

ORIGINAL RESEARCH

Use of Tobacco and Tobacco Products By Public Employees in Konya Province and the Support Status of the Tobacco Control Law

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Main Points

- The frequency of smoking among the personnel working in public institutions was found to be higher than the country average.
- Specifically, 36.5% of the participants were current smokers.
- The highest frequency of smoking (54.4%) was found among the provincial police department personnel.
- Almost all of the personnel supported and complied with the ban on smoking in closed areas.

Abstract

This study aimed to evaluate the frequency of the use of tobacco and tobacco products among public employees in Konya province and support for the tobacco control law. This cross-sectional, analytical study was carried out on 4,874 public employees. The participants were surveyed about the use of tobacco and tobacco products, the tobacco control law, and smoking ban in closed areas. Of the participants, 59.7% were current and/or occasional users of various tobacco products. Specifically, 36.5% of the participants were current smokers. Men smoked 2,272 times more than women ($p<0.001$) (Odds ratio 2.272, confidence interval 2.003-2.576). The highest frequency of smoking (54.4%) was found among the provincial police department personnel. Of the participants, 93.0% supported the ban on smoking in closed areas, and 28.3% supported increasing its coverage. The frequency of smoking among the personnel working in public institutions in our province was found to be higher than the national average. Despite this, almost all the personnel supported and implemented the smoking ban in closed areas. In-service training on smoking and its harmful effects should be increased, and those who plan to quit smoking should be supported.

Keywords: Public employees, tobacco and tobacco products, tobacco control law

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Introduction

The global tobacco epidemic ranks first among the preventable causes of disease and death and causes more than 7 million deaths worldwide every year. There are more than 5,300 chemicals in cigarette smoke, and over 70 of them have been defined as substances with cancer-causing effects. According to the data of the World Health Organization (WHO), the frequency of smoking in

people aged 15 and over worldwide is 26.0%, and according to the results of the Global Adult Tobacco Survey (GATS) conducted in Turkey in 2016, 29.6% of people aged 15 and above use tobacco and tobacco products every day or occasionally (WHO 2015, GATS 2016). By law no. 4,207 for the prevention of harmful effects of tobacco products, dated March 03, 2008, and law no. 5,727, amended with effect from the date of the first article of May 19, 2008, incentive advertising, promotion, and incen-

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tive campaigns for smoking are prohibited in Turkey. After the national tobacco control program action plan implementation, all closed areas have been accepted as smokeless airspaces (Official Gazette No. 26,761) since July 19, 2009. This is a supply, demand, and harm reduction strategy that aims to improve human health by eliminating or reducing tobacco use and exposure to tobacco smoke. The goal is to combat the harm that tobacco causes to the society and the state. The collaboration of many national and international agencies is required for tobacco control (Ministry of Health - Handbook for Fight against Tobacco Addiction [For Physicians] 2010).

The Framework Convention for Tobacco Control (the first international agreement against the market creation strategies of tobacco companies) was accepted by the 56th World Health Assembly of the WHO on May 21, 2003. This agreement was approved by Turkey with law no. 5,261 and entered into force after it was published vide Official Gazette No. 25,656, dated November 30, 2004.

The Turkish ministry of health prepared a national tobacco control program covering the years 2006 to 2010 to plan the activities to be carried out within the scope of the tobacco control framework contract and to protect our citizens, especially the youth, by controlling cigarette consumption in Turkey. The main goal of the program, which was included in the annex of the prime ministry circular numbered 2006/29, published in Official Gazette No. 26,312, dated October 7, 2006, was to increase the percentage of nonsmokers above the age of 15 to over 80% and below the age of 15 to 100% by 2010. The targets and strategies included in the national tobacco control program were determined in cooperation with the relevant ministries, public institutions and organizations, universities, and non-governmental organizations responsible for their fulfillment (Handbook for Fight against Tobacco Addiction [For Physicians] 2010).

After the enforcement of these laws, successful results have been obtained in the field of tobacco control; however, the data have not improved in recent years. The frequency of smoking, which was 27.1% in 2012, increased to 29.6% in 2016. Therefore, the efforts taken seem insufficient to reach the expected target. In a study conducted in 2012 on tobacco use in public institutions, the prevalence of smoking was 54%, well above the average in Turkey. However, the majority of the participants supported smoking bans (Tuluçcu et al., 2012). Increasing the smoking ban and controls, especially in closed areas, may have led to a decrease in smoking frequency in public institutions. A scan of the literature shows no previous study covering all public institutions related to tobacco use in Konya. Therefore, this study aimed to evaluate the frequency of tobacco and tobacco product use among the employees of the public institutions on the Konya Provincial Tobacco Control Board and the support for the tobacco control law.

