



# WORKPLACE MEDICINE PRACTICES AND REFERRAL OF THE EMPLOYEES TO THE SECONDARY AND TERTIARY LEVEL HEALTH INSTITUTIONS

İş yeri hekimliği uygulamaları ve çalışanların ikinci ve üçüncü basamak sağlık kuruluşlarına yönlendirilmesi

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## Abstract

Employees may need to be referred to health institutions for different indications, such as illness and rehabilitation. In Turkey, the procedure for referring cases from the workplace to health institutions is not fully defined. Learning the approaches of workplace physicians on employee referrals will determine the direction and content of future studies on this matter. This study aims to obtain information about the characteristics of workplace physicians working in Izmir province and their attitudes towards case referral to health institutions. The population of the descriptive study consisted of workplace physicians registered in Izmir Medical Chamber e-mail information network. The subjects were contacted through the information network of the Chamber, and an online questionnaire was sent. 58% of the participants stated that they participated in risk assessment studies and conducted field surveillance. 69.3% of the participants stated that they were able to conduct a pre-employment examination for all employees, and 78.4% stated that they were able to conduct periodic examinations on a regular basis. 52.3% of the participants stated that they referred patients with a preliminary occupational disease diagnosis one or more times. One-fourth of the participants stated that they could not act freely in terms of referring cases from the workplace. The examinations performed at the workplace and referral of the necessary cases to advanced healthcare centers are vital steps in protecting and improving employee health. It is crucial for the workplace physician to feel free to refer suspicious cases and to have job security against all possible consequences.

**Keywords:** Workplace physicians, occupational health and safety, referral chain.

## Özet

Çalışanların hastalık ve rehabilitasyon gibi farklı endikasyonlar için sağlık kuruluşlarına sevk edilmesi gerekebilir. Türkiye'de çalışanların iş yerinden sağlık kuruluşlarına sevkine ilişkin prosedür tam olarak tanımlanmamıştır. İş yeri hekimlerinin olgu sevklerine yaklaşımlarının öğrenilmesi bu konuda yapılacak çalışmaların yönünü ve içeriğini belirleyecektir. Bu çalışma, İzmir ilinde görev yapan iş yeri hekimlerinin özellikleri ve sağlık kuruluşlarına olgu sevkine yönelik tutumları hakkında bilgi edinmeyi amaçlamaktadır. Tanımlayıcı tipteki araştırmanın evrenini, İzmir Tabip Odası e-mail bilgi ağındaki bulunan iş yeri hekimleri oluşturmuştur. Odanın bilgi ağı aracılığıyla katılımcılarla iletişime geçilmiş ve çevrimiçi bir anket gönderilmiştir. Katılımcıların %58'i risk değerlendirme çalışmalarına katıldığını ve saha gözetimi yaptığını belirtmiştir. Katılımcıların %69,3'ü tüm çalışanlara işe giriş muayenesi yapabildiğini, %78,4'ü ise düzenli olarak periyodik muayene yapabildiğini belirtmiştir. Katılımcıların %52,3'ü meslek hastalığı ön tanısı olan hastaları bir veya daha fazla kez sevk ettiğini belirtmiştir. Katılımcıların dörtte biri iş yerinden olgu sevk etme konusunda özgür hareket edemediklerini belirtmişlerdir. İş yerinde yapılan tetkikler ve gerekli vakaların ileri sağlık merkezlerine yönlendirilmesi, çalışan sağlığının korunması ve geliştirilmesinde hayati adımlardır. İş yeri hekiminin şüpheli olguları rahatlıkla sevk edebilmesi ve olası tüm sonuçlara karşı iş güvencesine sahip olması çok önemlidir.

**Anahtar kelimeler:** İş yeri hekimleri, iş sağlığı ve güvenliği, sevk zinciri.

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## Introduction

The main goal of workplace health practices is to protect and improve workers' health in the workplace. The workplace physician is responsible for all activities regarding this goal (1, 2). In this respect, employees in the workplace may need to be referred to health institutions for different indications, such as illness and rehabilitation.

