Smoking Prevalence and Quit Rates in Edirne

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Tobacco related health problems are serious public problem for Turkey. The purpose of this study was to determine the smoking prevalence and quit rates in adults in Edirne. This was a cross-sectional study conducted in the city center. The sample was chosen randomly from the neighborhoods covered by Public Health Center, which is representative of the population in the city center, weighted according to ethnicity (being Turkish Gypsy or not), age and gender. A survey developed by the World Health Organization (WHO), with some additional questions, was used for data collection. Categorical variables were compared with Chi square test and parametric variables were compared using the t test. Some variables related to smoking were analyzed using logistic regression. The survey was completely filled out by 645 individuals, 193 of whom were male and 452, female. It was found that 58% of the adults are current smokers (68% of the men and 54% of the women, p=0.001), 29% had never smoked (16% of the men, 35% of the women, p=0.000), and 13% had quit (16% of the men, 12% of the women, p>0.05). In the Logistic Regression, age, (adjusted OR=1.03), being Turkish Gypsy (adjusted OR=6.14), unemployment (adjusted OR=2.13), drinking alcohol (adjusted OR=6.42) and being a high school graduate compared to being illiterate (adjusted OR=2.90) were factors that significantly affected smoking. We concluded that smoking prevalence in Edirne, particularly in women, may be one of the highest of Turkey, and quit rates are considerably far from the national goals.

Key Words: *Tobacco use disorder, prevalence, logistic models, gypsies.*

Edirne'de Sigara İçme ve Bırakma Oranları

Tütün kullanımı ülkemiz için gittikçe ağırlaşan bir halk sağlığı sorunudur. Bu çalışmada Edirne'de erişkinlerin sigara içme ve bırakma oranlarının belirlenmesi amaçlanmıştır. İl Merkezi'nde yapılan kesitsel bir alan çalışmasıdır. Örneklem kent merkezi nüfusunu temsil edecek şekilde, 8 Merkez Sağlık Ocağı Bölgesi'nden, rastgele olarak, etnik köken (roman olan ya da olmayan), yaş ve cinsiyete göre ağırlıklandırılarak yıl ortası nüfusa göre seçildi. Veri toplamada, çoklu analizlerde kullanılmak üzere, sigara içmeyi etkileyebilecek bazı soruların eklenmesiyle geliştirilmiş Dünya Sağlık Örgütü'nün (DSÖ) anket formu kullanıldı. Tek değişkenli yöntemlerden kategorik değişkenler ki-kare testi ile, sürekli değişkenler ise iki ortalama arasındaki fakın önemliliği testi (t testi) ile karşılaştırıldı. Sigara içmeyi etkileyebilecek kimi değişkenler lojistik regresyon analizi ile değerlendirildi. Anketi tam olarak dolduran 645 kişiden 193'ü erkek, 452'si kadındı. Anket sonuçlarına göre katılımcıların %58'inin halen sigara içicisi olduğu (erkeklerin %68'i, kadınların %54'ü, p=0.001), %29'unun hiç içmediği (erkeklerin %16'sı, kadınların %35'i, p=0.000) ve %13'ünün bırakmış olduğu (erkeklerin %16'sı, kadınların %12'si, p>0.05) saptandı. Lojistik Regresyon Analizinde yaş (adj. OR=1.03), Roman olmak (adj. OR=6.14), işsizlik (adj. OR=2.13), alkol kullanmak (adj. OR=6.42) ve okur-yazarlara göre lise mezunu olmak (adj. OR=2.90) önemli faktörlerdi. Bu bulgular ile Edirne'de, özellikle kadınlarda olmak üzere sigara içme oranlarının ülke ortalamalarının üzerinde olabileceğini ve sigara bırakma oranlarının ulusal hedeflerin çok gerisinde olduğunu düşündük.

Anahtar Kelimeler:. *Tütün kullanma hastalığı, prevalans, lojistik modeller, roman.*

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Introduction

Cigarette smoking is one of the most important preventable causes of death and one of the most important public health priorities. Unnecessary excess deaths and loss of property are the harms to the individual and the society. Turkey is one of the most tobacco consuming countries in the world. There are 1.2 billion people older than 15 years of age in the world (one in every three adults) who are addicted to tobacco and of these 80% live in developing countries (1). According to a research conducted in our country in 1988 the smoking prevalence in the population 15+ years of age was 43% (63% of the men, 24% of the women) (2). In a more recent study it was determined that 50.9% of the men and 10.9% of the women 20+ years of age in our country were smokers (3).

