Trakya Üniversitesi
İktisadi ve İdari Bilimler Fakültesi E-Dergi
Cilt:8 Sayı:2 (65-81)

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

ANALYSIS OF TOBACCO USE BEHAVIOUR BASED ON TURKEY HEALTH INTERVIEW SURVEY

Nuray TEZCAN[1]

Abstract

The aim of this study is to analyze tobacco use behaviour of the people aged 15 years and over in Turkey**.** Also, association between tobacco use and socio-demographic variables (gender, age, education, marital status, employment status, household income) and tobacco-related disease variables (asthma, lung diseases, coronary heart disease, hypertension, stroke and also alcohol use) is investigated. In this study, dataset has been gathered from Turkey Health Interview Survey 2016 conducted by Turkish Statistical Institute (TurkStat) including 17,242 individuals. Since all variables are categorical, results are presented as frequencies and percentages. To determine whether or not there is a assocation between related variables, Chi-Square test has been conducted and Cramer's V coefficient has been calculated. Additionally, t-test has been employed for continuous variables. Based on results of analyses, it has been seen that 43% of males and 18.57% of females and overall 29.43% of the respondents are current tobacco smokers while 14.19% of respondents are former tobacco smokers in Turkey. Accordingly, prevelence of tobacco use is quite higher among males than males. With regard to relationship between tobacco use status and social-demographing variables, gender and education level are found to be the most significant factors On the other hand, alcohol use is highly related with smoked tobacco. The results obtained from t test indicate that males started smoking earlier than females and also the number of cigarettes smoked per day in males is higher than females. Just about one-third of the daily smokers attempted to quit smoking and former smokers did not take any assistance to quit smoking. This result indicates that smokers should be encouraged to quit smoking using other cessation methods with new regulations.

Keywords: Tobacco use, Chi-Square Analysis, Cramer's V coefficient, t test, Turkey

[1] Assoc Prof. Dr., Haliç University, Department of Business Informatics, Faculty of Business Administration, Istanbul, Turkey, e-mail: nuraytezcan@hotmail.com
ORCID 0000-0002-3184-7330

Trakya Üniversitesi
İktisadi ve İdari Bilimler Fakültesi E-Dergi
Cilt:8 Sayı:2 (65-81)

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

TÜRKİYE SAĞLIK ARAŞTIRMASINA GÖRE TÜTÜN KULLANMA DAVRANIŞININ ANALİZİ

Öz

Bu çalışmanın amacı, Türkiye Sağlık Araştırmasına göre, 15 yas ve üstündeki insanların tütün kullanma davranışını analiz etmektir. Ayrıca, tütn kullanımı ile çeşitli sosyo-ekonomik değişkenler (cinsiyet, yaş,medeni durum, çalışma durumu, hanehalkı geliri) ve tütün kullanmı ile ilgili hastalıklar (atım, akciğer hastalıkları, koroner kalp hastalığı, hipertansiyon, felç ve ayrıca alkol kullanımı) arasındaki ilişki araştırılmıştır. Analiz edilen veri, Türkiye İstatistik Kurumu (TÜİK) tarafından yapılan ve 17,242 kişiyi kapsayan Türkiye Sağlık Araştırmasından elde edilmiştir. Tüm değişkenler kategorik olduğu için, sonuçlar frekanlar ve yüzde olarak verilmiş, değişkenler arasındaki ilişki, Ki-Kare testi ve Cramer's V katsayısı ile araştırılmış ve sürekli değişkenler için t-testi yapılmıştır. Analiz bulgularına göre, erkeklerin %43'ünün ve kadınların %18.57'sinin, ayrıca tüm katılımcıların %29.43'ünün düzenli olarak sigara kullandığı saptanmıştır. Buna göre, erkeklerde tütün kullanma oranı, kadınlara göre oldukça yüksektir. Tüm sosyo-ekonomik değişkenlerin tütün kullanımı ile ilişkili olduğu görülmekle birlikte, cinsiyet, eğitim ve ayrıca alkol kullanımının en önemli faktörler olduğu sonucuna varılmıştır. t testinden elde edilen bulgulara göre ise, erkeklerin kadınlardan daha önce sigaraya başladıkları ve bir günde daha fazla sayıda sigara içtikleri tespit edilmiştir. Düzenli olarak sigara kullananların yalnızca üçte birinin sigarayı bırakma girişiminde bulundukları ve geçmişte sigara kullananların sigarayı bırakmak için herhangi bir yardım almadıkları elde edilen diğer bulgulardır. Bu durum, düzenli olarak sigara kullananların, sigarayı bırakma konusunda yeni düzenlemelerle daha fazla teşvik edilmesi gerektiğini vurgulamaktadır.