As with other diseases, occupational diseases can be prevented in three stages: primary, secondary, and tertiary prevention. To prevent disease, protect human life, and prevent job losses, these steps are crucial and can be explained simply as preventing the individual from coming into contact with harmful substances (3). Medical examinations prior to employment are crucial for primary prevention and for determining and ensuring the suitability of the individual for the job and the job for the individual. Immunization activities and training programs in the workplace are also examples of primary prevention measures. In cases where all these primary prevention measures are insufficient, secondary prevention measures are life-saving in occupational health practices.

The most well-known of the secondary prevention measures at the workplace is the periodic examination of employees, and the scope of these examinations varies depending on the characteristics and risks of the work (2). As a result of periodic examinations, cases with

referral indications are referred to health institutions by workplace physicians. It is essential to fully fulfill the necessary procedures to establish the referral indication, activate the administrative mechanisms for the referral of the worker, establish relations with the referral institution, and make the most accurate evaluation of the worker during the referral. All these steps allow the referral indication to achieve its purpose quickly and accurately. This process is also prone to ethical issues, and the defined ethical code related to occupational health should be considered (4).

In our country, the procedure for referring cases from the workplace to health institutions is not fully defined legally. Health assessment has a special content as it differs from general health care. Although there are no studies on this subject in our country, information based on personal observations suggests that there are different practices. All processes relating to employee health must have the potential to result in consequences for criminal, insurance, and labor laws. Learning the approaches of workplace physicians on case referrals will determine the direction and content of future studies on this matter. This study aims to obtain information about the characteristics of workplace physicians working in Izmir province and their attitudes towards case referral to health institutions.

## Material and Method

### Population and sampling

The population of the descriptive study consisted of workplace physicians registered in Izmir Medical Chamber e-mail information network. It is thought that the number of workplace physicians registered to e-mail network is around 500 and the minimum sample size estimated was 218 by using Epiinfo Statcalc.

### Data collection

The subjects were contacted through

the e-mail network of the Chamber, and an online questionnaire was sent through the chamber. The online questionnaire was reminded three times at three-week intervals, and in this way, all workplace physicians were tried to be reached. Eighty-eight physicians completed the questionnaire. Variables of the study; age and gender of the participant, the status of receiving training on occupational health and occupational diseases at the medical faculty, the place where he/she received his/her

occupational medicine certificate, the total number of employees at the workplace, the daily and weekly working hours at the workplace, shift status, night and overtime working status, and the danger class of the workplace, the existence of a risk assessment team in the workplace, the status of conducting risk assessment studies in the workplace, participation in risk assessment studies, the status of conducting field surveillance, the status of providing occupational health trainings, the status of conducting recruitment and periodic examinations, the status of conducting periodic examinations at the times determined by himself/herself, the status of employees' easy access to him/her, his/her opinion on the service provision of the occupational health and safety service unit, the status of referring cases with a preliminary diagnosis of occupational disease, his/her opinion on being able to refer to occupational disease hospitals freely, the criteria he/she pays attention to in deciding on the institution to which he/she refers, the status and reasons for communicating with the health institution/physician to whom he/she refers the case, the status of sharing information that he/she thinks will contribute to the medical evaluation of the case during the

referral process, his/her level of knowledge about occupational disease notification and his/her status of seeing himself/herself as competent in combating health risks. Since causality is not investigated, all variables are considered descriptive variables.

### Statistical analysis

The data obtained through the online survey system were analyzed with the SPSS 22.0 package program. For descriptive findings, variables specified by counting were expressed as numbers and percentages, and variables specified by measurement were expressed as mean±standard deviation or median (minimum value-maximum value), taking into account the data compliance with normal distribution. The distribution characteristics of the variables specified by measurement were evaluated with the Shapiro Wilk test and kurtosis and skewness coefficients. If the coefficients were between -1.5 and +1.5, it was assumed that the data were normally distributed.

### Ethical approval

Ethics committee approval was obtained from Dokuz Eylul University Hospital Ethical Board (No: 2019/10-28). During the research, the confidentiality of the participant's personal information protected.

## Results

The mean age of the group is 52.5±7.8 years, and 67.8% (n=59) are male. The majority of the participants stated that they did not receive any training on occupational health and occupational diseases in medical faculty. More than 70% of the subjects stated receiving their occupational medicine certificate from the Turkish Medical Association (TMA); approximately 70% were employed by Joint Health and Safety Units (JHSUs), and less than 15% were employed full-time in a company (Table 1).

