TAKING ENVIRONMENTAL HISTORY WHILE PROVIDING PRIMARY HEALTH CARE: AWARENESS, ATTITUDE AND BEHAVIOR; A CROSS-SECTIONAL STUDY

Birinci basamakta sağlık hizmeti verirken çevre öyküsü alma: farkındalık, tutum ve davranış; Kesitsel bir çalışma

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Abstract

To evaluate the impact of the environment on human health, it is necessary to take a comprehensive environmental history. It is very important that these methods are learned and applied by all physicians, especially primary care physicians. The aim of this study is to examine the awareness, attitudes and behaviors of family physicians who take primary duties in primary care regarding environmental history. The study is a cross-sectional study and was carried out between December 2018 and December 2019. There are 84 family physicians working in the central district of Aydın. It was aimed to reach the entire study population, and 90.5% (n=76) participated in the study. The structured interview form was applied face-to-face method. The mean environmental story awareness score of the physicians was determined as 14.26±4.41. It was determined that 47.8% of the physicians took environmental history. 7.9% of the physicians stated that they received special training on environmental history. Average awareness of environmental history among those with more than 30 years of practice compared to those with less than 30 years of practice, those who received education about environmental history compared to those who did not receive education about environmental history, and physicians who frequently/always take environmental history compared to those with less environmental history. were found to have higher scores. By providing the physicians with adequate time and conditions for patient examinations and providing training on why taking environmental history is important, this pressure on physicians can be reduced, and as a result, physicians' provision of this service can be facilitated.

Keywords: Medical history, medical history taking, family practice, environmental health, public health.

Özet

Çevrenin insan sağlığı üzerindeki etkisinin değerlendirilebilmesi için kapsamlı bir çevre öyküsünün alınması gerekmektedir. Bu yöntemlerinin tüm hekimlerce, özellikle birinci basamak hekimleri tarafından öğrenilmesi ve uygulanması çok önemlidir. Bu çalışmanın amacı çevre öyküsü ile ilgili birinci basamakta primer görev alan aile hekimlerinin farkındalık, tutum ve davranışlarını incelemektir. Çalışma kesitsel bir çalışma olup Aralık 2018-Aralık 2019 tarihleri arasında gerçekleştirilmiştir. Aydın ili merkez ilçesinde 84 aile hekimi çalışmaktadır. Çalışmada evrenin tümüne ulaşılması hedeflenmiş, %90,5'i (n=76) çalışmaya katılmıştır. Hekimlere yapılandırılmış görüşme formu yüz yüze yöntemle uygulanmıştır. Hekimlerin çevre öyküsü farkındalık puan ortalaması 14,26±4,41 olarak tespit edilmiştir. Hekimlerin %47,8'inin çevre öyküsü aldığı saptanmıştır. Hekimlerin %7,9'u çevre öyküsü ile ilgili özel bir eğitim aldıklarını belirtmiştir. Hekimlik yılı 30 yılın üzerinde olanların hekimlik yılı 30 yıldan daha az olanlara göre, çevre öyküsü hakkında eğitim alanların çevre öyküsü hakkında eğitim almayanlara göre ve çevre öyküsü alma sıklığı çoğunlukla/her zaman olan hekimlerin çevre öyküsü alma sıklığı daha az olan hekimlere göre çevre öyküsü ortalama farkındalık puanlarının daha yüksek olduğu bulunmuştur. Hekimlere, hasta muayeneleri ile ilgili yeterli süre ve koşulların sağlanması ve çevre öyküsü almanın neden önemli olduğu konusunda eğitimler verilmesi ile hekimlerin üzerindeki bu baskının azaltılması, bunun sonucunda da hekimlerin bu hizmeti sağlamaları kolaylaştırılabilir.

Anahtar kelimeler: Tıbbi öykü, tıbbi öykü alımı, aile hekimliği, çevre sağlığı, halk sağlığı.

