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ORIGINAL ARTICLE

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A Study Examining Compliance with the Anti-Tobacco Law Nb. 4207 Inside Taxis

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Abstract

OBJECTIVES: This observational study assessed compliance with the anti-tobacco Law Nb 4207 with regard to taxis in Çankaya district, Ankara.

MATERIAL AND METHODS: This descriptive study was conducted in Kızılay, Kuğulu, and Tandoğan intersections on January 18-23, 2016 between 9.00-11.00 and 14.00-16.00 hours in Ankara. Data regarding the status of the taxi (either cruising or not), smoking inside taxis, smoking status of the taxi drivers and/or clients, location of the clients in the taxi, presence of a child in the taxi, and status of the windows (open or not) were recorded using a data-gathering form.

RESULTS: Three thousand six hundred fifty-six taxis were evaluated, of which 79 (2.2%) taxi drivers were observed smoking. Clients were observed smoking in 17 taxis (1.3%). Ninety-four taxi drivers and/or clients (2.6%) were observed smoking. Taxi drivers smoked more frequently in the absence of a client. In addition, a smoking client influenced the taxi driver's smoking status ($p<0.001$).

CONCLUSION: Violation of the anti-tobacco Law Nb 4207 was observed. In this regard, the number of inspections needs to be increased. Systematic training programs for the taxi drivers regarding the risks of tobacco should be a priority. Preventive studies concerning the hazards of passive smoking should be also conducted at a community level.

KEYWORDS: Tobacco, policy, smoke-free, taxi, compliance

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INTRODUCTION

Tobacco use is one of the most important health problems worldwide. The World Health Organization (WHO) has defined smoking as biological, sociological, and psychological poisoning [1].

Approximately 1.5 billion people worldwide use tobacco. In Turkey, 14.8 million people (27.1%) use tobacco and tobacco products. Among these, 94.8% smoke cigarettes. According to a report prepared by the Turkish Statistical Institute in 2012, the prevalence of smoking in males was 41.4% and 13.1% in females [1]. In previous studies, it has been found that drivers, police officers, and press members were those who smoked the most; three-fourths (74.3%) of intercity bus drivers and two-thirds of police officers and press members were found to be smokers [2].

The harmful effects of the use of tobacco and tobacco products on human health have been known for many years. Every year, approximately six million people worldwide die from tobacco use. If this situation is not brought under control, it is estimated that the number of deaths will reach eight million by 2030 [3]. Every year, tobacco use causes more deaths than the total number of deaths caused by Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS)/, substance abuse, alcohol use, traffic accidents, and gunshot wounds [4].

Tobacco use has serious adverse effects on health as well as the environment and economy. In a smoking environment, the quality of indoor air deteriorates; in this way, nonsmokers are passively influenced and harmed by cigarette smoke [5]. This situation is also referred as "passive smoking" or "secondhand smoke" [6]. According to the estimates of the WHO, there are more than 600,000 deaths per year due to passive smoke exposure [7]. There has been an increasing amount of information suggesting that harm due to smoking is not limited to only smokers and that the risk of cancer, cardiovascular diseases, and stroke-related mortality increases in those who are passively exposed to smoke [5]. Many different groups of people are under risk of passive smoke exposure. These risks are more prevalent in places that are open to the public, houses, public transportation vehicles, and taxis [5]. Violations of the Law No. 4207 on "the Prevention and Control of the

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Hazards of Tobacco Products" are encountered in everyday life in public transportation vehicles and taxis [2]. According to the results of a survey in which 135 taxi drivers participated in Ankara in 2008, it was found that 59.3% of the drivers were smokers and that they mostly smoked in taxis [2].

Struggle with tobacco use and passive smoking is an important issue in health promotion [8]. The prevention of health-threatening risks is also an important public responsibility to ensure that both the individual and the community remain at the highest level of health [9]. Due to this responsibility, it is necessary to prevent smoking in taxis and to fully comply with Law No. 4207 [10].

Considering all these reasons, this study aimed to determine whether smoking is allowed in moving vehicles and at the red light and to determine whether there is a difference among vehicles that are moving and those that are at the red light in terms of the smoking status in the province of Çankaya, Ankara.

MATERIAL AND METHODS

Type of Research
This research is a descriptive, epidemiological study.

Variables of the Study
The independent variables are smoking in the taxi (smoking status of the taxi driver and smoking status of the customer/passenger, if any). The defining variables are the presence of a customer in the taxi, the presence of children in the taxi, whether the taxi driver uses the mobile phone in the taxi, whether the windows of the taxi are open or closed, and the place where the customer was seated in the taxi.

Source and Collection of Data
Observations made on taxis at certain hours at the intersection formed the data source.

Ethical Issues
Ethics committee approval was not required and obtained for two basic reasons. First, the study was conducted on a purely observational basis far from the objects using a check list. Second, the object of the study was "taxi" and in this sense, there was no communication/contact with the people inside the taxis and no personal data about the individuals were collected. Data obtained from the research were not used except for the study purpose. When the observation was made, descriptive properties such as the license plate and cigarette brand were not recorded.

Statistical Analysis
The information in the data sheets that were prepared was analyzed using IBM Statistical Package for the Social Sciences 21.0 (IBM Corp. Released 2012; IBM SPSS Statistics for Windows, Armonk, NY, USA, Version 21.0, Provided by Hacettepe University Libraries). Frequency and percentage distributions were obtained from the statistical analysis, and the chi-square test was used for the comparison of groups.