Methods

Research Type, Place, and Universe

This study was planned as a cross-sectional, analytical study. The study population consisted of individuals working in public institutions and serving on the Konya Provincial Tobacco Board between 2017 and 2018. The Konya Provincial Tobacco Control Board controls the regulations against tobacco use

throughout the province. The public institutions included in the Provincial Tobacco Control Board in Konya are the Konya Provincial Governorship, the Municipality, Provincial Directorate of National Education, Provincial Health Directorate, Universities, Youth and Sports Provincial Directorate, Provincial Directorate of Family and Social Policies, Provincial Gendarmerie Command, and Provincial Police Department. The study universe consisted of approximately 45,000 civil servants who were public employees working in Konya's central districts between September 2018 and December 2018. According to the GATS finding of a tobacco usage rate of 29.6% among individuals aged ≥ 15 years, the sample size was calculated using the following formula: $n = \frac{N \times p \times q \times z^2}{(N-1) \times d^2 + z^2 \times p \times q}$. The plan was to reach 4,380 people with a 95% confidence interval and a 5% margin of error. However, the sample size was calculated separately for each public institution, and an attempt was made to keep the distribution equal. The 10% systematic sampling method was used according to the registration number list obtained from the personnel office of the relevant organizations. Inaccessibility owing to reasons such as being on leave or refusing to participate in the study was taken into account. Those who did not agree to participate in the study and those who did not complete the questionnaire were excluded. Data collection was completed with 4,874 participants who applied for this study by adhering to the planned date range. The study was completed between September and December 2018.

Ethical Approval of the Study

Ethical permission for the study was obtained from the Necmettin Erbakan University, Meram medical faculty's medicine and non-medical device research ethics committee (number 2018/1354, dated 11/05/2018) before starting the study. The participants were informed about the study, and their verbal consent was obtained in accordance with the principles of the Declaration of Helsinki. As our study was directed at the employees of the Konya Provincial Governorship, written permission was also obtained from the Konya Provincial Governorship.

Questionnaire Form

The first part of the questionnaire form used in our study recorded the age, sex, marital status, education, and years of employment of the participants to determine their sociodemographic characteristics. The participants also filled out a questionnaire about their tobacco use habits, the age at which they started smoking, the reason, their ideas about quitting, and their smoking addiction levels. Those who had smoked at least 100 cigarettes in their lifetime and those who currently smoked at least 1 cigarette a day were categorized as "current smokers," those who had smoked at least 100 cigarettes in their lifetime and had since quit were categorized as "quit smoking," and those who had smoked fewer than 100 cigarettes in their lifetime and were not current smokers were categorized as the "never smoked" group. A survey of 40 questions on the tobacco control law and smoking ban in closed areas was also taken by the participants. The questionnaire was filled out by the researchers using face-to-face interviews. The researchers visited the employees of the institution where the questionnaire was being applied and introduced the questionnaire to them before asking them to fill the forms. The participants answered the questions voluntarily, and the questionnaires were collected after being filled out by the participants themselves.

Table 1.
The Use of Tobacco and Tobacco Products of the Participants

Parameters	Use of tobacco and tobacco products							
	Never smoker		Occasional smoker		Current smoker		Ex-smoker	
	n	%	n	%	n	%	n	%
Smoking	2326	47.8	469	9.6	1312	26.9	767	15.7
Hookah	3719	76.3	429	8.8	27	0.6	699	14.3
Pipe	4718	96.8	56	1.1	14	0.3	86	1.8
Cigar	4474	91.8	227	4.6	14	0.3	159	3.3
Chewing tobacco	4826	99.0	20	0.4	5	0.1	23	0.5
Wrapped tobacco	4276	87.8	289	5.9	53	1.1	256	5.2