Anahtar Kelimeler: Tütün kullanımı, Ki-Kare Analizi, Cramer's V Katsayısı, t test, Türkiye

Trakya Üniversitesi
İktisadi ve İdari Bilimler Fakültesi E-Dergi
Cilt:8 Sayı:2 (65-81)

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

1. Introduction

Prevalence of tobacco use[2] has several harmful effects on the human health and has been one of the most crucial health topic for the people in the world. According to several studies in the literature it has been proved that tobacco use and second hand smoke cause several serious diseases such as chronic diseases, lung cancer, chronic obstructive pulmonary disease (COPD), tuberculosis (TB), asthma, stroke and cardiovascular diseases (CVD), oral disease (World Health Organization-WHO, 2019).

Based on WHO, it is estimated that 235 million people currently suffer from asthma and over 251 million people live with COPD in 2016 and one in five smokers will catch COPD in their lifetime. Additionally 1.6 million people died due to TB in 2017 (WHO, 2019). Moreover around 18 million people die from CVD and tobacco use is one of the leading factor, causing about 3 million deaths every year in the world (WHO, 2018b). Also it is known that tobacco smoking rises the risk of stroke two to fourfold (Cook and Bhatti, 2016). As a result, tobacco smoking has been considered as the most important risk factor for all diseases mentioned above.

According to another WHO report, it is predicted that prevalence of tobacco smoking is 20.2% of the world's population aged 15 years and older. This means that about 1.11 billion people have tobacco smoking habit and nearly 367 million of them use smokeless tobacco as of 2015 (WHO, 2018). Based on same report again, although there has been a decline in smoking rate during the last fifteen years, if it goes like this it is not possible to reach 15.5% target determined in advance at the global level until 2025.

In line with these results, struggling with tobacco use and attempting to quit smoking have gain more attention in the world and in Turkey recently. First, the Framework Convention on Tobacco Control (FCTC) was declared by WHO in order to collect common data within and across countries in 2003. Moreover, FCTC has been used to struggle against tobacco as a guide since then. Besides, WHO developed MPOWER (Monitor, Protect, Offer, Warn, Enforce, Raise) package which includes six evidence-based measures in 2008. This package, also, enables to help countries to adopt

[2] Tobacco use term can be defined in two forms: Smoked tobacco products (cigarette, cigar, pipe, bidis, waterpipe) and smokeless tobacco products (chewing tobacco, moist and dry snuff, snus, dissolvables). For the sake of uniformity, smoked and smokeless tobacco use are stated in one term which is "tobacco use". For Turkey, tobacco use refers "smoked tobacco use".

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

WHO FCTC. In this way, it has been possible to monitor progress of countries and compare each other (WHO, 2019b).

Based on WHO FCTC, Turkey has been successful in terms of MPOWER policies since 2008 (Çalıkoğu and Köyceğiz, 2018). First, Turkey was introduced as the first country achieving a high level of success in terms of six MPOWER strategies in the 2013 Global Tobacco Control Report and in line with the latest report Turkey and Brazil are launched as the only two countries adopting all MPOWER measures at the highest level in the middle-income countries (WHO, 2019b).

2. Literature Review

There have been several studies that provide insights into prevalence of tobacco use or factors affecting tobacco use behavior through questionnaire method with large sample in Turkey. Some of these focused on university students while the others studied on adults.

Bozkurt et al. (2006) conducted a study related to pattern of smoking behavior and factors affecting smoking use in the South-East Anatolian region. Findings indicate that the prevalence of smoking is 11.8% in women and 49.7% in men for the aged 15 years and over. Accordingly, the level of total cigarette consumption in men is higher than in women.

Erdoğan and Erdoğan (2009) studied on cigarette smoking among university students in Ankara, Turkey. The results evidence that the gender is significant factor in cigarette smoking behavior and also there is positive relationship between years at school and an increased rate of smoking.