The mean daily working time of the participants was 7.3±2.2 hours, while the mean weekly working time was 37.1±12.4 hours. The median daily working hours for self-employed workers was 6.0 hours (2.0

8.0); for after-hours workers was 1.8 hours (1.4-8); for those working affiliated with a JHSU, 8 hours (1.5-12); and for those working full-time in a workplace, 8 hours (6-9). The median number of employees in the respondents' workplace was 750 (12-4000). While 14.8% of the cases worked less than five hours daily, 51.1% worked between 5-8 hours per day. 34.1% of the cases worked more than eight hours a day (Table 2). The number of people responsible for the cases increased depending on the daily working hours. Daily working hours and the total number of employees were positively correlated at a low level of significance ( $r=0.353$ ,  $p<0.01$ ).

**Table 1:** Information on participants' education and working status (n=88).

Variables	n	%*
<b>Status of receiving occupational health education in medical faculty</b>		
Yes	10	11.4
No	62	70.4
Partially	16	18.2
<b>Status of receiving occupational diseases education in medical faculty</b>		
Yes	15	17.1
No	50	56.8
Partially	23	26.1
<b>The place where the workplace physician certificate was received</b>		
The Ministry of Labor and Social Security	17	19.3
Turkish Medical Association	63	71.6
Other	8	9.1
<b>City of work (n=86)</b>		
Izmir only	63	73.3
Izmir and another province	17	19.8
Izmir and other provinces	6	6.9
<b>Working status</b>		
Affiliated with the Joint Health and Safety Unit	61	69.3
In a full-time workplace	13	14.8
Self-employed	8	9.1
After-hours work	6	6.8

\*86 participants had responded

**Table 2:** The number of employees according to daily working time and working status (n=88).

Variables	Number of employees		
	Median	Min.	Mix.
<b>Daily working time</b>			
Less than 5 hours (n=13)	200.0	135	1700
5-8 hours (n=45)	750.0	50	2000
More than 8 hours (n=30)	935.0	12	4000
<b>Working status</b>			
Affiliated with the Joint Health and Safety Unit (n=61)	850	12	4000
In a full-time workplace (n=13)	1100	500	2000
Self-employed (n=8)	425	135	1200
After-hours work (n=6)	188.5	110	200

Among the participants, 3.4% (n=3) worked in shifts, and 1.1% (n=1) worked at night (Table 3). Over 66.6% of shift workers reported working after hours, and 100.0% of night workers reported working after hours. Seventy-eight percent (n=68) of the cases reported that there was a risk assessment team in place at the workplace. It was stated by 71.9% of the participants working in less dangerous workplaces, 79.2% of the participants working in dangerous workplaces, and 78.2% of the participants

working in very dangerous workplaces that there was a risk assessment team in the workplace.

Of the participants 58% (n=51) stated that they participated in risk assessment studies and conducted field surveillance. Of the participants 69.3% (n=61) of the participants stated that they were able to conduct a pre-employment examination for all employees, and 78.4% (n=69) stated that they were able to conduct periodic examinations on a regular basis (Table 4).

**Table 3:** Work life characteristics of the participants (n=88).

<b>Variables</b>	<b>n</b>	<b>%*</b>
<b>Shift work</b>		
Yes	3	3.4
No	83	94.3
In some workplaces	2	2.3
<b>Night work</b>		
Yes	1	1.1
No	84	95.5
In some workplaces	3	3.4
<b>Overtime work</b>		
Yes	7	8.0
No	77	87.5
In some workplaces	4	4.5
<b>Danger group*</b>		
Less dangerous	57	64.8
Dangerous	78	88.6
Very dangerous	56	63.6
<b>Presence of a risk assessment team in the workplace (n=87)</b>		
Yes	68	78.2
No	3	3.4
In some workplaces	15	17.3
I don't know	1	1.1
<b>The status of performing risk assessment studies</b>		
Yes	74	84.1
No	4	4.5
In some workplaces	10	11.4