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Introduction

Environmental factors are one of the important determinants of human health and it is stated that the concept of health should be handled in a multidisciplinary dimension, including human, animal and environmental health (1). Environmental exposure is a process that begins in the womb and its effects may appear over a prolonged period of time (2). Environmental risk factors such as air, water and soil pollution, various chemicals, and climate change can directly affect health and cause many diseases and disabilities (3). When the International Classification of Diseases (ICD 11) is examined, it is seen that some diagnoses related to environmental exposure are included. For example, the effects of heat related to the term environment were specified with the code NF01 and conditions such as heat stroke and heat exhaustion were evaluated within this grouping. Concepts such as ambient noise, ambient temperature, smoke, and environmental particles are also evaluated under the title of environmental compatibility problems. Although the ICD includes codes related to the environment, the use of these codes by clinicians in our country is limited (4). This situation contradicts the principle that the patient approach should be holistic and suggests that there are deficiencies in taking patient history.

The process that Hippocrates started with taking a history from the patient continued with Ramazzini's questioning of the patient's work. Today, a complete approach to a patient has included taking a history from the patient about both occupational and environmental influences. Taking a patient's history is the basic step in the process of approaching and diagnosing the patient. The anamnesis is the essence of clinical examination and the basis of medical activity. Comprehensive and high-quality anamnesis contributes to effective health care by guiding the diagnosis process (5). However, although it is well taught in medical education to take patient history about common diseases, education about occupational and environmental history remains weak, and environmental health assessments are rarely made in clinical practice in many parts of the world (6). In addition to evaluating the relationship between the environment and health, it is also important how this relationship will be used for the benefit of the patient. Although it is possible to observe the serious effects of some environmental factors on human health in the short term, the results of most environmental effects are seen in the long term. Therefore, the assessment of environmental impact is quite difficult (7).

Physicians have important responsibilities in evaluating the relationship between environment and health and using it for the benefit of the patient. It is thought that the medical history to be taken from the patients for the evaluation of the environmental exposure and risks of the family physicians working in the primary health care services is important (7). Family physicians provide health services in order to protect and improve the health of the individual and society, with the measures to be taken for individuals and the environment, and for the protection of health and the prevention of diseases. These services are among the requirements of preventive health services, which form the basis of primary health care services. In addition, primary care management, which is considered within the core competencies of family medicine includes environmental measures, such as preventing and controlling common health problems, providing adequate clean water and basic sanitation. Measures to improve the environment are among those to be taken before the disease occurs (prevention) and the aim is to increase the quality of life of individuals with these measures (8).

Family medicine system is being implemented in Turkey. Family physicians should have a holistic approach to the society they serve and should have all information about the health of the family. The environmental history is one of these components. Especially in recent years, disasters have been experienced in various

parts of the world due to the climate crisis. These disasters are expected to increase gradually. There is a need for studies on the environment and environmental history in the field of health in the climate change adaptation strategy. The aim of this study was to examine the awareness, beliefs and behaviors of family physicians, who are thought to have an important area of responsibility for the evaluation and development of environmental health, and who provide health services in primary care, towards taking environmental history.

Material-Method

The study is a cross-sectional study and was carried out between December 2018 and December 2019. Aydın is a province with a population of 1,098 million located in the west of Turkey. Efeler district, which is the central district of the Turkish province of Aydın, constitutes approximately 27% of the entire province population. There are 84 family physicians working in the district of Efeler (9). In the study, each family physician was visited on-site with the aim of sampling the entire physician population, and family physicians who could not be reached the first time, were visited up to twice more in order to try to achieve 100% sampling. A total of 38 questions, including 6 questions on sociodemographic characteristics and 32 questions on environmental history, attitudes and behaviors, were applied to participating family physicians. Of the 32 environmental history questions, 22 were a scale form that had previously been used to explore environmental history related to a number of key environmental factors (10). Environmental history awareness scores of physicians were calculated according to this scale form. With 1 point for a positive and 0 points for a negative answer, the maximum score possible was 22 and the minimum score 0. Participants were asked about the purpose of taking the environmental story, unhealthy living behaviors of the population in the region, the definitions of the concepts of environment, health, environmental health, and environmental history using the open-ended question method. The question of sources of information about environmental history was asked in such a way that more than one option could be ticked. Physicians who agreed to participate in the study were included in the study.

The study was approved by the Adnan Menderes University (ADU) Faculty of Medicine Non-Invasive Clinical Research Ethics Committee, with Protocol No: 2018/1458. After the approval of the ethics committee, necessary permissions were obtained from the Aydın Provincial Health Directorate.

