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Research Article

Comorbid Conditions and Social Determinants of Smoking in an Adult Population

Yetişkin Bir Populasyonda Sigara İçmeye Etki Eden Sosyal Özellikler ve Komorbid Durumlar

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Abstract

Tobacco smoking is a significant risk factor for a variety of chronic disorders, such as chronic obstructive pulmonary disease (COPD), lung cancer, cardiovascular diseases, and other forms of malignancies. In this study, we investigated the comorbid medical conditions and sociodemographic features that contribute to disparities in tobacco smoking prevalence in the adult population. We included volunteers who participated in events for the "World COPD day" in 4 consecutive years (i.e., 2014, 2015, 2016, and 2017) held in Bursa, Turkey. Sociodemographic features, smoking characteristics, and comorbidities were recorded. A total of 747 volunteers who were 47.1±14.5 [16-84] years of age and smoked 24.1±20.91 pack-years were included. The study population consisted of 405 (54.2%) males, 36.3% of which were current smokers, 23.6% ex-smokers, and 40.2% nonsmokers. Moreover, 15.7% of participants with asthma were nonsmokers and 9.4% ever-smoker (p=0.011), while 2% of participants with coronary artery disease (CAD) were nonsmoker and 6.7% were ever-smoker (p=0.003). Current smoker participants exhibited more symptoms such as cough, sputum, and wheezing (p<0.001, in both cases). In this study, we found that the factors associated with smoking in the general population are male gender and higher educational level.

Keywords

Tobacco • Smoking • Comorbidity • Symptom • Educational level

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Öz

Sigara; kronik obstrüktif akciğer hastalığı (KOAH), akciğer kanseri, kardiyovasküler hastalıklar ve maligniteler gibi çeşitli kronik hastalıklar için önemli bir risk faktörüdür. Çalışmamızda, yetişkin popülasyonda sigara içme prevalansındaki farklılıklara neden olan komorbid hastalıklar ve sosyodemografik özellikleri değerlendirmeyi amaçladık. Bursa'da ardışık 4 yıl (2014, 2015, 2016 ve 2017) "Dünya KOAH Günü Etkinlikleri"ne katılan gönüllüler çalışmaya dahil edildi. Katılımcıların sosyodemografik özellikleri, sigara kullanım durumları ve eşlik eden komorbid hastalıkları değerlendirildi. Çalışmaya katılan 747 katılımcı ortalama 47,1±14,5 [16-84] yaşında olup, 24,1±20,91 paket/yıl sigara içmekteydi. Çalışmaya katılanların 405 (%54,2)'i erkek olup; katılımcıların %36.3'ü sigara kullanmakta, %23,6'sı içip bırakmış ve %40,2'i hiç sigara kullanmamış idi. Astım ile takipli katılımcıların %15,7'si hiç sigara kullanmamış, %6,4'ü sigara kullanmış (p=0,011) iken koroner arter hastalığı ile takipli katılımcıların %2'si hiç sigara kullanmamış, %6,7'si sigara kullanmış idi (p=0,003). Sigara kullanmakta olan katılımcıların daha fazla öksürük, balgam ve hırıltı semptomunun olduğu saptandı (p<0,001, her biri için). Çalışmamızda, erkek cinsiyet ve eğitim düzeyindeki artışın sigara kullanımı ile ilişkili olduğu belirlenmiştir.

Anahtar Kelimeler

Tütün • Sigara içmek • Komorbidite • Semptom • Eğitim düzeyi

Introduction

Despite a continuous effort to raise awareness about the negative health effects of smoking, smoking prevalence in developing countries increases (Jamison et al., 2006; Ng et al., 2014). Tobacco is accountable for 7 million deaths each year around the world, over 6 million of which are related to direct tobacco use while over 890 000 are associated with nonsmokers exposed to second-hand smoke. Although the harmful effects of cigarette smoking on human health are well known, there are more than 1 billion tobacco users worldwide. According to the World Health Organization (WHO), unless a certain action plan is performed, tobacco-related deaths will rise to more than 8 million per year by 2030 (World Health Organization (WHO), 2019).