Özturk et al. (2011) investigated short term effect of law prohibiting smoking in enclosed areas in Kayseri, Turkey and they found that the law has been effective on smoke behavior of the employees and there is a decrease in the number of cigarettes smoked.

Another study related with the smoking behavior belongs to Öncel et al. (2011). They investigated risk factors influencing tobacco use among Kırıkkale university students. The results show that the gender, mother's education level, family income, the existence of a smoking person in the family are found to be significant as risk factor in smoking behaviour.

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

Palipudi et al. (2012) examined various socio-demographic factors affecting tobacco use in low and middle income countries including Turkey using multiple logistic regression method based on Global Adult Tobacco Survey (GATS). The results indicated that there is negative association between prevalence tobacco use and wealth index whereas there is positive association between prevalence tobacco use and education level in Turkey.

Sağlam (2012) examined success rate of smoking cessation clinic and also factors affecting smoking cessation. It has been found that smoking cessation success rate is 40.4% over 1 year. In addition, being male, taking physician advice, low level of nicotine dependence are found to be statistically significant at success rate of quitting smoking.

Pekel et al. (2015) investigated smoking cessation and nicotine dependence of the people in İzmir, Turkey. According to results obtained from analysis, nicotine dependency is very important factor in smoke quitting and therefore success rate of smoking cessation is decreasing in addicted people.

A recent study conducted by İlhan et al. (2016) investigated socio-demographic determinants of tobacco, alcohol and substance use and drug misuse in Turkey. According to results, age, gender, education level and marital status are found to be important socio-demographic determinants for tobacco use.

On the other hand, The Global Adult Tobacco Survey (GATS) that is the first national survey pertaining to the tobacco use was conducted in 2008 and 2012 with 9,030 and 9,851 respondents, respectively in Turkey by TurkStat. The survey was simultaneously carried out in 14 countries with common questionnaire, including Turkey and used to gather data relating prevalence of tobacco use and tobacco products. Besides, this survey provides significant findings regarding monitoring tobacco use of adults and following some important indicators related tobacco use, quitting tobacco and second-hand tobacco use. Based on survey results, 31.2% of the people aged 15 years and older currently smoke tobacco in 2008. Also, 47.9% of men and 15.2% of women are determined as currently smokers (GATS, 2010). By employing the same methodology, GATS was repeated in 2012. In this survey, it has been seen that 27.1% of the people aged 15 years and older currently smoke tobacco. In addition, 41.5% of males and 13.1% of females were currently smoking in Turkey (GATS, 2012). This result indicates that there is decline in prevalence of tobacco use in Turkey between 2008 and 2012 period.

Trakya Üniversitesi
İktisadi ve İdari Bilimler Fakültesi E-Dergi
Cilt:8 Sayı:2 (65-81)

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

2. Data and Method

This study is based on dataset obtained from Turkey Health Interview Survey 2016 which is the latest and comprehensive research conducted by Turkish Statistical Institute- TurkStat (TurkStat, 2019). The survey is, in fact, comprises 23.606 individuals with 9,740 households. 0-6 and 7-14 age groups, however, are excluded because this research focus on tobacco use behaviour of adults. So final dataset consists of 17,242 people aged 15 years and over. In the study, IBM SPSS Statistics 24.0 is used for performing statistical analyses.

Since the type of answers of respondents is categorical data in Turkey Health Interview Survey, first contingency tables are constructed and then whether there is association between two categorical variables is examined. For that purpose, Chi-Square (χ^2) test of independence is employed.

On the basis of that, if the test statistic calculated from contingency table is larger than critical value with significance level determined in advance, the null hypothesis of independence is rejected. In other words, if the p value is less than 0.05, it means that two categorical variables are related. If there is no assocation between two variables, it is stated that they are independent. In other words, the distribution of one variable does ot depend on the distribution of the other (Daniel, 1990). A large value of χ^2 indicates that the deviation from hypothesis of independence is statistically significant however it does not give direct information relating strength of association between two variables. For that reason, after obtaining Chi-Square statistic, Cramer's V coefficient which is a measure of the degree of association is calculated. It takes value between 0 and 1 and the larger value of Cramer's V indicates that there is strong relationship between variables (Cramer, 1946).