Throughout the world 4.83 million people die from tobacco products every year (4) and this number will reach 10 million in 2020. In 51 countries in Europe, 1.2 million people die from tobacco products (5). In our country approximately 100,000 people die every year from diseases related to tobacco use.

The Eastern European region, where our country is located, is responsible for 25% of the annual tobacco-related deaths in the world, and it is estimated that men

in this region are the highest risk group for tobacco related deaths in the world (6). We presumed that it would be important to determine the tobacco use prevalence and quit rate in the city of Edirne which is in the western European part of our country. In addition because of Edirne's location as a city on the national border and with its other socioeconomic factors it may have different cigarette smoking attitude than the country in general.

The rate of quitting cigarette smoking is an important indicator in the evaluation of the effectiveness of tobacco control programs and an important measure for planning programs to help individuals quit smoking. In the national tobacco control program the goal was to determine the rate of quitting smoking by 2007 and the target was set to reach a rate of 40% in society by 2010 (7).

This study was planned for the purpose of measuring the prevalence of adult cigarette smoking prevalence and quit rates in Edirne, to provide basic information for monitoring it over time to show the need and effectiveness of tobacco control methods.

Materials and Methods

This study was conducted as a cross-sectional study in Edirne province center. A survey was run between May 15 and June 15, 2002, with a sample chosen according to the population data for the middle of the year for 2001 from Edirne Province Health Ministry, using a face-to-face interview method.

Sampling: According to the Edirne Health Directorate's year 2001 statistics there were total 93,347 people in 15-64 age group (47,326 men and 46,021 women). The research sample was chosen by calculating from these totals, assuming smoking prevalence for women 25% ± 4 (95% Confidence Interval) (446 women), and for men 65% ± 7 (95% Confidence Interval) (178 men) by national prevalence's from PIAR study; the study was conducted with 645 individuals, 452 of whom were women and 193 men. The sampling procedure was conducted randomly, weighted according to ethnicity (Turkish Gypsy or not), age and gender from eight different neighborhood Public Health Clinics located in the city center.

Survey: Data were collected using a survey, "International Union Against Tuberculosis and Lung Diseases (IUATLD) / Amended WHO smoking questionnaire" (8) with some questions added about factors that may affect cigarette smoking to be used in multiple analyses. A pilot test was conducted with the survey that was used. The data were collected by a group of sixth year students at a university medical faculty. The data collectors were trained about how to administer the form, and they went to the participants and conducted face-to-face interviews with them to complete the surveys.

Definitions: *Current smoker*: An individual who smoked cigarettes every day or occasionally during the screening (up to 30 days previously) and who had

smoked at least 100 cigarettes during his/her life. *Daily smoker:* An individual who used any kind of tobacco product at least once a day. *Nonsmoker:* An individual who did not smoke cigarettes during the screening period. *Ex-smoker:* An individual who had previously smoked daily but had now completely quit smoking. *Never smoker* - (i) an individual who had never smoked cigarettes or (ii) an individual who had previously smoked less than 100 cigarettes in his/her life and who is not current smoker. *Ever smoker:* An individual who had smoked at least 100 cigarettes in his/her life. *Quit Rate:* ex-smokers / ever smokers (9).

Statistical methods: Categorical variables were compared with Chi square test and parametric variables were compared using the t test of significance between two means. Some variables that could affect cigarette smoking were analyzed using the "stepwise" logistic regression analysis model.

Results

There were 645 people between the age of 15-64 who participated in the study, 193 of whom were male and 452 female. The mean age of men was 35.9±12.9 years and the women's mean age was 34.4±12.5 years. In the study 9.6% of the participants could not read or write, 26.2% were primary school, 19.1% middle school, 35.5% high school and 9.9% university graduates; 62.9% were married and 27.5% were single; 39.2% were housewives, 17.2% were self-employed, 15.3% were public servants and 12.9% were students (Table 1).

The distribution of smoking status of the participants according to their gender and age groups is shown in Table 2. In this study, 68.4% of the men were smoker, 62.2% were daily smoker, 16.1% were ex-smoker, and 15.5% were never-smoker. The mean age when men started to smoke was 16.3±4.1 (7-30); the median age was 16 years.