In Turkey, smoking remains a serious burden to public health and their economy. Turkey is one of the ten largest cigarette producing countries in the world, attributed to 1.7% of global production in 2006. It is also one of the world's largest tobacco leaf exporters and the 26th largest exporter of manufactured tobacco products (Bilir, Çakır, Dağlı, Ergüder, & Önder, 2009).

According to the Ministry of Health, smoking was responsible for 77% of lung cancer, 46% of upper aero-digestive tract cancers, and 52% of chronic obstructive pulmonary diseases in Turkey. Approximately one-third of cardiovascular-related deaths and 37.1% of malignancies can be associated with tobacco smoking. Literature data indicates that smoking is responsible for 25% of deaths every year. In Turkey, there are almost 110 000 people who die of smoking-related diseases each year, and it is predicted to rise to 240 000 per year by 2030 (T. C. Turkey Ministry of Health Public Health Agency, 2010).

Smoking is a significant risk factor for several diseases, such as chronic obstructive pulmonary disease (COPD), lung cancer, cardiovascular diseases, and other forms of malignancies. Quality of health differs across different population groups, arising from varying social, demographic, and economic conditions. In this study, we investigated the comorbid medical conditions, pulmonary symptoms, and sociodemographic features that contribute to disparities in tobacco smoking prevalence in the adult population.

Method

This cross-sectional study was conducted using consecutive sampling of volunteers who participated in events for the "World COPD day" in 2014, 2015, 2016, and 2017 held in Bursa, Turkey. A total of 747 volunteers who were included in this study attended these events, could speak and understand Turkish, and had no cognitive disease. Sociodemographic characteristics, smoking histories, educational levels, comorbidities, and respiratory symptoms of the participants were recorded. Our study was conducted in adherence to ethical values and by voluntary participation. Volunteers who agreed to participate in this study provided answers to the questionnaire with face-to-face interviews between patients and clinicians, anonymously.

Smoking Status

A "current smoker" is defined as someone who has smoked more than 100 cigarettes in their lifetime and has smoked in the last 28 days, whereas an "ex-smoker" is defined as someone who has smoked more than 100 cigarettes in their lifetime but has not smoked during the past year. An "ever-smoker" is defined as someone who had smoked at least 100 cigarettes in their lifetime, while a "never-smoker" is defined as someone who smoked less than 100 cigarettes and does not currently smoke.

Data Analysis

Using the SPSS software (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.) for statistical analysis, we assessed the comorbid medical conditions and sociodemographic features that contribute to disparities in tobacco smoking prevalence in the adult population. Cases with type 1 errors of less than 0.05 were considered to be statistically significant. Shapiro-Wilk test was used to assess variables that deviate from a comparable normal distribution. Continuous variables were shown as mean ± standard deviation and median [minimum:maximum] values, whereas categorical variables were shown as n (%). The chi-square test and Fisher's exact test (when Chi-square test assumptions do not hold due to low expected cell counts) were used to compare data in different groups. Based on the normality test results, a Mann–Whitney U test was used for comparisons of two groups, while a Kruskal–Wallis test was used for more than two groups.

Results

A total of 747 volunteers who were 47.1±14.5 [16–84] years of age and smoked 24.1±20.91 pack-years were included in this study. Study population consisted of 405 (54.2%) males. Demographic characteristics of the participants are summarized in Table 1.