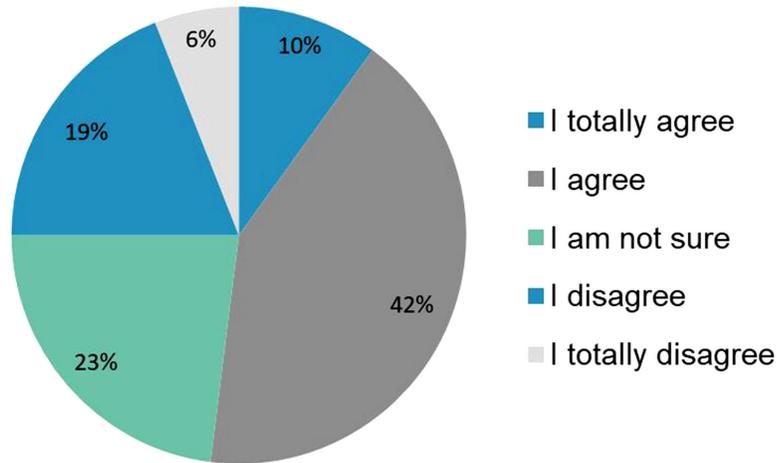
\*row percentage

**Table 4:** Legislative compliance with the working conditions of the cases (n=88).

<b>Variables</b>	<b>n</b>	<b>%*</b>
<b>Participation in risk assessment activities</b>		
Yes	51	58.0
No	8	9.0
Partially	29	33.0
<b>Field surveillance status</b>		
Yes	68	77.3
Partially	20	22.7
<b>Conducting pre-employment medical examinations for all employees before starting work</b>		
Yes	61	69.3
No	2	2.3
In some workplaces	25	28.4
<b>Regular periodic health examinations of employees</b>		
Yes	69	78.4
No	2	2.3
In some workplaces	17	19.3
<b>Ability to perform periodic examinations within the periods determined by himself/ herself</b>		
Yes	52	59.1
No	4	4.5
Partially	32	36.4
<b>Easy accessibility of employees to him/her</b>		
Yes	69	78.4
No	4	4.5
In some workplaces	15	17.1
<b>Suitability of the Occupational Health and Safety unit in the working environment for good service delivery</b>		
Yes	31	35.2
No	4	4.5
In some workplaces	37	42.1
Partially	16	18.2

Of the participants 52.3% (n=46) stated that they referred patients with a preliminary occupational disease diagnosis one or more times. This rate is 16.7% among those working after hours and 69.2% among

those working full-time in a workplace. One-fourth of the participants stated that they could not act freely in terms of referring cases from the workplace (Figure 1).



**Figure 1:** Opinions of the participants about feeling freely while referring employees from the workplace.

Participants stated that the essential criterion for deciding on the referral institution was the correct medical diagnosis of the

problem. The criteria for deciding on the referral institution are presented in Table 5.

**Table 5:** Criteria considered in deciding on the referral institution.

Variables	n	%*
Correct medical diagnosis of the problem	68	77.3
To be able to focus on the relationship between profession and health	65	73.9
Ease of transportation	42	47.7
Ease of communication	40	45.5
Cost	11	12.5
Employer/Human resources make the decision	10	11.4

Participants reported that 36.8% of them always communicated with the health institution or physician to whom they referred employees, and 49.4% said they sometimes communicated with them. Among those who answered yes, 78.2% (n=43) stated that they contacted to give information about the case; 70.9% (n=39) to get information about the case; 52.7% (n=29) to learn about additional needs, if any; and 14.5% (n=8) to meet. It

was reported that 89.2% (n=74) of the participants always shared information with the referring institution, while 10.2% (n=9) did so occasionally. While 65.9% of the participants reported knowledge about how to report occupational diseases, 42.5% considered themselves competent in terms of theoretical and practical skills in the fight against health risks.

## Discussion

In addition to the fact that the level of participation in surveys conducted electronically may be low in general, the very low participation rate in this survey can be considered an indicator of occupational medicine physicians' motivation regarding the subject. On the other hand, the participants may be those who experience problems in providing occupational medicine services. From this point of view, the majority of participants were male, in the age group of 50, serving as JHSU employees, and only 15% of them stated that they worked full-time in a workplace.

