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Awareness of occupational diseases among research assistants working in a medical faculty hospital: An exploratory study on a neglected area

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Abstract:

INTRODUCTION: Occupational diseases are conditions that are preventable and that are actually frequently encountered by physicians in daily practice. The present study, involving research assistants working in a medical faculty hospital clinic where there is the potential to diagnose occupational disease measures, aimed to analyze their level of awareness of the diagnosis, treatment, and monitoring of occupational diseases.

MATERIALS AND METHODS: This is a descriptive study, for which an exploratory survey was administered to 126 resident physicians in a medical faculty hospital. The survey items were related to the physicians' knowledge of the definition of "occupational disease," whether they took work and occupational history in daily practice, the status of diagnosis of occupational diseases in their own fields of specialization and the procedure followed in the event of a diagnosis, and their opinions of the significance of diagnosing occupational diseases.

RESULTS: Among the participants, 77 (62.1%) were found to ask the patients about their occupation, with the reasons given for not doing so being stated as patient load and busy schedule by 16 (12.9%) and limited time by 9 (3%) of the participants. Approximately 60% of the participants were able to define the term "occupational disease," however, only 37.9% were aware of the laws on occupational health and safety.

CONCLUSIONS: The findings indicate that there is a significant lack of knowledge on occupational disease in medical education. As such, education should be provided during both medical school and specialization training regarding the duties, powers, and responsibilities of physicians related to occupational diseases.

Keywords:

Awareness, education, medical school education, occupational diseases, residency education

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Introduction

Occupational diseases are preventable, and so it is important to determine whether or not a disease is work related. This makes it possible to eliminate the occupational conditions or factors that cause the disease and to prevent disease continuation/exacerbation. This contributes to the treatment of the individual, and also protects the health of other employees who encounter the same conditions or factors, leading to a healthy workplace.

The primary duty of physicians is to prioritize preventive medicine practices, as well as treating the disease. In this sense, it falls within the medical and ethical responsibility of physicians to diagnose an occupational disease. The legal framework formed by various laws, such as law no: 5510, law no: 6331, and Turkish Criminal Code in our country, holds physicians legally responsible for the diagnosis of occupational diseases.[1,2]

It is known that approximately 30% of the population of Turkey is able to work, with the number of insured workers over 20 million in 2019 according to SSI Statistics.[3] Although it varies from country to country, it has been reported that 4–12 new occupational diseases can be expected per thousand workers every year.[4] Considering such rates, there is a high likelihood that a disease presenting to a health-care institution with any health condition will be work related.

A number of criteria have been defined for the diagnosis of occupational diseases. Accordingly, it is critically important to learn the occupational history and to identify any occupational hazards in a patient to establish the possible relationship between the disease and the occupational exposure.[5]

The present study, involving research assistants working in clinics where there is the potential to diagnose occupational diseases at Dokuz Eylul University Medical Faculty Hospital, aimed to assess their level of awareness of the diagnosis, treatment, and monitoring of occupational diseases.

Materials and Methods

This descriptive study was conducted as a student education and training project for 3rd-year medical faculty. Hence, the researcher group consisted of these students. The study population consisted of all resident physicians working in clinical disciplines other than the pediatrics and some surgical fields in Dokuz Eylul University Medical Faculty Hospital Hospital. Specialties that have a more frequent relation with occupational diseases (pulmonary medicine, public health, internal medicine, otorhinolaryngology (ORL), ophthalmology, neurology, dermatology, physical therapy and rehabilitation (PTR), and family medicine specialists) were targeted in this study. No sampling was made. Volunteers were accessed at their working units, i.e., their places of duty, and after being informed about the research, the resident physicians who verbally agreed to participate in the survey were included in the study. The authors created the questionnaire with the knowledge from previous studies and review articles.[6,7] The answers were multiple choice or open ended.

Prior to the survey, the researcher group was provided with theoretical education in topics related to the research purpose, after which the survey items were determined. The created survey was administered to 30 people by the researchers in a pilot study. This group did not participate in the study. After the suggestions and modifications, the final questionnaire is created with 19 statements about the demographic data of the physicians, such as age, gender and field of specialization, information on their duration as a resident or physician, as well as their knowledge of the laws related to occupational health and safety in Turkey, the definition of occupational disease, whether they took the work and occupational histories of patients in daily practice, the status of the diagnosis of occupational diseases in their own field of specialization and the procedures followed in the event of such a diagnosis, and their opinions on the significance of diagnosing occupational diseases. The researcher group was divided into four groups of two persons each who went to the planned units and conducted face-to-face interviews with the participants. The survey was administered upon the verbal consent of participants, who were informed through a standard form.