Table 1.
Sociodemographic Characteristics, Smoking Habits, and Pulmonary Symptoms of Participants

	n=747
Age (year)	47.1±14.5 [16-84]
Gender (F/M)	342 (45.8%)/405 (54.2%)
Smoking	
Smoker	271 (36.3%)
Ex-smoker	176 (23.6%)
Nonsmoker	300 (40.2%)
Cigarettes (pack-year)	24.1±20.91 [0.5-100]
Age at smoking onset (year)	18.8±6.45 [10-63]
Educational level	
Illiterate	7 (0.9%)
Primary school	329 (44%)
High school	227 (30.4%)
University	182 (24.4%)
Comorbidity	
Hypertension	114 (15.3%)
Asthma	89 (11.9%)
DM	57 (7.6%)
CAD	36 (4.8%)
COPD	19 (2.5%)
Lung cancer	13 (1.7%)
Other malignancies	8 (1.1%)
Symptoms	
Cough	282 (37.8%)
Sputum	314 (42.0%)
Dyspnea	286 (38.3%)
Wheezing	216 (28.9%)
Effort restriction	74 (9.9%)
Loss of labor	44 (5.9%)

Data are presented as mean ± standard deviation [min: max] and n (%).
F: female; M: male; COPD: chronic obstructive pulmonary disease; CAD: coronary artery disease; DM: Diabetes mellitus.

In the general population of the study, 36.3% of participants were current smokers, 23.6% ex-smokers, and 40.2% nonsmokers. The questionnaire survey showed

that 40.7% of males and 31.0% of females were current smokers, 33.3% of males and 12.0% of females were ex-smokers, and 25.9% of males and 57.0% of females were nonsmokers. The most common comorbid medical conditions were hypertension (15.3%), asthma (11.9%), DM (7.6%), CAD (4.8%), COPD (2.5%), lung cancer (1.7%), and other malignancies (1.1%). Association of smoking status with demographic factors and comorbidities is summarized in Table 2.

Table 2.
Association of Smoking Status with Demographic Factors and Comorbidities

	Ever-smokers (n=447)	Never-smokers (n=300)	p
Age (year)	46.8±14.75	47.5±14.30	0.480[a]
	[16-84]	[18-81]	
Gender			
Female	147 (32.9%)	195 (65%)	<0.001[b]
Male	300 (67.1%)	105 (35%)	
Educational level			
Illiterate	3 (0.7%)	4 (1.3%)	<0.001[b]
Primary school	166 (37.3%)	163 (54.3%)	
High school	151 (33.9%)	76 (25.3%)	
University	125 (28.1%)	57 (19%)	
Comorbidity			
Hypertension	65 (14.5%)	49 (16.3%)	0.504[b]
Asthma	42 (9.4%)	47 (15.7%)	0.011[b]
DM	31 (6.9%)	26 (8.7%)	0.382[b]
CAD	30 (6.7%)	6 (2%)	0.003[b]
COPD	19 (2.5%)	6 (2%)	0.487[b]
Lung cancer	6 (1.3%)	7 (2.3%)	0.394[b]
Malignancies	6 (1.3%)	2 (0.7%)	0.486[c]

Data are presented as mean ± standard deviation [min: max] and n (%).
[a]: Mann–Whitney U test; [b]: Pearson Chi-square test; [c]: Fisher-Freeman-Halton test.
DM: diabetes mellitus; CAD: coronary artery disease; COPD: chronic obstructive pulmonary disease.

Furthermore, 15.7% of participants with asthma were nonsmokers and 9.4% were ever-smokers (p=0.011), while 2% of participants with CAD were nonsmokers and 6.7% were ever-smoker (p=0.003). Comorbidities such as COPD, DM, hypertension, lung cancer, and other malignancies did not show any significant difference between ever-smokers and never-smokers (p=0.487, p=0.382, p=0.504, p=0.394, and p=0.486, respectively). However, there was a statistically significant difference between ever-smokers and never-smokers in terms of educational levels (p<0.001). Subgroup analysis was used to determine which educational level was the source of the significant difference. More ever-smokers were found in high school graduate and university graduate participants compared to primary school graduate partici-

pants (p<0.001, in both cases). In addition, current smoker participants exhibited more symptoms such as cough, sputum, and wheezing (p<0.001, in both cases) (Table 3). Demographic characteristics and smoking status of participants in 4 consecutive years are summarized in Table 4.

