were coming mostly from pulmonary medicine specialists. This may be caused by the main sectors and diseases related to the exposures in those sectors are related to pulmonary medicine. But it may also be caused by the knowledge and awareness of pulmonary

medicine specialists about occupational diseases. It is interesting that family medicine specialists referred very few patients, despite all the family physicians in Eskisehir received occupational medicine training and informed about the new occupational medicine clinic. This issue was discussed in many articles and they suggest further training in order to increase awareness of family physicians [2, 12, 13].

The main sector where occupational diseases are mostly seen was ceramics industry. It is not clear if this is caused by that they are the most hazardous industry or their awareness is high and referring their patients? Pneumoconiosis in ceramics industry is vastly investigated in the literature [14, 15]. However, many studies show that occupational diseases are found if they are looked for. Acute pneumoconiosis in denim sandblasters was a good but unfortunate example for this [16]. Therefore, trainings should be provided to the employers and employees of other potential hazardous sectors in order to find out hidden occupational diseases in those sectors [17].

When the data of Social Security Institution is investigated, it is seen that there was not any notification of an occupational disease in 2016 [5]. There is an authorized center for notification of occupational diseases in the city (a university hospital), however, they did not make a notification. There is no dedicated occupational medicine clinic in that hospital.

Limitations of The Study

The study is an observational study; therefore, it does not allow us to make causal assumptions. Another limitation is that it compares the compensation data of SSI with the data of an outpatient clinic. However, there are no formal data other than SSI's compensated case numbers.

CONCLUSION

Our single center experience shows that dedicated outpatient occupational medicine clinics are very important for notification of occupational diseases. The 162 diagnosis in two-years, in the dedicated occupational clinic (despite the authorization problem) clearly shows that these clinics make a difference. These clinics also provide local solution for employers and employees which removes the economic burden of going to another city. These clinics should be in main cities countrywide and the infrastructure (such as manpower, laboratory support) should be empowered.

CONFLICT of INTEREST STATEMENT

The authors declare that there is no conflict of interest.

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