Statistical analysis

Statistical analyzes were evaluated with SPSS, version 22.0 (IBM Inc., Armonk, NY, USA). All data were first evaluated for compliance with normal distribution by Kolmogorov-Smirnov test and histogram. Descriptive statistics are presented as numbers and percentages. Measurement data are presented as mean and standard deviation for those with normal distribution, median and min-max values for non-parametric data. Student's t test was used since the comparison of two measurement data conformed to the normal distribution. When the relations were analyzed on the basis of correlation, the normal data was assessed using the Pearson correlation test, and non-parametric data was assessed with the Spearman correlation test. Type I error level was determined as 0.05. A word cloud was created as a result of the qualitative evaluation of the question of the purpose of the environmental story with the NVIVO12 (QSR International, Chadstone, Victoria, Australia) program.

Results

In total 76 (90.5%) of the target population of family physicians participated in the study. Unfortunately five family physicians refused to participate in the study, and three could not be reached due to annual leave/field duty. The mean age of the 76 physicians participating in the study was 51.17±7.95. Most of the participants (n=56; 73.7%) were male and 90.8% (n=69) were married. The majority of participating physicians (n=60; 78.9%) were general practitioners, and 21.1% (n=16) were family medicine specialists. The median value for years of practice was 27 (6-41), and family practice was 9 (1-37) years (Table 1).

Table 1: Sociodemographic characteristics of physicians.

	n	%
Age		
≤50 years	35	46.1
>50 years	41	53.9
Gender		
Male	56	73.7
Female	20	26.3
Marital status		
Married	69	73.7
Single	7	26.3
Branch of medicine		
General practitioner	60	78.9
Family physician specialist	16	21.1
Years of practice		
≤30 years	52	68.4
>30 years	24	31.6

While more than half of physicians (60.5%; n=46) reported that they had patients who fell ill due to environmental exposure only 7.9% (n=6) of the physicians stated that they received a special education about environmental history taking. When physicians were asked about the sources of information about environmental history, 63.2% (n=48) used mass media, 56.6% (n=43) the Ministry of Health, 55.3% (n=42) literature, and 46.1% (n=35) stated their colleagues. The thoughts, attitudes and behaviors of the responding physicians about environmental history in medical history taking are given in Table 2.

Table 2: Thoughts, attitudes and behaviors of physicians about environmental history during medical history taking.

	n	%
Diagnosis of "patient" due to environmental exposure (n=76)		
Yes	46	60.5
No	30	39.5

Education about environmental history (n=76)		
Yes	70	92.1
No	6	7.9
Information source on environmental history[a]		
Mass media	48	63.2
Ministry of Health	43	56.6
Literature	42	55.3
Colleague	35	46.1
Thoughts about taking environmental history (n=76)		
I think it will enable my patients to take precautions against environmental factors.	45	59.2
I think it will help me uncover diseases that cause specific symptoms	19	25.0
I think it will increase my workload	6	7.9
No idea	6	7.9
Purpose of taking environmental history[a]		
Diagnosis	44	57.9
Identifying environmental factors for diseases and taking precautions	16	21.1
To practice preventive medicine	39	51.3
Human health, Healthy life	6	7.9
Frequency of taking environmental history (n=69)		
Rarely/Sometimes	36	52.2
Often/ Always	33	47.8
Characteristic of the area where the population in the region spends time[a]		
House	62	81.6
Agricultural field	25	32.9
Office	21	27.6
Industry	13	17.1
Unhealthy living behaviors of the population in the region[b]		
Unbalanced diet, sedentary life, obesity, smoking use, alcohol use	53	69.7
Pesticides, excessive use of chemicals	3	3.9
Air pollution	1	1.3
Sun exposure (UV)	1	1.3
Definition of "environment" [b]		
The environment in which we interact	46	60.1
Everything	3	3.9
Air and water pollution	2	2.6
Condition of healthy life, health	2	2.6
The determinant of health	1	1.3
Life	1	1.3

Definition of "health" [b]		
Biopsychosocial well-being	40	52.7
Life, sustainable living	5	6.5
Definition of "environmental health" [b]		
Effect of environmental factors on living conditions	29	38.1
Necessary for health	14	18.4
Protected but not protected	3	3.9
Future	2	2.6
Definition of "environmental history" [b]		
Identifying environmental factors for diseases	22	29.0
Questioning the work and living environment	6	7.8
Characteristic of the environment	3	3.9
Willingness to receive education on environmental history (n=61)		
Wants to education	44	72.1
Doesn't want to education	17	27.9

[a]More than one option may be chosen., [b]Open-ended questions were asked.