According to survey, tobacco use status of the respondents is indicated in four groups: Current daily tobacco smokers, current occasional tobacco smokers, nonsmokers and former tobacco smokers. Other variables used in the analysis are divided into two groups: Socio-demographic variables and tobacco-related disease variables. In the first group, gender, age, education, marital status, employment status, household income variables are employed while the second group covers tobacco related diseases variables such as asthma, lung disease, heart attack, coronary heart disease, hypertension, stroke and also alcohol use. Respondents are asked whether they have or not diseases mentioned above in the last 12 months and also whether or not they use alcohol (even a little). The answer has two categories (Yes/No) therefore they are all measured on nominal scale. In addition to this, general

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

health status of the respondents is asked. For this question the answer is designed as "Very Good, Good, Neutral, Bad and Very Bad".

After indicating frequency distribution of socio-demographic characteristics for the whole sample, association between tobacco use status of the respondents and variables mentioned above is investigated. Additionally, some demographic features of current daily tobacco smokers are presented separately in order to determine spesific features of the daily smokers. Moreover, percentage values relating reasons of smoking initiation, attemting to quit smoking and tobacco products commonly used will be presented in the following section. In that dataset unlike the other variables, age of initiation daily smoking and the number of cigarette smoked in a day are measured in the ratio scale. Therefore, after calculating mean and standart deviation (SD), t test is used to determine whether there is a difference between male and females in daily tobacco smokers group.

4. Results

Data set used in this study is obtained from Turkey Health Interview Survey 2016 which consists of 17,242 respondents. Frequencies and percentages of the socio-demographic features (gender, age, education, marital status, household income) for the whole sample are presented in Table 1.

Based on results, 44.5% of the respondents are male while 55.5% are female. Respondents are distributed almost equally in the age groups and about 70% of the participants are married. Education level is not at the high level, about half of respondents graduated from primary and secondary school. In addition, 37.4% of the respondents are employee/worker whereas 62.1% of those are not working. Accordingly, when the reasons unemployment of the respondents are evaluated, it has been seen that, among 10,701 unemployment respondents, total of 7,307 of those engaged in housework, including elderly care, child care, patient care or retired/quitted job. With respect to income level, total of 4,707 respondents have household income between 1264-1814 Turkish Liras.

Findings show that females tend to smoke less than males. Among 7,668 male participants, 38.76 % of the respondents are daily smokers, 4.25 % of those are occasional smokers and 34.36 % of those are nonsmokers. Among 9,574 females, 14.41 % of those smoke daily, 4.16 % of those smoke occasionally and about 70% of respondents are nonsmokers.

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

Table 1: Frequency distributions of the socio-demographic features for whole sample

		f	%		f	%
Gender				Education		
	Male	7,668	44.5	Illiterate	1,694	9.8
	Female	9,574	55.5	Not Graduated	954	5.5
Age (years)				Primary	5,948	34.5
	15-24	2,905	16.8	Secondary	2,976	17.3
	25-34	3,006	17.4	High	3,106	18.0
	35-44	3,444	20.0	Vocational school	811	4.7
	45-54	3,007	17.4	Undergraduate	1,524	8.8
	55-64	2,368	13.7	Graduate/PhD	229	1.4
	65-74	1,545	9.0	Household Income (TL)		
	75+	967	5.6	0-1264	3,671	21.3
Marital Status				1264-1814	4,707	27.3
	Single	3,575	20.7	1815-2540	3,152	18.3
	Married	11,912	69.1	2541-3721	2,944	17.1
	Divorced	532	3.1	3722+	2,768	16.1
	Widow	1,223	7.1			
Employment						
	Employed	6,457	37.4			
	Temporary unemployed	84	0.5			
	Unemployed	10,701	62.1			
Overall		17,242	100.0		17,242	100.0

Source: TurkStat, Turkey Health Interview Survey, 2016

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

Table 2 presents tobacco use status of respondents by gender. It has been seen that 25.23% of the respondents are current daily tobacco smokers. Considering that the occasional tobacco smokers, the rate of total current smokers is found to be 29.43%. Also, about 56% of respondents never used while 14.19 % of those are former tobacco smokers. Additionally, when former tobacco smokers are explored (2,446 respondents), it has been seen that 71% of those are male.