Table 3.
Association of Smoking Status with Pulmonary Symptoms

Symptoms	Current smokers (n=447)	Ex-smokers (n=300)	Nonsmokers (n=300)	p
Cough	127 (46.9%)	50 (28.4%)	105 (35%)	<0.001[b]
Sputum	152 (56.1%)	62 (35.2%)	100 (33.3%)	<0.001[b]
Dyspnea	102 (37.6%)	65 (36.9%)	119 (39.7%)	0.808[b]
Wheezing	103 (38%)	39 (22.2%)	74 (24.7%)	<0.001[b]
Effort restriction	30 (11.1%)	22 (12.5%)	22 (7.3%)	0.138[b]
Loss of labor	18 (6.6%)	10 (5.7%)	16 (5.3%)	0.795[b]

Data are presented as mean ± standard deviation [min: max] and n (%).
[b]: Pearson Chi-square test.

Table 4.
Demographic Characteristics and Smoking Status of Participants in 4 Consecutive Years

	World COPD day events				
	2014 (n = 393)	2015 (n = 128)	2016 (n = 108)	2017 (n = 118)	p
Age (year)	48 [16-81]	47 [18-84]	43 [20-75]	50 [19-81]	0.207[d]
Gender (female)	185 (47.1%)	69 (53.9%)	26 (24.1%)	62 (52.5%)	<0.001[b]
Ever-smoker	229 (59.3%)	80 (74.1%)	70 (59.3%)	68 (53.1%)	0.008[b]
Ever-smoker (female/male)	74 (32.3%)/ 155 (67.7%)	26 (38.2%)/ 42 (61.8%)	16 (20%)/ 64 (80%)	31 (44.3%)/ 39 (55.7%)	0.011[b]
Cigarettes (pack-year)	20 [0.5-100]	20 [0.5-100]	20 [1-16]	18 [0.5-96]	0.788[d]
Age at smoking onset (year)	17 [10-55]	16 [10-35]	18 [10-39]	20 [10-63]	0.003[d]

Data are presented as mean ± standard deviation [min: max] and n (%).
[b]: Pearson chi-square test; [d]: Kruskal–Wallis test; COPD: chronic obstructive pulmonary disease.

Discussion

In this study, we aimed to evaluate comorbid medical conditions and sociodemographic features that contribute to disparities in tobacco smoking prevalence in the adult population. In the general population of the study, 36.3% of participants were current smokers, 23.6% ex-smokers, and 40.2% nonsmokers.

Furthermore, 40.7% of males and 31.0% of females were current smokers. The WHO World Health Statistics revealed that 36.1% of men and 6.8% of women world-

wide were daily smokers (Miranda-Filho, Piñeros, & Bray, 2019). In Turkey, smoking prevalence has decreased from 31.2% to 27.1% according to the Global Adult Tobacco Surveys in 2008 and 2012 (from 47.9% to 41.5% in males and from 15.2% to 3.1% in females) (World Health Organization (WHO), 2019). Previous studies have reported the association of gender, socioeconomic, and educational heterogeneity with smoking (Cavelaars et al., 2000; Graham, 1996). In northern European countries, smoking prevalence among men increased rapidly before the 1950s, followed by a substantial increase in smoking prevalence among women (Pierce, 1989). In southern European countries, the decline was apparent in men, but this was not seen in women. Although there are a few countries where women smoke as much as men, men in general tend to smoke more than women both in overall consumption and in prevalence (Guindon & Boisclair, 2003). Hosseinpoor et al. reported that women in middle-income countries showed a moderate but significant increased risk of smoking (Hosseinpoor, Parker, d'Espaignet, & Chatterji, 2011). Personal economic independence to use their earnings to purchase cigarettes could be the basis of this concept. The high probability of smoking among women in middle-income countries may be related to the view that smoking symbolizes feminine modernity and independence.