When the views of the physicians about the purpose of the environmental history were evaluated, the most common words used were disease, environmental, diagnosis, prevention, preventive, and factor (Figure 1).

Figure 1: Physicians' views on the purpose of the environmental story.

When the environmental history of the physicians regarding basic environmental factors was investigated, 98.7% (n=75) of the physicians stated the age of the patient, smoking and alcohol use status, and 97.4% (n=74) mentioned the patient's occupation, drugs used, and allergies. Table 3 shows the extent of the environmental factors that family doctors might have investigated when taking the history from their patients.

Table 3: Physicians' environmental history regarding basic environmental factors.

Factors questioned in the environmental history	n	%
1.Patient's age	75	98.7
2.Patient's occupation	74	97.4
3.Working conditions of the patient	62	81.6
4.The region where the patient lives (rural, urban)	66	86.8
5.The place where the patient lives (home, residence, shelter)	57	75.0
6.If the patient is a child, the occupation of the parents	46	60.5
7.The air pollution situation in the environment where the patient lives or works	53	69.7
8.Whether the patient has recently moved to a newly built house or a prefabricated house	18	23.7
9.Whether there is a new construction or paint-whitewash in the apartment or house of the patient	30	39.5
10.Whether new furniture or carpet was purchased in the patient's house or apartment	23	30.3
11.The method of heating the house where the patient lives	57	75.0
12.Whether the patient used pesticides at home or in the garden	33	43.4
13.Whether there is a pet in the patient's home	51	67.1
14.What the patient uses as drinking water	38	50.0
15.Medicines that the patient uses regularly	74	97.4
16.Whether the patient has allergies	74	97.4
17.Do you question whether the patient has habits such as use cigarettes, pipes, alcohol?	75	98.7
18.Patient's hobbies (glass painting, ceramics, pigeon breeding, etc.)	25	32.9
19.Do you ask about the previous treatments (Chemotherapy etc.) that the patient has received?	71	93.4
20.Whether there is an accident that will cause chemical exposure in the patient's home	30	39.5
21.Whether there is any industry, factory, refinery, construction site, mine treatment plant, high voltage line near the patient's home	19	25.0
22.The content, storage type, frequency of use, areas of use of the cleaning materials used by the patient in house cleaning	33	43.4

The mean environmental history awareness score of the physicians was 14.26±4.41. It was determined that age, gender, marital status, branch of medicine, diagnosis of "patient" due to environmental influences, and the desire to receive education did not have a significant effect on the average awareness score ($p>0.05$). Awareness scores were significantly higher in physicians with less than 30 years of practice, had received education about the importance of taking environmental history and in those who always took environmental history compared to those who rarely took one (Table 4). The correlation between the environmental history awareness scores of physicians and their age, years of practice and years of family practice was examined, and no statistically significant relationship was found.

Table 4: Factors associated with physicians' environmental history awareness scores.

	Mean ± SD	p*
Age		
≤50 years	14.60±4.18	0.542
>50 years	13.97±4.62	
Gender		
Male	14.60±5.41	0.693
Female	14.14±4.04	
Marital status		
Married	14.21±4.53	0.779
Single	14.71±3.09	
Branch of medicine		
General practitioner	14.25±4.37	0.960
Family physician specialist	14.31±4.67	
Years of practice		
≤30 years	15.00±4.16	**0.031**
>30 years	12.66±4.58	
Diagnosis of "patient" due to environmental exposure		
Yes	14.23±4.60	0.954
No	14.30±4.17	
Education about environmental history (n=76)		
No	14.00±4.54	**0.017**
Yes	18.66±1.36	
Frequency of taking environmental history (n=69)		
Rarely/Sometimes	12.30±4.62	**<0.001**
Often/ Always	15.90±3.36	
Willingness to receive education on environmental history (n=61)		
Wants	14.45±4.39	0.403
Doesn't want	13.25±5.04	

**Student t test*

Discussion

In this study the frequency of environmental history taking among a study group of family physicians was less than half although 60% of respondents reported seeing patients with illnesses with an environmental element. Most physicians had not received specific training in investigating environmental history but there was a common desire to understand this part of medical history taking. In addition, the average awareness scores for environmental history were lower in physicians who had been in practice longer (>30 years) and, unsurprisingly, in those who had not received training in taking an environmental history from patients.