Table 2.
Smoking at Home/Workplace and Addiction Levels of Smokers

Parameters	n	%
Smoking status of guests coming to your home		
Homecoming guests do not smoke	1,640	33.6
Home guests smoke with permission	2,578	52.9
Guests who come home smoke without permission	297	6.1
Other	359	7.4
Smoking status in your home		
No smoking anywhere in the house	1,487	30.5
Only smoke in the kitchen or balcony	2,792	57.3
Smoking throughout the house (living room)	232	4.8
Other	363	7.4
What is the smoking policy where you work?		
Not smoking in closed areas	4,035	82.8
There is a designated area for smoking	525	10.8
Anywhere	132	2.7
Other	182	3.7
Where do you mostly smoke? (n=1781)*		
At home	679	38.1
In the workplace	380	21.3
In the car	251	14.1
Open field	549	30.9
Nicotine dependence level (n=1781)*		
Low dependent (0-4 point)	1169	65.6
Medium dependent (5-6 point)	394	22.1
High dependent (7-10 point)	218	12.3

*Only smokers answered this question. More than one answer was given

Fagerström Test for Nicotine Dependence

The Fagerström test for nicotine dependence (FTND) is a widely used 6-item questionnaire, often used as a measure of physical dependence on nicotine. The FTND was developed by Fagerström in 1989 to determine the degree of physical dependence on cigarettes. A study of the validity and reliability of the 6-item scale in

Turkish was conducted in 2004 by Uysal et al.; higher scores indicate higher levels of smoking addiction. The first 2 items on the scale are scored as 0, 1, 2, or 3 points, the other 4 items are scored as 0 or 1 point, and the scale ranges from 0-10. The degree of nicotine dependence was classified according to the FTND score as very low (0-2 points), low (3-4 points), medium (5-6 points), high (7-8 points), or very high (9-10 points) (Fagerstrom et al., 1992). The addiction level was classified as high (7-10), medium (5-6), and low (0-4).

Statistical Analysis

The data were analyzed using Statistical Package for Social Sciences version 21.0 (IBM SPSS Corp.; Armonk, NY, USA) for Windows. Frequencies, means, standard deviations, medians, minimums, and maximums were calculated. The Chi-squared test was used for the comparison of categorical data. Values of $p < 0.05$ were considered statistically significant.

Results

The average age of the participants in the study was 39.4 ± 9.0 years, work experience was 15.1 ± 8.9 years, and 60.6% ($n=2952$) were men. The mean age for starting to smoke was 18.0 ± 4.6 years, and the average duration of smoking was 18.6 ± 9.5 years. The mean FNBT score was 3.4 ± 2.4 points. According to the FNBT results, 12.3% of the employees who smoked had high dependence, 22.1% had medium dependence, and 65.6% had low dependence. Of the 4,874 participants from different public institutions, 59.7% were current and/or occasional tobacco product users. Specifically, 36.5% of the participants ($n=1,781$) were current and/or occasional smokers, including 9.4% ($n=456$) who used hookahs, 4.7% ($n=241$) who smoked cigars, 1.4% ($n=70$) who smoked pipes, 7.0% ($n=342$) who rolled tobacco, and 0.5% ($n=25$) who chewed tobacco. The use of tobacco and tobacco products among the participants is given in Table 1. A total of 52.9% of the participants stated that guests who came home were allowed to smoke. Of the participants, 57.3% smoked only in the kitchen and/or the balcony, 82.8% did not smoke indoors where they worked, and although 10.8% stated that there was a special section reserved for smoking in the workplace, 2.7% stated that they smoked anywhere in the workplace (Table 2).

Regarding the indoor smoking ban, 93.0% of the participants supported it, and 28.3% thought that the scope of the ban should be further expanded. A total of 27.2% of the participants correctly knew that July 19, 2009 was the day when the tobacco

Table 3.
Attitudes toward Smoking Behaviors, Quitting Attempts, and Bans

Parameters	n	%
Are you a role model for the community in terms of smoking/not smoking?		
Yes	3267	67.0
No	1607	33.0
Do you support indoor smoking ban?		
Yes	4533	93.0
No	341	7.0
What do you think about the indoor smoking ban?		
The ban must continue	3019	61.9
Its scope should be further expanded	1378	28.3
Some flexibility should be shown	375	7.7
The ban should be lifted completely	101	1.3
When was the tobacco control law implemented?		
January 03, 2006	577	11.8
May 19, 2008	1576	32.3
July 19, 2009*	1327	27.2
May 01, 2010	509	10.4
I don't know	885	17.3
What is the telephone number of the smoking cessation hotline?		
Alo 112	134	2.7
Alo 155	16	0.3
Alo 171**	3530	72.4
Alo 181	345	7.1
Alo 184	370	7.6
No idea	479	9.9