The statistical analysis was made based on the mean, median, minimum-maximum, and standard deviations of the collected data. For descriptive findings, numerical variables were expressed as numbers and percentages. The data were analyzed using the PASW Statistics for Windows (SPSS Inc. version 18.0, Chicago, Illinois, USA) software package. This study was approved by the ethical committee of the institution (September 03, 2018–May 05, 2018).

Results

Among the total 201 resident physicians and subspecialty resident physicians working in clinical disciplines other than the pediatrics and surgical fields in Dokuz Eylul University Medical Faculty Hospital Hospital that composed the study population, 124 (62%) physicians agreed to participate in the research. The distribution of the study participants by departments is presented in Table 1.

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The mean age of the cases was 27.43 ± 2.05 (25–37) years, 54.8% (n = 68) cases were males, the median graduation year was 2015 ± 2.15 (2005–2017), and the median duration of residency was 2.00 ± 1.08 (1–5) years.

When the participants were asked the name and date of the law covering the "occupational health and safety," 47 (37.9%) responded with law no: 6331, 40 (32.5%) said law no: 6547, 21 (16.9%) said law no: 5510, and 13 (10.5%) said law no: 657. The definition of "any disease developed as a result of an exposure to risk factors arising from work activity" was responded to as occupational disease by 74 (59.7%), occupational accident by 27 (21.8%), occupational health by 2 (1.6%), work-related disease by 2 (1.6%), pneumoconiosis by 2 (1.6%) participants, and as an infectious disease, an occupational accident-occupational disease, and as a work-related and occupational disease by 1 (0.8%) participant each [Table 2].

Among the participants, 77 (62.1%) stated that they inquired about their patients' occupations during the examination compared to 47 (37.9%) who did not. The reason for not asking patients their occupation was stated as patient load and busy schedule by 16 participants (12.9%), limited time by 9 participants (0.3%) and forgetting by 7 participants (5.6%), while 6 (4.8%) asked when necessary, and in case of certain indications, 5 (4%) did not consider it necessary, 2 (1.6%) were thought that not every disease is occupational, 1 (0.8%) thought that there was no occupational disease in the field, and 1 (0.8%) considered it a waste of time [Table 3].

Of the total, 43 (34.6%) participants stated that they regularly took occupational history, 30 (24.2%) of whom asked about previous jobs, 38 (30.6%) about the position/duties of the patient, 16 (12.9%) about the materials and chemicals used, 21 (16.9%) about the total time working in their job, and 18 (14.5%) about the environmental risk factors. While 102 (82.3%) of the participants claimed that occupational diseases occur in their field of specialization, 21 (16.9%) believed there to be no occupational diseases related to their field. Of those who believed there to be no occupational disease related to their field, 71% were working in internal medicine, while the others were employed in PTR, ORL, neurology, psychiatry, and infectious disease departments.

Thirty (24.2%) participants stated that they had previously identified occupational diseases, with pneumoconiosis and silicosis identified by 6 (4.8%), discopathy by 4 (3.2%), carpal tunnel syndrome and lateral epicondylitis by 2 (1.6%), conjunctivitis by 3 (2.4%), allergic and irritant dermatitis by 2 (1.6), mesothelioma by 2 (1.6%), and rhinitis by 1 (0.8%) participant [Table 4]. The responses to the question "What do you think is the importance of diagnosing occupational disease?" were protection and treatment of the worker (n = 112, 90.3%), the administration of appropriate treatment (n = 90,

Table 1: Departments in which the study participants are employed as resident physicians

Department	*n* (%) (*n*=124; 100%)
Internal medicine	67 (54)
Physical therapy and rehabilitation	10 (8.1)
Ophthalmology	10 (8.1)
Otorhinolaryngology	9 (7.3)
Infectious diseases	8 (6.5)
Psychiatry	8 (6.5)
Pulmonology	6 (4.8)
Neurology	4 (3.2)
Dermatology	2 (1.6)

Table 2: Participants' responses to the definition of "any disease developed primarily as a result of an exposure to risk factors arising from a work activity"