Physicians generally neglect to take environmental history for various reasons, and studies show that environmental history is not taken sufficiently in primary health care

delivery (11,12). In a study conducted by Arnaud et al. in France, it was stated that only 50.6% of general medicine practitioners received environmental history from their patients (12). In our study with family physicians, the frequency of taking environmental history was found to be similar but slightly higher at 52.2%. In a study by Kilpatrick et al. with pediatricians, their thoughts on taking an environmental history were investigated, and the most common answer was to help parents prevent threats to their children from the environment (13). Nearly 60% of the physicians who participated in our study stated that they thought that taking environmental history would enable their patients to take precautions against environmental factors.

In our study 7.9% of the respondents thought that taking environmental history increased their workload. This suggests that some of the reluctance to include environmental history in medical history taking may be due to pressures of workload although the majority of our respondents did not cite this as a concern. While the process of taking environmental history has remained largely the same from the past, it has changed in recent years with health policy and the development of new industries. This change supports a system where physicians are aware of environmental impacts at local, regional, national and international levels and are responsible for all stages of this process, and this situation reveals the need for more information and training for physicians (11).

In a study conducted by Karagulle et al. on medical residency students, the most common factors asked about in the environmental history were the patient's age (99.1%), previous treatments (99.1%), regular medications (98.2%), tobacco use and alcohol use (95.1%), whether they have allergies (93.7%), and their profession (91.9%) (10). These were also the most commonly investigated topics in environmental history taking among our study group. In the study by Karagulle et al the least investigated environmental factors included the purchase of new furniture or carpets (16.2%), whether they have recently moved to a newly built house or a prefabricated house (17.1%), type, storage and use of home cleaning materials (18.9%), whether there was new construction or recent interior decoration in the home (21.6%), presence of industries/factories or high voltage cables near the home (25.2%), and the heating method for the home (30.6%). The respondents in our study also reported similarly low questioning about these important sources of environmental health risk which suggests that questions about the patients' indoor and outdoor environments are not sufficiently addressed.

The effort and knowledge of the physician is extremely important to obtain a complete and comprehensive patient history. In a study, Ontario Family Physicians reported that patients were asked many questions about the environment, but most physicians rated their knowledge of environmental health issues as very low (14). In our study, it was observed that the majority of family physicians had a desire to receive education about environmental history. In addition, the average awareness scores of the physicians who responded positively to the questions of receiving education about environmental history and willingness to receive education about environmental history were found to be significantly higher.

Family physicians in our study group were asked about the sources of information about environmental history. Information was obtained most frequently through mass media, followed by the Ministry of Health information system and literature support. Reem et al., in a study of Egyptian pediatricians, found that information sources for environmental history were most commonly text books and guides (85.7%) (15).

The limitations of this study include an incomplete sample of the target with only 90.5% participation although this is an excellent response rate for this type of study. The area in which the study was conducted covers 27% of the entire province population, and this situation is thought to be informative in terms obtaining a representative sample (16), especially when coupled with the 90% sample capture. There are few studies concerning environmental history taking in family physicians so that this study adds to the evidence available in this area.

Conclusions

It appears that environmental history taking as part of the practice of medical history taking is not widely or consistently undertaken by family physicians in this study group. Reasons for a reluctance to investigate these possible triggers for illness include concerns about increased workload and limited time. By providing physicians with sufficient time and appropriate conditions for patient examinations, this pressure on physicians can be reduced. In addition, giving more emphasis on environmental history education in medical faculties may be effective in establishing a standard approach to environmental history taking.

As stated in ICD-11, factors affecting health care are associated with environmental problems. It is extremely important for physicians to consider environmental influences on the health of individuals in the process of diagnosing and creating diagnostic codes, in terms of accurate diagnosis and treatment. In addition, it would be beneficial to expand and develop diagnostic codes in order to clearly define the effects of the environment on health.

Providing education related to environmental health, not only in faculties related to health but also in every institution that is intertwined with social life, can provide positive gains in terms of public health. A multidisciplinary approach should be adopted for the assessment of the environmental risk in development of disease and each patient should be considered in the context of their normal environment when attempting to take a medical and environmental history. We believe there is a need for more research into this facet of medical history taking which will raise awareness of the potential importance of environmental history in diagnosis.

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