In addition to gender, one of the most significant determinants of smoking behavior is educational status. In this study, a statistically significant difference was found between ever-smokers and never-smokers in terms of educational levels. We found that more ever-smokers were found in high school and university graduate participants. Historically, tobacco epidemic in developed countries started in the elite and highly educated population and extended over to lower socioeconomic groups (Lopez, Collishaw, & Piha, 1994). Moreover, studies have shown that smoking rates are frequently highest among those with the lowest educational levels and among the poor income groups (Barbeau, Krieger, & Soobader, 2004; Rani, Bonu, Jha, Nguyen, & Jamjoum, 2003; Silva, Valente, Almeida, Moura, & Malta, 2009). This tendency has been shown to totally contradict in developing countries where the more educated people tend to avoid smoking possibly due to information availability regarding the health risks (Pampel, 2008).

In this study, the most common comorbid medical conditions were hypertension (15.3%), asthma (11.9%), DM (7.6%), CAD (4.8%), COPD (2.5%), lung cancer (1.7%), and other malignancies (1.1%). There was a statistically significant difference between ever-smokers and never-smokers in terms of asthma and CAD. Furthermore, 15.7% of participants with asthma were nonsmokers and 9.4% were ever-smokers. In a population-based international cohort study among subjects with asthma, 48% were never-smokers, 18% ex-smokers, and 26% current smokers (Cerveri et al., 2012). Cigarette smoking is a well-known significant risk factor for CAD. In our study, 2% of par-

ticipants with CAD were nonsmokers and 6.7% were ever-smokers. Participants with Comorbidities such as COPD, DM, hypertension, lung cancer, and other malignancies did not show any significant difference between ever-smokers and never-smokers. We speculated that decreased smoking prevalence in asthma but not in COPD could be because patients with COPD have a prolonged smoking history and a more severe nicotine addiction and so are less likely to be successful in smoking cessation.

Smoking is also well known to increase respiratory symptoms. We determined that current smoker participants exhibited more symptoms such as cough, sputum, and wheezing. Efendi et al. also showed that the incidence of cough, dyspnea, sputum, and chest tightness was found to be significantly higher among smokers (Efendi, Özalevli, Naz, & Kılınç, 2018). Furthermore, a study that evaluated the effects of cigarette smoking on respiratory problems and functional levels in multiple sclerosis patients showed that there were positive correlations between cigarette consumption and dyspnea on exertion, resting dyspnea, cough, and sputum (Aktan, Özalevli, & Özakbaş, 2018).

Demographic characteristics and smoking status of participants in 4 consecutive years were evaluated and it is found that there was a significant difference between these years in terms of smoking rate, age at smoking onset, and gender of ever-smokers. The highest rate of ever-smokers was in 2015 and a stepwise decrease in this rate was shown during next years. In 2017, the age at smoking onset was found to be older as compared to other years. The rate of smoking among men was highest in 2016, but it could be because most of the participants during this year were males. The study used subjective questions and was performed during the "World COPD day events." Hence, participants may have avoided reporting their smoking status, which might have led to response bias.

Conclusion

The factors associated with smoking habit in the general population are male sex and higher educational level. We speculated that decreased smoking prevalence in asthma but not in COPD could be because patients with COPD have a longer smoking history and more severe nicotine dependence and so are less likely to be successful in smoking cessation.

Ethics Committee Approval: Authors declared that the research was conducted according to the principles of the World Medical Association Declaration of Helsinki "Ethical Principles for Medical Research Involving Human Subjects", (amended in October 2013).

Informed Consent: Verbal informed consent was obtained from the patients who participated in this study.