19 July 2009 * correct answer. Alo 171 ** correct answer

control law was put into effect, and 72.4% were aware of the smoking cessation hotline "Alo 171" (Table 3). It was found that 43.7% of the men and 25.5% of women who participated in the study were smokers. Thus, men smoked 2.272 times more than women ($p < .0001$) (Odds ratio [OR] 2.272, confidence interval [CI] 2.003-2.576). Furthermore, 33.2% of those under the age of 30, 36.5% of those aged 30-40, and 37.6% of those over the age of 40 were still smoking. The correlation between age and smoking status was statistically significant ($p < 0.001$), with the frequency of smoking increasing with increasing age. It could be said that younger participants smoked less than the older ones. Although 39.0% of those who had been working for 11-30 years smoked, the smoking frequency among those with other intervals of working years was lower ($p < 0.001$) (Table 4). There was a statistically significant relationship between the smoking frequency of employees working in different institutions ($p < 0.001$). When the smoking statuses of the public institutions of the province in which the study was conducted were evaluated separately, the highest smoking frequency (54.4%) was found

among the personnel of the provincial police headquarters. This was followed by the provincial health directorate (43.1%), the provincial gendarmerie (41.1%), and municipality employees (38.9%) (Table 5).

Discussion

The frequency of use of tobacco and tobacco products, which cause chronic diseases that threaten human life and cause premature death, is now gradually increasing. According to the Turkish Statistical Institute, based on the 2016 GATS results, the prevalence of smoking among adults aged 15 years and older was 27.1%. This frequency was 44.1% in men and 19.2% in women. Approximately, 11.1 million men and 3.6 million women smoke in Turkey (GATS 2016). In this study, we found that 59.7% of the personnel working in the public institutions in Konya province used tobacco and tobacco products, with 36.5% smoking cigarettes and 9.4% smoking hookahs. This frequency was well above the national average. The data from this study, obtained by choosing the participants from only among civil servants, may not reflect the general data of the country as a whole. In a population-based study conducted in Kocaeli province in 2011, the prevalence of smoking was found to be 32.3% (Argun et al., 2011). The mean age at the time of smoking initiation among our participants was 18.02 ± 4.6 years. According to the data from the WHO, the age of smoking initiation has dropped to below 15 years. In other studies conducted in Turkey, the age of smoking initiation was found to be between 15 and 19 years, similar to our findings (Kutlu et al., 2008; Coskun et al., 2010; Ozer et al., 2013). In this study, those who scored between 0 and 4 on FTND were defined as mildly nicotine dependent, those who scored between 5 and 6 as moderately dependent, and those who scored between 7 and 10 as severely nicotine dependent. According to the FTND scores obtained in our study, 12.3% of the participants were found to be highly dependent, 22.1% moderately dependent, and 65.6% had low dependence. The low level of addiction suggests that the necessary information and support methods for smoking cessation are effective. In a study conducted in another public institution, on the healthcare workers at the Ataturk University medical facility, smoking frequency was 36.9%, the age of smoking initiation was between 7 and 20 years, and only 11.9% of the smokers had a very high level of addiction (Saglam et al., 2010). In another study, 13.3% of medical personnel rarely smoked, 27% smoked regularly, men smoked more than women, and those who worked in the surgical department smoked more than those working in the internal department. Of the smokers in the study, 37.7% were only moderately addicted, and 18% had low dependence. The average FTND score of men (4.4 ± 2.9) was higher than that of women (2.9 ± 2.6) (Aliskin et al., 2015). Another study, unlike our study, found no significant relationship between smoking status and sex, marital status, occupation, or educational status (Deveci et al., 2005). When the smoking status of the public institutions of the province in which this study was conducted were evaluated separately, the highest smoking frequency (54.4%) was found among the personnel of the provincial police headquarters. This was followed by the provincial health directorate (43.1%), the provincial gendarmerie (41.1%), and municipality employees (38.9%). In a study conducted among public personnel in Malatya in