Although the average working hours of the participants is 7.3 hours per day, this period is 3.7 hours for those working after hours and reaches 8.2 hours for full-time workplace physicians. Beyond fulfilling the legal requirement, a full-time workplace physician can pave the way for a healthy workplace potential by getting to know and adopt the workplace better in the context of the workplace physician's duties, powers, and responsibilities.

The majority of the participants reported that they did not receive training on occupational health and occupational diseases in Medical Faculty. Similarly, a study conducted in 2017 with 92 workplace physicians who were members of the Association of Workplace Physicians found that 68.5% of the participants did not receive occupational health and safety education at the Medical Faculty (5). In another study conducted in 2015 with 258 workplace physicians working in Ankara, 51.2% of the participants stated that they did not receive any training on occupational health at the Medical Faculty (6). In the same study, the rate of not receiving training on occupational diseases in medical faculty increased to 61.8% (6). The National Core Education Program for Pregraduate Medical Education includes occupational diseases and occupational safety under the section work and health interaction (7). Physicians, however, stated that they did not receive

these pieces of training in practice, which indicates that the subject is not given sufficient attention.

Less than 60% of the participants stated that they participate in risk assessment activities and conduct field surveillance in the workplace. More than 20% of the participants stated that there is no risk assessment team in the workplace. This finding highlights the lack of relevant supervisory provisions in the legislation. The fact that legal equivalent and easier traceability of the pre-employment and periodic examinations may cause workplace physicians to perform these examinations more frequently than other duties. Despite this, it is observed that the rate of performing the pre-employment and periodic examinations does not even reach 80%. Similarly, a study conducted in 2017 with 92 workplace physicians who are members of the Association of Workplace Physicians stated that more than 80% of the participants experienced problems in fulfilling their duties and responsibilities (5). In a study conducted in 2015 with 258 workplace physicians working in Ankara, the participants stated that the rate of participation in risk assessment studies decreased to 87.1%, while the rate of performing pre-employment examinations was 98.8% (6).

While the rate of being easily accessible to the employees, conducting periodic examinations in the periods determined by themselves, conducting regular health examinations of employees, conducting pre-employment examinations for all employees, providing occupational health trainings, conducting field surveillance, and participating in all risk assessment activities varies between 50-84% regardless of employment status, it is observed that the suitability of the Occupational Health and Safety unit in the working environment for good service provision has decreased in all groups.

Although more than half of the participants stated that they had referred

patients with a prediagnosis of occupational disease one or more times, the rate is considerably lower, especially among those working after hours. This may indicate that after-hours doctors provide more outpatient clinic services than their other functions. In particular, the higher rate of referrals for occupational diseases among full-time physicians suggests that they are more familiar with the working environment and its risks and anticipate the possible interaction between work and health. A study found that the referral rate for the occupational disease was higher in workplace physicians who received occupational disease training at the medical faculty (6). It is thought that case referral for occupational disease is closely related to the occupational disease training received by the individual.

One-fourth of the participants stated that they could not act freely in referring cases from the workplace. This may be due to the fact that workplace physicians receive their wages from the employer in return for their labor. Workplace physicians receive wages from their employers in exchange for their labor, which may explain this situation. In order to prevent physicians from

confronting their employers and to ensure that they are free to refer cases, it seems necessary to prevent workplace physicians from receiving their wages directly from the workplace and to ensure job security for them. Otherwise, it is likely that we will see more examples in the future where employers terminate the contracts of physicians who refer employees with suspicions of occupational diseases (8).

Participants stated that the most important criteria in deciding which institution to refer cases to were the correct medical diagnosis of the problem and the ability to focus on the occupational health relationship. In this regard, it is a positive finding that the cost and the employer's decision remain in the background. A significant majority of the participants stated that they communicated with the physician to whom they referred the workers and shared information that they thought would contribute to the medical evaluation of the case. This perspective and practice are positive for both the referring physician and the physician who will decide on the occupational disease diagnosis. It may also pave the way for possible collaborations.

## Conclusions

In conclusion, examinations performed at the workplace and referral of the necessary cases to advanced healthcare centers are vital steps in protecting and

improving employee health. It is crucial for the workplace physician to feel free to refer suspicious cases and to have job security against all possible consequences.

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