Table 2: Tobacco use status, by gender

	Male	%	Female	%	Overall	%
Current daily tobacco smokers	2,972	38.76	1,379	14.40	4,351	25.23
Current occasional tobacco smokers	326	04.25	398	04.16	724	4.20
Nonsmokers	2,635	34.36	7,086	74.01	9,721	56.38
Former tobacco smokers	1,735	22.63	711	07.43	2,446	14.19
	7,668		9,574		17,242	

Source: TurkStat, Turkey Health Interview Survey, 2016

Among all respondents, a total of 4,683 people using manufactured cigarette and hand-rolled cigarette are considered as current cigarette smoker (both daily and occasional). Based on survey, among 4,683 respondents, 33% of the cigarette smokers (1551 respondents) made a quit attempt in the past 12 months whereas 67% of those did not.

With respect to smoking cessation method, among 3,997 respondents, 93% of the people quitted to smoke without any assistance. Only 1.15% of the people used toll-free quitlines to smoking cessation.

When the reasons of the smoking initation of tobacco smokers are investigated (7,140 respondents), it has been seen that affectation is the most significant reason (29.68%), friend effect is the second (28.85%) and the curiosity (21.29%) is the third. Family and personal problems account for 12.02% of the all responses.

Trakya Üniversitesi
İktisadi ve İdari Bilimler Fakültesi E-Dergi
Cilt:8 Sayı:2 (65-81)

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

Table 3: Association between tobacco use status and various variables

	Association			Measure of Association		
Variables	**Chi-Square**	**d.f**	**p**	**Cramer's V**	**p**	**N**
Socio-Demographic						
Gender	2881.600*	3	0.000	0.409*	0.000	17,242
Age	1661.396*	18	0.000	0.179*	0.000	17,242
Education	788.851*	30	0.000	0.214*	0.000	17,242
Marital Status	912.774*	9	0.000	0.133*	0.000	17,242
Employment	1115.488*	6	0.000	0.180*	0.000	17,242
Household Income	106.781*	12	0.000	0.045*	0.000	17,242
Having Health-Related Disease						
General Health Status	184.702*	12	0.000	0.060*	0.000	17,242
Asthm	22.009*	3	0.000	0.036*	0.000	17,242
Lung Disease	33.451*	3	0.000	0.044*	0.000	17,242
Heart Attack	68.894*	3	0.000	0.063*	0.000	17,242
Coronary Heart Disease	71.328*	3	0.000	0.064*	0.000	17,242
Hypertension	281.118*	3	0.000	0.128*	0.000	17,242
Stroke	0.418	3	0.937	0.005	0.937	17,242
Alcohol Use	2831.761*	3	0.000	0.405*	0.000	17,242

* p<0.01; ** p<0.05; *** p<0.10

According to results depicted in Table 3, there is relationship between tobacco use status of the respondents and all socio-demographic variables and also tobacco related diseases variables. Test statistics calculated are larger than critical value therefore the null hypothesis is rejected. Gender variable has the highest value in terms of Cramer's V coefficient among demographic variables.

Trakya Üniversitesi
İktisadi ve İdari Bilimler Fakültesi E-Dergi
Cilt:8 Sayı:2 (65-81)

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

Table 4: Social-demographic characteristics of current daily tobacco smokers, by gender

Variable		Male	%	Female	%	Total	%
Age (years)	15-24	396	13.32	141	10.22	537	12.34
	25-34	631	21.23	309	22.41	940	21.60
	35-44	752	**25.30**	430	**31.18**	1,182	**27.17**
	45-54	615	20.69	307	22.26	922	21.19
	55-64	375	12.62	149	10.80	524	12.04
	65-74	158	5.32	37	2.68	195	4.48
	75+	45	1.51	6	0.44	51	1.17
		2,972		**1,379**		**4,351**	**100.00**
Education	Illiterate	60	2.02	82	5.95	142	3.26
	Not Graduated	83	2.79	71	5.15	154	3.54
	Primary	1,064	**35.80**	465	**33.72**	1,529	**35.14**
	Secondary	615	20.69	206	14.94	821	18.87
	High	698	23.49	335	24.29	1,033	23.74
	Vocational school	177	5.96	78	5.66	255	5.86
	Undergraduate	240	8.08	127	9.21	367	8.43
	Graduate/Ph.D	35	1.18	15	1.09	50	1.15
		2,972		**1,379**		**4,351**	**100.00**
Marital Status	Single	657	22.11	185	13.42	842	19.35
	Married	2,170	73.01	960	69.62	3,130	**71.94**
	Divorced	105	3.53	151	10.95	256	5.88
	Widow	40	1.35	83	6.02	123	2.83
		2,972		**1,379**		**4351**	**100.00**
Household Income (TL)	0-1264	575	19.35	241	17.48	816	18.75
	1264-1814	851	28.63	364	26.40	1,215	**27.92**
	1815-2540	578	19.45	253	18.35	831	19.10
	2541-3721	537	18.07	252	18.27	789	18.13
	3722+	431	14.50	269	19.51	700	16.09
		2,972		**1,379**		**4,351**	**100.00**