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Author Contributions: Concept – A.G.D., Ö.A.G., N.A.A.Ö.; Design – A.G.D., Ö.A.G., N.A.A.Ö.; Supervision – E.D., M.K., E.U.; Resources - E.D., M.K., E.U.; Materials - A.G.D., Ö.A.G., N.A.A.Ö.; Data Collection and/or Processing - A.G.D., Ö.A.G., N.A.A.Ö.; Analysis and/or Interpretation - A.G.D., Ö.A.G., N.A.A.Ö.; Literature Search - E.D., M.K., E.U.; Writing Manuscript - Ö.A.G., A.G.D., E.U.; Critical Review – A.G.D., E.U., M.K.

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Genişletilmiş Özet

Yetişkin Bir Populasyonda Sigara İçmeye Etki Eden Sosyal Özellikler ve Komorbid Durumlar

Giriş

Sigara içmenin olumsuz sağlık etkileri konusunda farkındalığı artırmak için çaba gösterilmesine rağmen, gelişmekte olan ülkelerde sigara içme sıklığı artmaktadır. Tütün, dünya genelinde her yıl 7 milyon ölümden sorumludur, bu ölümlerin 6 milyonu doğrudan tütün kullanımı ile ilgili olup 890 000'den fazlası ise pasif sigara dumanına maruz kalan sigara içmeyenlerle ilişkilidir. Türkiye'de sigara içmek halk sağlığı ve ülke ekonomisi için ciddi bir yük olmaya devam etmektedir. Sigara; kronik obstrüktif akciğer hastalığı (KOAH), akciğer kanseri, kardiyovasküler hastalıklar ve maligniteler gibi çeşitli kronik hastalıklar için önemli bir risk faktörüdür. Kardiyovasküler kaynaklı ölümlerin yaklaşık üçte biri ve malignitelerin %37,1'i tütün içimi ile ilişkilidir. Sağlık kalitesi, farklı sosyal, demografik ve ekonomik koşullardan kaynaklanan farklı nüfus gruplarına göre farklılık göstermektedir. Çalışmamızda, yetişkin popülasyonda sigara içme prevalansındaki farklılıklara neden olan komorbid hastalıklar ve sosyodemografik özellikleri değerlendirmeyi amaçladık.

Yöntem

Bursa'da ardışık 4 yıl (2014, 2015, 2016 ve 2017) "Dünya KOAH Günü Etkinlikleri"ne katılan gönüllüler çalışmaya dahil edildi. Katılımcıların sosyodemografik özellikleri, sigara kullanım durumları ve eşlik eden komorbid hastalıkları değerlendirildi. Son 28 gün içerisinde ve yaşam boyu 100'den fazla sigara kullanan bireyler "current smoker", yaşam boyu 100'den fazla sigara kullanan ancak geçtiğimiz yıl sigara kullanmayan bireyler "ex-smoker" olarak değerlendirildi. Yaşam boyu en az 100 sigara içen olgular "ever smoker", yaşam boyu 100 sigaradan az sigara içen ve şuanda sigara kullanmayan bireyler "never smoker" olarak değerlendirildi.

Çalışmamız etik değerlere bağlı olarak gönüllü katılımla yürütülmüştür. Çalışmaya katılmayı kabul eden gönüllüler, ankete klinisyenler ile yüz yüze görüşülüp kişisel bilgiler korunarak yanıt verdiler.

Bulgular

Çalışmaya katılan 747 katılımcı ortalama 47,1±14,5 [16-84] yaşında olup, 24,1±20,91 paket/yıl sigara içmekteydi. Çalışmaya katılanların 405 (%54,2)'i erkek olup; katılımcıların %36.3'ü sigara kullanmakta, %23,6'sı içip bırakmış ve %40,2'i hiç sigara kullanmamış idi. Astım ile takipli katılımcıların %15,7'si hiç sigara kullanmamış, %6,4'ü sigara kullanmış (p=0,011) iken koroner arter hastalığı ile takipli katılımcıların %2'si hiç sigara kullanmamış, %6,7'si sigara kullanmış idi (p=0,003). KOAH, DM, hipertansiyon, akci-