Table 4.
Comparison of Some Characteristics and Smoking Situations

Parameters	Current smoker		Never smoker		Ex-smoker		Total	χ^2	p
	n	%	n	%	n	%			
Gender									
Male	1291	43.7	1057	35.8	604	20.5	2952	434.887	<.001
Female	490	25.5	1269	66.0	163	8.5	1922		
Marital status									
Married	1464	35.8	1932	47.2	695	17.0	4091	30.654	<.001
Unmarried	317	40.5	394	50.3	72	9.2	783		
Age									
<30 year	251	33.2	463	61.2	43	5.7	757	169.986	<.001
30-40 years	616	36.5	865	51.3	205	12.2	1686		
≥40 year	914	37.6	998	41.1	519	21.3	2431		
Education status									
High school and below	384	40.6	387	40.9	175	18.5	946	39.280	<.001
License	1145	37.2	1476	48.0	456	14.8	3077		
Graduate	252	29.6	463	54.4	136	16.0	851		
Duration of work									
1-10 years	609	34.6	984	56.0	165	9.4	1758	211.698	<.001
11-30 years	1079	39.0	1219	44.0	472	17.0	2770		
≥30 years	93	26.9	123	35.5	130	37.6	346		

Table 5.
Smoking status among public employees in Konya

Parameters	Current Smoker		Never Smoker		Ex-Smoker		Total
	n	%	n	%	n	%	
Necmettin Erbakan University	127	34.1	192	51.6	53	14.3	372
Selcuk University	147	32.1	229	50.0	82	17.9	458
National Education Directorate	833	37.0	1088	48.3	331	14.7	2252
Provincial Health Directorate	264	43.1	251	41.0	97	15.9	612
Provincial Police Department	173	54.4	87	27.4	58	18.2	318
Provincial Directorate of Family and Social Policies	88	35.3	118	47.4	43	17.3	249
FAL * provincial directorate	20	35.7	16	28.6	20	35.7	56
Provincial Gendarmerie Command	99	41.1	124	51.5	18	7.5	241
Konya municipalities	123	38.9	128	40.5	65	20.6	316

FAL *: Food, Agriculture and Livestock

2011, smoking prevalence was 58.4% throughout the province, with the highest smoking frequency found among employees of the tuberculosis dispensary (75%), followed by employees of the ministry of national education (72%), the provincial police department (68.4%), and the municipality (61.1%) (Tulu et al., 2012). In a study conducted with the police working in our region in previous years, the smoking frequency was found to be 41.9%, and 64.0% of smokers had a very low level of addiction (Kutlu et al., 2008). In yet another study conducted among the police, 87.5% of the participants tried to smoke, 62.3% of

them were still smoking, and 22.7% of the smokers consumed ≥20 cigarettes per day (Deveci et al., 2005). As can be seen, the frequency of smoking among law enforcement employees is very high. This situation may be explained by the fact that they have more stressful working conditions owing to factors such as long daily working hours, shifts, and patrols as well as the structure of the system and working discipline. Considering the role of police officers as being an example for society, they are an important professional group in terms of smoking habits.

In our study, the smoking frequency of the personnel working for the ministry of national education was found to be 37%. A study by Fidan et al. on compliance with law no. 4207 found that the smoking frequency among teachers in Afyon was 32.5% (Fidan et al., 2006). Another study conducted with teachers in Bursa province in 2010, revealed that 33.6% of the male teachers and 25.4% of the female teachers were smokers (Ozer et al., 2013). In this study, 43.7% of men and 25.5% of women were smokers. A statistically significant difference was thus found between sex and smoking status, with men smoking 2.27 times more than women. Although the prevalence of male smoking was similar to the national average, it has been observed here that the smoking prevalence was also high among working women in our region.

In a study conducted with primary school teachers in the city of Urfa, it was found that 29.1% of the teachers smoked. The frequency of smoking among male teachers (35.5%) was higher than that of female teachers (18.5%) (Gencer et al., 2007). The prevalence of smoking among teachers in our region was found to be higher than the societal average. Our teachers have to be aware that they are role models for the society and students and must comply with the smoking ban in school and indoor areas. They should both educate the students about smoking and its adverse effects and set an example by not smoking themselves.