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

Employment	Employed	2,039	68.61	416	30.17	2,455	56.42
	Temporary unemployed	22	0.74	6	0.44	28	0.64
	Unemployed	911	30.65	957	69.40	1,868	42.93
		2,972		**1,379**		**4,351**	**100.00**
Smoking Cessation	Yes	974	32.83	446	32.39	1,420	32.69
	No	1,993	67.17	931	67.61	2,924	67.31
		2,967		**1,377**		**4,344**	**100.00**
Alcohol Use	Yes	1,579	53.13	426	30.89	2,005	46.08
	No	1,393	46.87	953	69.11	2,346	53.92
		2,972		**1,379**		**4,351**	**100.00**

Source: TurkStat, Turkey Health Interview Survey, 2016

With respect to tobacco- related disease variables, all diseases are related to tobacco use status except stroke. In addition to this, the linkage between hypertension and tobacco use status is stronger than that of the others. Another significant finding is that alcohol is the most important risk factor for tobacco use. In addition to these analyses, social-demographic characteristics of current daily tobacco smokers are examined. Table 4 states these characteristics by gender as frequency and percentage.

As shown in Table 4, almost two thirds of current daily smokers are male, and the rest are female. 27.14% of the smokers are in the age group of 35-44. Also, almost one-third of those graduated from primary school and besides two-thirds of the respondent are married. With respect to household income, 27.92% of the respondents earn between 1264-1814 TL. 56.42% of the daily smokers are employee/worker whereas about 43% of those are not. Besides, rate of attemting to quit smoking is about 33% (1,420 smokers). Among of those, 1,243 (90%) respondents attempted to quit without any assistant. Furthermore, when alcohol use is explored, it has been seen that %46 of daily smokers are drinking alcohol. This percentage also seems quite high.

For the daily tobacco smokers sample, the average age of initation regularly is 18.44 (SD=6.1) while average number of cigarettes smoked per day is 16.89 (SD=9.55). With regard to gender, for the average age of initation is 17.57 (SD=5.48) in males and 20.32 (SD=6.90) in females and for average number of cigarettes smoked per day is 18.83 (SD=9.79) in males and 12.72 (SD=7.48) in females.

To determine whether there is a difference between male and females in terms of age of initiation regularly and number of cigarettes smoked per day, t test for

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

independent 2 groups is conducted. Table 5 below presents results of t test. Based on those, significant difference between males and females has been found. Additionally, males started smoking earlier than females and also number of cigarettes smoked per day is higher than females.

Table 5: Results of t test for two independent samples

Variables	Levene's Test		t-test	
	F	p value	t	p value
Age of initation regularly	75.844	.000	-14.132	.000
Number of cigarettes smoked per day	2.918	.088	20.546	.000

* p<0.01; ** p<0.05; *** p<0.10

When second-hand smoking status of the respondents are evaluated, %79.92 of the nonsmokers do not exposure smoking never/hardly, %12.76 of those exposure less than 1 hour in a day and 7.32% exposure more than 1 hour in a day. In addition to this, 85.81% of the former tobacco smokers, again, do not exposure smoking never/hardly.

On the other hand, when smoking cessation methods used by former tobacco smokers are explored, it has been found that 95% of the former tobacco smokers quitted without any assistance. 2.7% of those has provided medical assistance.

5. Discussion

This study has been based on a uniqe comprehensive representative national large sample. According to empirical results obtained from analyses 43% of males and 18.57% of females and overall 29.43% of the respondents are classified as current tobacco smokers. Although comparing those findings with the results of the GATS 2008 and GATS 2012 causes misleading comments due to methodological differences, this study can provide additional insight to observe tobacco use trend in Turkey. Based on GATS results, prevalence of tobacco has decreased in Turkey between 2008 and 2012 period (from 31.2% to 27.1%) , however, according to recent study conducted by İlhan et al. (2016) with 8,045 respondents, the rate of tobacco use is 33.2% (for those who smoke during last one month).