In the present study, 53.8% of the women were smoker, 38.9% were daily smoker, 11.7% were ex-smoker, and 34.5% were never-smoker. The mean age when women started to smoke was 18.8±4.8 (10-43); the median age was 18 years. There was a very narrow gap between the daily smokers and smokers in the men (6.2%), but the gap was wide in women (14.9%).

The quit rate in men was 16.1% and in women it was 11.7%. The quit rate increased after 45 years in men and after 30-35 years in women.

Factors affecting cigarette smoking attitude were examined with analysis of multiple variables (Table 3). The dependent variable was cigarette smoking; the independent variables were age, gender, educational level, ethnicity, alcohol use status, and status of whether or not they have income within last week. Age, (adjusted OR=1.03), being Turkish Gypsy (adjusted OR=6.14), unemployment (adjusted OR=2.13), drinking alcohol (adjusted OR=6.42) and being a high school graduate compared to being illiterate (adjusted OR=2.90) were the factors that significantly affected smoking status.

Table 1. Demographic findings of participants

Characteristic	Number	%
Gender		
Male	193	29.9
Female	452	70.1
Educational Level		
Illiterate	60	9.3
Primary school	169	26.2
Middle school	123	19.1
High school	229	35.5
University	64	9.9
Age		
15-24	165	25.6
25-34	184	28.5
35-44	135	20.9
45-54	101	15.7
55-64	60	9.3
Marital status		
Married	406	62.9
Single	177	27.5
Divorced	24	3.7
Widowed	38	5.9
Occupation		
Housewife	253	39.2
Student	83	12.9
Unemployed	29	4.5
Public servant	99	15.3
Retired	44	6.8
Laborer	26	4.1
Self-employed	111	17.2
Worked at an income-producing job the previous week		
No	436	67.6
Yes	209	32.4

Table 2. Smoking Status for Adults in Edirne Province Center

Age group	n	Daily Smoker %	Smoker %	Ex-Smoker %	Never Smoker %	Quit rate %
MEN						
15-19	21	42.9	52.4	4.8	42.9	8.4
20-24	22	63.6	63.6	9.1	27.3	12.5
25-29	25	80	80.0	16.0	4.0	16.7
30-34	31	74.2	77.4	9.7	12.9	11.1
35-39	21	66.7	81.0	9.5	9.5	10.5
40-44	17	82.4	82.4	11.8	5.9	12.5
45-49	25	40	48.0	32.0	20.0	40.0
50-54	10	70.0	70.0	20.0	10.0	22.2
55-59	12	66.7	66.7	33.3	0	33.3
60-64	9	55.6	55.6	33.3	11.1	37.5
Total	193	62.2	68.4	16.1	15.5	19.1
WOMEN						
15-19	45	26.7	44.4	0	55.6	0.0
20-24	77	52.0	70.1	10.4	19.5	12.9
25-29	71	40.9	59.2	8.5	32.4	12.6
30-34	57	42.1	56.1	17.5	26.3	23.8
35-39	51	33.3	45.1	19.6	35.3	30.3
40-44	46	41.3	56.5	10.9	32.6	16.2
45-49	42	40.5	47.6	9.5	42.9	16.6
50-54	24	41.7	54.2	12.5	33.3	18.7
55-59	19	21.1	36.8	26.3	36.8	41.7
60-64	20	20	30.0	10.0	60.0	25.0
Total	452	38.9	53.8	11.7	34.5	17.9
General Total	645	46.5	58.1	13.0	28.8	18.3

Table 3. Logistic Regression Analysis of Some Factors That May Be Related to Smoking Prevalence.

Variables	Adjusted Odds ratio	95% Confidence Interval	p
Age	1.03	1.01- 1.04	.002*
Gender			
Female	*Reference*		
Male	1.47	0.89-2.41	.131
Ethnicity			
Others	*Reference*		
Turkish Gypsy	6.14	2.27-16.62	.000
Status of working at an income-producing job the last week	*Reference*		
Worked		1.29- 3.51	.003*
Did not work	2.13		
Status of alcohol use			
Does not drink alcohol	*Reference*		
Drinks alcohol	6.42	3.79-10.87	.000*
Educational status			
Illiterate	*Reference*		
Primary School	1.08	0.44-2.68	.857
Middle School	1.17	0.44-3.14	.755
High School	2.90	1.08-7.83	.035*
University	1.14	0.37-3.52	.821
CONSTANT	1.378		.026