ğer kanseri ve diğer malignitelerin hiç sigara kullanmayan ve sigara kullanan katılımcılar arasında anlamlı farklılık oluşturmadığı saptandı (sırasıyla, p=0,487, p=0,382, p=0,504, p=0,394 ve p=0,486). Sigara kullanmış ve hiç sigara içmemiş katılımcılar arasında eğitim düzeyleri açısından anlamlı farklılık bulunmaktaydı (p<0,001). Sub-grup analizlerinde lise ve üniversite mezunu katılımcıların ilköğretim mezunu olanlara göre daha fazla sigara kullandığı belirlendi. Sigara kullanmakta olan katılımcıların daha fazla öksürük, balgam ve hırıltı semptomunun olduğu saptandı (p<0,001, her biri için). Katılımcıların birbirini takip eden 4 yıldaki özellikleri değerlendirildiğinde yıllar arasında sigara içme oranı, sigara içmeye başlama yaşı ve sigara içenlerin cinsiyeti açısından anlamlı bir fark olduğu tespit edildi (sırasıyla, p=0,008, p=0,003 ve p=0,011).

Tartışma

Çalışmamızda, erkek cinsiyet ve eğitim düzeyindeki artışın sigara kullanımı ile ilişkili olduğu belirlenmiştir. Çalışmamızda erkeklerin %40,7'si ve kadınların% 31,0'ı halen sigara içmekteydi. Dünya Sağlık Örgütü Küresel istatistikleri, erkeklerin% 36,1'inin ve kadınların %6,8'inin sigara içicisi olduğunu ortaya koymuştur. Önceki çalışmalar cinsiyet, sosyoekonomik düzey ve eğitim farklılıklarının sigara içme üzerine etkilerinin olduğunu göstermiştir. Hosseinpoor ve ark. orta gelirli ülke grubundaki kadınların ılımlı fakat önemli derecede artmış sigara kullanma riski olduğunu göstermiştir. Orta gelirli ülkelerde, kadınlar arasında sigara içme oranı yüksekliğinin sigara içmenin kadınlarda bağımsızlığı ve modernliği simgelediği görüşüyle ilişkili olabileceğini düşündürmektedir.

Sigara içmenin solunum yolu semptomlarını arttırdığı da bilinmektedir. Sigara içen katılımcıların öksürük, balgam ve hırıltı gibi semptomların daha fazla olduğunu belirledik. Efendi ve ark. öksürük, nefes darlığı, balgam ve göğüs sıkışması sıklığının sigara içenler arasında anlamlı derecede yüksek olduğunu göstermiştir.

Katılımcıların birbirini takip eden 4 yıldaki demografik özellikleri ve sigara içme durumları değerlendirildi ve bu yıllar arasında sigara içme oranı, sigara içmeye başlama yaşı ve sigara içenlerin cinsiyeti açısından anlamlı bir fark olduğu tespit edildi. En yüksek düzeyde sigara içme oranı 2015 yılında gerçekleşmiş ve bu oranın ilerleyen yıllarda kademeli olarak azalmış olduğu görülmüştür. 2017 yılında sigara içmeye başlama yaşı diğer yıllara göre daha ileri bulunmuştur.

Çalışmada "Dünya KOAH günü etkinlikleri" sırasında subjektif sorular kullanılmıştır. Bu nedenle, katılımcılar sigara içme durumlarını bildirmekten kaçınmış olabileceği ve bu durumun da yanıt yanlılığına yol açmış olabileceği düşünülmektedir.

Astımda sigara içme sıklığının azlığı, ancak KOAH'ta böyle bir azalmanın görülmemesi, KOAH'lı hastaların daha uzun bir sigara içme öyküsüne ve daha şiddetli nikotin bağımlılığına sahip olması ve bu nedenle sigarayı bırakmada başarılı olma olasılığının düşük olması nedeniyle olabileceğini düşündük.