On the other hand, prevelence of tobacco use is quite higher among males compared with females. Similar findings were obtained in earlier studies mentioned in literature review. Additionally, when former tobacco smokers are explored (2446

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

respondents), it has been seen that 71% of those are male. As Sağlam et al. (2012) indicates that being male has been increasing success rate of smoking cessation.

With respect to reason of smoking, affectation, friend effect and curiosity are the leading factors respectively for smoking initation. They account for about 80% of the all responses. This finding is parallel with the results of Öksüz et al. (2007). Additionally, it is determined that manufactured cigarette is the most commonly used as tobacco product (91.54%). Hand-rolled cigarette, cigar, tobacco pipe and water pipe are the other tobacco products used by tobacco smokers.

According to results, it has been seen that gender, age, education, marital status, employment status, household income are associated with tobacco use status of the respondents. Accordingly, gender is the most significant determinant and education is the second important factor. Similar findings were obtained in earlier studies (İlhan et al. 2016, Palipudi et al. 2012, Öncel et al. 2011, Pekel et al. 2015, Çelikel et al. 2009).

With respect to tobacco-related diseases, all diseases are related with tobacco use status, except stroke. Among diseases, hypertension has been closely related with the tobacco use and also alcohol is the most risky factor for the smokers. That result is consistent with the study of Ukert (2017).

When current daily tobacco smokers are examined interms of socio-demographing factors, quarter of the daily smokers take part in the age group of 35-44 which is older than previous studies. Another important finding is that one third of the current daily tobacco smokers attempted to quit smoking. Since this rate is lower than the results of GATS 2012, daily smokers should be encouraged to quit smoking using various methods. Also, 90% of those attempt to quit without any assistant. It means that other methods are not efficiently used by the smokers and new regulations should be brought to use. In addition, there is no difference between males and females in terms of making a quit attempt rate (about 50% for both).

According to results, males started smoking earlier than females and also the number of cigarettes smoked per day in males is higher than females. Additionally, these results compared with results of GATS 2012, the average age of starting smoking has increeased while average number of cigarettes smoked per day has decreased.

With respect to second-hand smoking, about 80% of the nonsmokers and 86% of the former tobacco smokers do not exposure smoking never/hardly. Since there is no detailed question regarding second hand smoke exposure in Turkey Health Interview Survey 2016, it is not possible to make comprehensive comparison. However, as stated

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

before, Turkey has been successful in terms of MPOWER policies since 2008 and it adopted all measures at the highest level. Therefore, this situation has been preventing to exposure smoking

6. Conclusion

This study contributes to the existing literature by analyzing national comprehensive health survey. Based on the results, although prevalence of tobacco use has been declined in the last decade in Turkey, it has been seen that it still remains at high level. Accordingly, tobacco use status is associated with all social-demographic factors included and alcohol use. Especially gender effect plays significant role in daily tobacco use. Besides, just about one-third of the daily smokers attempted to quit smoking and former smokers did not take any assistance to quit smoking. This result indicates that smokers should be encouraged to quit smoking using other cessation methods with new regulations.

References

Bozkurt, A., Şahinöz, S., Özçırpıcı, B., Özgür, S., Şahinöz, T., Acemoğlu, H., Saka, G., Ceylan, A., Palancı, Y., İlçin, E. & Akkafa F. (2006). Patterns of active and passive smoking and associated factors in the South-East Anatolian Project (SEAP) Region in Turkey, BMC Public Health, Volume 6, 15

Cook, K., Bhatti, L. & Tursan, E. (2016). WHO Tobacco Knowledge Summaries: Tobacco and Stroke. WHO, Geneva, Available:https://apps.who.int/iris/bitstream/handle/10665/250278/WHO-NMH-PND-CIC-TKS-16.1-eng.pdf /Accessed on 27 June 2019

Cramer H. (1946). Mathematical Methods of Statistics, Princeton University Press

Çalıkoğlu, E.O. & Köyceğiz, E. (2018). Tobacco control policies in Turkey in terms of MPOWER. The Eurasian Journal of Medicine 2018; 50: Doi: 10.5152/eurasianjmed.2018.18009.