In a study on the frequency of tobacco use, 38.2% of the participants reported active smoking at home, and 16.5% of them had no designated nonsmoking place at home and stated that smokers could smoke anywhere in the house. It was further observed that women who did not smoke were exposed to passive smoke at home more frequently than men who did not smoke (Gucuk & Yildirmaz, 2019). In our study, 52.9% of the participating public personnel stated that guests who came to their homes were allowed to smoke, and 57.3% stated that they smoked only in the kitchen and/or the balcony at home. Many countries in the recent years have implemented legal regulations to protect the society from the harmful effects of smoking and to reduce the use of tobacco products. As of April 2009, 29 countries have implemented a number of strategies to provide different levels of 100% smoke-free airspace. Turkey was placed among the first 10 countries with a high prevalence of smoking. Smoking has been banned in all public and private workplaces in the country since May 2008 (including bars and restaurants in July 2009) (Bilir et al., 2012, National Tobacco Control Programme and Action Plan of Turkey, 2008-2012.). For such arrangements to be successful, they must be strongly supported by the whole society. Almost all of the participants in our study stated that they fully supported these regulations.

Similarly, studies have found that support rates for the ban on smoking in closed areas are high. In a study conducted with 868 people in a public workplace in Kayseri, the new law was supported by 68.7% of the people, whereas 37.7% of those included in the study were still smoking, and 54.1% of these stated that the number of cigarettes they smoked in the workplace decreased after smoking was prohibited there (Ozturk et al., 2011). In studies conducted by Koç et al. among healthcare

workers, 70.7% of the smoking personnel approved of the implementation of the law, and 53.3% of them agreed that those who violated the law on smoking in indoor areas should be fined (Koç et al. 2015).

Similar support rates have been reported in other countries where smoke-free legislation has been enforced. For example, support rates were reported to be 69% in New Zealand, 75% in the US state of California, and about 80% in China and Uruguay (WHO 2015). In a study conducted with individuals who smoked in Ireland, which was the first country to ban smoking in bars and restaurants, 83% of the participants stated that the regulations banning smoking in general were “good” or “very good” (Fong et al., 2006). In a study conducted with public personnel working in the Malatya province, 81.3% of the participants supported the law. Support was lower among current smokers than nonsmokers. With the implementation of the law, it was found that active smoking decreased in public institutions (Tuluçcu et al., 2012). In a study conducted with 138 students in a health services vocational school, 83.3% of all participants and 51% of smokers supported the new law, and more than 80% supported the implementation of the ban in hospitals (Durusoy et al., 2011).

Established by the ministry of health to provide information and support to those who want to quit smoking, the ALO 171 smoking cessation phone hotline helps anyone seeking to quit smoking. In a study conducted by Emre et al., 60.2% of the participants knew the ministry of health smoking hotline number correctly (Emre et al., 2019). In our study, 72.4% of the public personnel reported ALO 171 correctly as the hotline number. The support for smokeless airspace practices and the high frequency of smoking despite knowing the number of the smoking cessation hotline in our study was thought-provoking.

Limitations and Directions/Suggestions for Future Research

One of the biggest limitations of our study was that the participants in this study were selected from only civil servants. Therefore, the results found may not reflect the general data of the country as a whole. In addition, participants in the study were not asked about e-cigarette use.

In conclusion, the frequency of smoking among the personnel working in public institutions was found to be higher than the country average. Despite this, almost all of the personnel supported and complied with the ban on smoking in closed areas. The most important task in the fight against smoking falls on the public personnel, who are always in the public eye and who often have higher education levels. In-service training on smoking and its harmful effects should be increased, and those who think about quitting smoking should be supported. Controls should be increased, and necessary warnings should be made to ensure compliance with the smoking ban in public institutions. Tighter controls on smoking in closed areas and increased penalties will contribute to the reduction of smoking. All public buildings and gardens should be considered smoke-free airspaces, and it should be ensured that the action plan to fight against smoking is carried out effectively with relevant signs and brochures.

Ethics Committee Approval: Ethics committee approval was received for this study from the Non-Medical Device Research Ethics Committee of Necmettin Erbakan University, Meram Medical Faculty's Medicine (number 2018/1354, dated 11/05/2018).

Informed Consent: Verbal informed consent was obtained from the participants who participated in the study. As our study was directed at the Konya Provincial Governorship employees, written permission was also obtained from the Konya Provincial Governorship.

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