Response	*n* (%) (*n*=124; 100%)
Occupational disease	74 (59.7)
Occupational accident	27 (21.8)
Unidentified	14 (11.29)
Occupational health	2 (1.6)
Work-related disease	2 (1.6)
Pneumoconiosis	2 (1.6)
Work-related and occupational diseases	1 (0.8)
Work-accident/occupational disease	1 (0.8)
Infectious disease	1 (0.8)

Table 3: Reasons given for not asking patients' occupations

Response	*n* (%) (*n*=47; 37.9)
Patient load and busy schedule	16 (12.9)
Limited time	9 (7.2)
Forgetting	7 (5.6)
Asking when necessary and in the presence of certain indications	6 (4.8)
Considered unnecessary	5 (4)
Believing that not every disease is occupational	2 (1.6)
Believing that there would not be occupational diseases in his field	1 (0.8)
Considered as a waste of time	1 (0.8)

Table 4: Diagnosis established by the participants in their diagnoses of occupational disease

Diagnosis	*n* (%) (*n*=20; 16.1%)
Pneumoconiosis and silicosis	6 (4.8)
Discopathy	4 (3.2)
CTS and lateral epicondylitis	2 (1.6)
Conjunctivitis	3 (2.4)
Allergic or irritant dermatitis	2 (1.6)
Mesothelioma	2 (1.6)
Rhinitis	1 (0.8)

CTS: Carpal tunnel syndrome

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72.6%), receiving compensation (n = 46, 37%), and not important (n = 1, 0.8%).

Of the total, 61 (49.2%) participants stated that they did not know the procedure to be followed after diagnosing an occupational disease. The responses given by 63 (50.8%) participants who said that they knew the procedure to be followed after diagnosis were as follows: adjusting treatment and call for control (n = 25, 20.2%), telling the worker to leave his/her job (n = 3, 2.4%), referral to the occupational disease department (n = 53, 42%), reporting to SSI (n = 9, 7.3%), reporting to the employer (n = 5, 4%), reporting to the workplace physician (n = 20, 16.1), and reporting to the Ministry of Health (n = 9, 7.3%). None of the participants selected the option "directing the worker to file a lawsuit" due to the right to pecuniary and nonpecuniary damages arising from occupational disease. Of the total, 118 (95.2%) participants believed that occupational diseases could be prevented, while 2 (1.6%) participants stated that it was not possible and 4 (3.2%) participants had no opinion on the subject. The opinions of the participants, who believed that occupational diseases could be prevented, and the way they could be prevented, are presented in Table 5.

Discussion

With this study, we showed that there is a serious lack of knowledge about the definition of occupational disease, taking occupational anamnesis, and procedures to be performed after the diagnosis in pregraduate medical education and specialty education.

The participants were in the relatively young age group, and the majority were newly graduated from the medical faculty. As such, it is possible to say that our findings reflect the importance placed in occupational diseases during undergraduate education in medical schools. Çımrın *et al*. highlighted that training in occupational health and safety is not provided in a standard structure, before or after graduation from medical schools in Turkey, and that the departments that are aware of the importance of the issue seem to deal with the subject as part of their own field of interest rather than as part of an integrated approach.[8] As curative medicine practices gain importance, subjects related to occupational and environmental health, and especially in preventive medicine, become more neglected in medical education.[9]

Approximately 60% of the participants could be able to define the term "occupational disease," although only 37.9% were aware of the laws related to occupational health and safety. This finding is a further indication that the medicolegal aspect of the responsibilities of physicians is not sufficiently addressed in medical education.

Among the participants, 62.1% reported that they asked patients about their occupations as a matter of course. A previous study in our country established that 43.9% of the physicians did not inquire about the occupational history of their patients, emphasizing the lack of a habit of occupational history taking.[6] The cross-sectional study by Politi *et al*. highlighted that physicians recorded the gender and age of approximately 99% of their patients but questioned occupational history only at a rate of 27.8%.[10] The findings of the present study demonstrate that awareness has increased in time, but it is still insufficient.