Çelikel, F.C., Çelikel, S. & Erkorkmaz, Ü. (2009). Smoking determinants in Turkish university students, International Journal of Environmental Research and Public Health, 6, 2248-2257; Doi:10.3390/ijerph6082248

Daniel, W.W. (1990). Applied Nonparametric Statistics, , Second Edition, George State University

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

Erdoğan, N. & Erdoğan, I. (2009). Smoking at School: Views of Turkish University Students, International Journal of Environmental Research and Public Health, 6, 36-50, Doi:10.3390/ijerph6010036

GATS Turkey Report, (2010). The Ministry of Health of Turkey, Ankara, ISBN: 978 - 975 - 590 - 332 -3, Ministry of Health Publication Number: 803

GATS Turkey, (2012). Public Health Institution of Turkey Ministry of Health, Publication No: 948, 2014, Ankara, ISBN: 978-975-590-502-0

İlhan, M. N., Arıkan, Z., Kotan, Z., Tunçoğlu, T., Pınarcı, M., Taşdemir, A., Ay, B. & Koçak, N. (2016). Prevalence and socio-demographic determinants of tobacco, alcohol, substance use and drug misuse in general population in Turkey. Arch Neuropsychiatry, 53: 205-212 Doi: 10.5152/npa.2015.10050

Öksüz, E., Mutlu, E.T. & Malhan, S. (2007). Characteristics of daily and occasional smoking among youths, Public Health, 121, 349–356

Öncel, S.Y., Gebizlioğlu, Ö.L. & Alioğlu, F.A. (2011). Risk factors for smoking behavior among university, Turkish Journal of Medical Sciences, 41 (6), 1071-1080

Öztürk, A., Poyrazoğlu, S. & Şarlı, Ş. (2011). The short term effect of the law prohibiting smoking in enclosed areas upon the smoking conditions of employees in Kayseri, Turkey, Turkish Journal of Medical Sciences, 41 (1), 165-171

Palipudi, K.M., Gupta, P.C., Sinha, D.N., Andes, L.J., Asma, S. & McAfee, T. (2012). Social determinants of health and tobacco use in thirteen low and middle income countries: Evidence from Global Adult Tobacco Survey. PLoS ONE 7(3): e33466. Doi:10.1371/journal.pone.0033466

Pekel, Ö., Ergör, G., Günay, T., Baydur, H, Choussein, B., Budak, R.& Doğanay S. (2015). Smoking cessation and the effect of nicotine dependence on relapse rate in İzmir, Turkey, Turkish Journal of Medical Sciences, 45: 895-901

Saatci, E., Inan, S., Bozdemir, N., Akpinar, E. & Ergun G. (2004). Predictors of smoking behavior of first year university students: Questionnaire Survey, Croatian Medical Journal, 45(1):76-79,

Sağlam L. (2012). Investigation of the results of a smoking cessation clinic and the factors associated with success, 2012, Turkish Journal of Medical Sciences, 42 (3), 515-522

Geliş Tarihi: 3 Ekim 2019
Kabul Tarihi: 13 Kasım 2019
Araştırma Makalesi

TurkStat. (2019). Turkey Health Interview Survey 2016

Ukert, B. (2017). The short- and long-run effects of smoking cessation on alcohol consumption", International Journal of Health Economics and Management, 17:495–519

WHO. (2018).WHO Global Report on Trends in Prevalence of Tobacco Smoking 2000–2025, second edition. Geneva: World Health Organization, Available:http://www.who.int/tobacco/publications/surveillance/trends-tobacco-smoking-second-edition/ Accessed on 25 June 2019

WHO. (2018b). World No Tobacco Day 2018: Tobacco breaks hearts – choose health, not tobacco. Geneva: World Health Organization; 2018 (WHO/NMH/PND/18.4). Licence: CC BY-NC-SA 3.0 IGO.

WHO. (2019). DON'T LET TOBACCO TAKE YOUR BREATH AWAY, Choose Health Not Tobacco 31 May World No Tobacco Day) Available: https://www.who.int/campaigns/world-no-tobacco-day/world-no-tobacco-day-2019/Accessed on 27 June 2019.

WHO. (2019 b). Report on the Global Tobacco Epidemic 2019. Geneva: World Health Organization; 2019. Licence: CC BY-NC-SA 3.0 IGO. Available: https://www.who.int/tobacco/global_report/en/ Accessed on 01 August 2019

Acknowledgments

Data set used in this study is provided from Turkish Statistical Institute.