* $p < 0.05.$

Discussion

Because of lack of a comprehensive prevalence study representing whole Turkey since 1988, local studies like this one are important. According to the PIAR study in 1988, the smoking prevalence in subjects older than 15 years old was found to be 43% (63% of the men and 24% of the women) (2). In 1993, a study conducted by BIGTAS for Ministry of Health with 26,546 individuals showed that 58% of men and 14% of women over the 20 years of age were smokers. In this study, the highest smoking prevalence was in the Thrace region with 39%. The lowest smoking prevalence was found to be in the Southeastern Anatolia with 29% (10). In a more recent study it was reported that 51% of men and 11% of women (≥ 20 years of age) were smokers (3). In a study by Çan et al. (11) in an Eastern Black Sea sample the prevalence in men was 52% and in women was 20%.

In this study in Edirne City Center, the smoking prevalence in men was found to be 68% and in women 54%, and in the total 58%. These data, as was indicated in the BIGTAS study, suggest that cigarette consumption is higher in the region of Thrace than the country's average and are consistent with the Eastern Europe region epidemiologic data (6). The highest rate of smoking in women in our country is also likely to be in Edirne. The rate of cigarette smoking in women according to the Turkish Demographic Health Survey in 1998 was 18%, but it was 28% in 2003 (7). According to these data the prevalence of cigarette smoking in women in Edirne Province center is nearly twice that of the

national average. In developed countries, because a large percentage of men have quitted, the women and men's smoking prevalence are similar and about 20%. In Turkey, smoking is more prevalent in men than women, constantly. This was also stated by Çan et al. (11) and they related this situation to the cultural and societal pressure. This situation may be different in Edirne, and probably in Thrace region in general, because of a difference in general cultural make-up and we suggest that there is not gender distinction for this subject in Thrace region. The effect of the tobacco industry's marketing strategy may also have had an influence on this cultural change.

The Turkish Gypsies in Edirne have a higher prevalence of unemployment, smoking and alcohol use. This may be an important clue in the planning of smoking cessation services to the society. In studies conducted in western societies it has been determined that low socioeconomic groups have higher tobacco use constantly (12).

The high prevalence of cigarette smoking in Edirne is an indicator that there is also a very high level of environmental tobacco smoke. According to the 2001 Turkish Global Youth Tobacco Research (GYTS) 89% of the young people who participated in the study are exposed to passive cigarette smoke at home and 90% in places open to the public; 68.8% of their fathers and 39.7% of their mothers smoked cigarettes in their homes (13).

Another significant result obtained in this study was the quit rates. The health benefits for those who quit smoking are significant. The earlier they can quit smoking the greater the benefits. The benefits provided by quitting in the adult population can also have some decreasing effect of starting smoking because of prevention of smoking adults serving as wrong role models for young people. The quit rate was 13% in general, 16.1% in men, 11.7% in women. Our National Tobacco Control Program had targeted the determination of quit rates in society by the year 2007 and to raise the quit rate to 40% by 2010; to raise the quit rate among health professionals to 50% by 2008, to raise the quit rates among teachers, religious leaders and administrators, and members of professions to 50% by 2010; and to raise the quit rates during pregnancy to 90% by 2008 (7). However we are not aware of any planned, official program aimed at implementation to achieve these targets. The quit rates in the entire population of our country is not known. According to local studies, quit rate is about 20% (7). In the US, the quit rate was 29.6% in 1965, and as a result of a 20-year effort it was reported to have risen to 44.8% (14). When these values are compared it is clear how far behind we are and how much effort is needed. The high rate of quitting in the older age groups, in particular, in this study suggests that those who have quit had health problems causing increased awareness and quitting efforts. At the societal level, educational, economic, clinical and legislative measures are urgently needed to increase the quit rates. Because of potent addictive nature of smoking, quitting effort must be supported by pharmacologically and/or behaviorally. There is a significant lack of health services available in our country to help people stop smoking (7). In fact, smoking cessation services are suggested to be one of the most cost effective health interventions (15, 16). Education of health professionals for smoking cessation can significantly increase public health services for cessation.

In conclusion, smoking is a growing problem in Edirne since smoking prevalence, particularly in women, is one of the highest of Turkey, and quit rates are far from behind the national goals. And lack of smoking cessation services is the major problem. Urgent efforts focused especially on socioeconomically deprived groups like unemployed people and gypsies are needed.

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