According to 2018 data of the Turkish Statistical Institute, there are more than 153,000 physicians in Turkey.[11] There are 339 physicians per 100,000 people in the Organization for Economic Cooperation and Development countries, while this figure for Turkey was 186 in 2017. It has been reported that 468,442,354 examinations were made in Turkey in 2015 and that physicians made an average of 3316 examinations per year.[12,13] The Turkish Medical Association has stated that physicians should allocate a minimum of 15–20 min to each patient and that an examination taking 3–5 min does not indicate a qualified health-care service. The minimum patient examination time determined by the World Health Organization is 20 min, while the health-care institutions of the Ministry of Health give one appointment for every 10 min and even two appointments (one appointment every 5 min) most of the time.[14,15] It has been established that an average of 17.5 min is required at state hospitals and training-research hospitals, while an average of 23 min is required at university hospitals for the evaluation of one patient in the pulmonology field in Turkey.[16]

Table 5: Participants' opinions on how to prevent occupational diseases

Opinions	*n* (%) (*n*=100; 100%)
Primary prevention, protection measures against risk factors, elimination of contact	44 (44)
Prevention-minimization of exposure by structuring and improving working conditions, taking the necessary protection measures	16 (16)
Employee and employer training, raising awareness, imparting information, consciousness-raising, and proper guidance	15 (15)
Early diagnosis, regular follow-up, and screening	14 (14)
Improving laws, ensuring legal compliance, imposing sanctions	7 (7)
Other (multidisciplinary approach, collaborative work of physicians, improving occupational health and safety)	4 (4)

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It can be concluded from international sources that outpatient evaluation times should be no <10 min, but that may need to be increased further depending on the level of complexity of the medical conditions.[17] In the present study, the physicians primarily reported the patient load, their busy work schedule, and the lack of time as the reasons for not asking occupational and work-related questions, which is an important indication that physicians are faced with the pressure of intensely examining patients. This is also evidence of the lack of a healthy physician–patient relationship in Turkey.

Despite their busy work schedules and the pressure to examine many patients in a short time, it is remarkable that 12% of the participants considered occupational history taking to be unnecessary and unimportant. This finding suggests that they have not been given sufficient training that would allow them to understand the importance of investigating the relationship between occupational exposure and disease development. Likewise, 16.9% of the participants claimed that there was no occupational disease in their field of specialization, which suggests a further shortfall in education on the occupational causality relationship of diseases.

Among the participants who stated that they took occupational history, 34.6% said that they took work history, with 24.2% asking about the previous jobs, 30.6% about positions/duties, 12.9% about the materials used, 16.9% about the total time working in the job, and 14.5% about the risk factors in the working environment. Of the participants, 37 made multiple choices, which indicate sufficient elaboration when taking occupational history.

The specialties of the physicians who had previously established an occupational disease were pulmonology, PTR, ophthalmology, dermatology, and ORL. According to SSI data for 2019, 406 of the 1088 cases diagnosed with an occupational disease were related to the respiratory tract, 72 to the musculoskeletal system, and 21 to the dermatological system.[3] The most frequent encounters and diagnoses of occupational diseases in these specialties may be due to the high awareness of physicians and the fact that the diagnosed cases might have increased the awareness during specialization training.

When the participants were asked about the importance of diagnosing occupational diseases, 90.3% responded for protection of the worker, which suggests that the participants were aware of the importance of protection against occupational risks. However, it is apparent that physicians lack sufficient knowledge and experience of the procedures to be followed after such a diagnosis. Half of the participants stated that they did not know, while the other half chose to focus mostly on treatment. This finding suggests that physicians lack a preventive medicine perspective and that, in professional practice, a focus on curative medicine is prioritized. Alici *et al*. showed that 60% of the cases diagnosed with pneumoconiosis are dismissed from their jobs in Turkey,[18] and such dismissals may seem as an unfair practice due to legal gaps; however, the lack of knowledge and experience of physicians in managing cases of occupational diseases may also play an important role in this regard.

In response to the question: "Do you think occupational diseases could be prevented?," 95.2% of the participants chose the "possible" option, believing that occupational diseases can be prevented through primary prevention, protective measures against risk factors, elimination of contact, prevention-reduction of exposure, taking the necessary protective measures, employee and employer training, raising awareness, imparting information, consciousness-raising and proper guidance, early diagnosis, and regular follow-up and screening. Given the findings, however, it can be said that physicians do not feel responsible for the application of such measures in their daily practice.

It can be considered as a limitation of the study that only 124 (62%) cases agreed to participate in the survey from among the study population of 201 resident physicians. We concluded that the low rate of study participation among the physicians may be related to their level of knowledge of occupational diseases, besides their busy working schedule.

Conclusion

The findings of the present study suggest that there is a serious lack of knowledge on occupational diseases in undergraduate medical education and specialization training. To address this shortfall, education should be provided during both medical school education and specialization training on the duties, powers, and responsibilities of physicians related to occupational disease, the diagnostic criteria for occupational disease, and the legal processes related to occupational health and safety.

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Conflicts of interest

There are no conflicts of interest.

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