Universe and Sample of the Research
The universe of the research was constituted by taxis passing Ziya Gökalp street between January 18th and 19th 2016 in Çankaya, Ankara; taxis passing the Kuğulu intersection between January 20th and 22nd 2016; and taxis passing the Tandoğan intersection on January 23rd 2016 at 09:00-11:00 and at 14:00-16:00. Sixty-three taxis in which the smoking status of the driver, the presence of a customer, the smoking status of the customer, the place where the customer was seated in the taxi, and the presence of a child in the taxi could not be fully assessed were excluded from the survey. As a result, analyses were conducted on 3656 taxis (Figure 1).

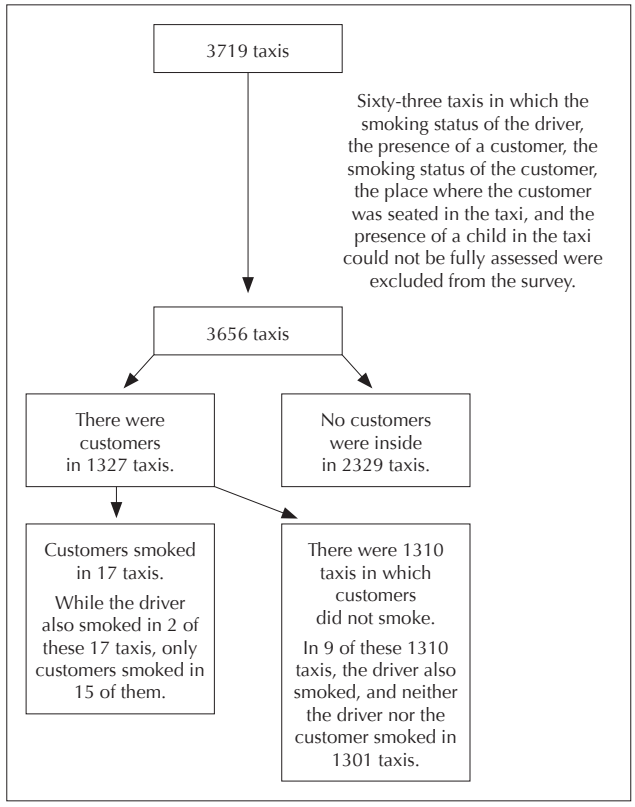

Figure 1. Flowchart for the observations

Figure 2. Picture of the start of the Kızılay Square-Ziya Gökalp street

Location of the Research
The research was performed at certain intersections in the Çankaya province of Ankara. These intersections are Kızılay Square-Ziya Gökalp Street, Kuğulu intersection-Atatürk Boulevard, and Tandoğan intersection-Dögol Street.

A photograph of the start of Kızılay Square-Ziya Gökalp Street is shown in Figure 2. Taxis waiting and/or moving at the red light were observed on both sides of the street.

Figure 3. Picture of the Kuğulu intersection

Figure 4. Picture of Tandoğan Intersection Dögol Street

A photograph of the Kuğulu intersection is shown in Figure 3. Taxis from the direction of Kızılay to the Kuğulu intersection and taxis that were moving in the direction of Kızılay from Kuğulu Park were observed.

A photo of the Tandoğan intersection from Dögol Street is shown in Figure 4. Taxis were observed in both directions from the side of Dögol Street that is seen in the figure (from the Anatolian Station of Ankaray).

Definitions and Criteria

Passive cigarette smoke exposure: It is the composition of smoke that a smoker blows out and the smoke that comes from the tip of burning cigarettes or other tobacco products. In Turkey, second-hand smoke or passive smoke exposure is also used instead [11].

Taxi: It is a class M1 motor vehicle that has a maximum of nine seats including the driver [12].

Law No. 4207: The Law on the Prevention and Control of the Hazards of Tobacco Products [13]

Manpower for the Research

Five final year students studying at the Public Health Department of Hacettepe University and faculty members and research assistants working at the Public Health Department of the Hacettepe University Faculty of Medicine comprised the manpower.

Table 1. Some characteristics of vehicles (January 18th to 23rd 2016, Ankara)

Characteristic	Number	%
Vehicle route (n=3656)		
Tunalı-Kızılay	886	24.2
Kızılay-Tunalı	831	22.7
Kolej-Kızılay	754	20.6
Kızılay-Kolej	568	15.5
Tandoğan-Kızılay	327	8.9
Kızılay-Tandoğan	290	7.9
Time when making the observation (n=3656)		
09.00-11.00	1800	49.2
14.00-16.00	1856	50.8
Status of the taxi (n=3656)		
Moving	2826	77.3
At the red light	830	22.7
Presence of a customer in the taxi (n=3656)		
Yes	1327	36.3
No	2329	63.7
Place where customers are seated in the taxi (n=1327)		
Front seat	369	27.8
Rear seat	855	64.4
Front and rear seats	103	7.8
Presence of children in the taxi (n=1328)		
Yes	93	7.0
No	1235	93.0
State of the windows at the time of making the observation (n=3637) [1]		
Open	563	15.5
Closed	3074	84.5

[1]The state of the windows could not be assessed in 19 vehicles

RESULTS

Some of the characteristics of the taxis, the smoking status in the vehicles, and some factors related to the smoking status are presented within the context of the research findings.

A total of 3719 vehicles were observed between January 18th and 23rd 2016. Among the 3656 vehicles that were evaluated, 831 (22.7%) vehicles moving in the direction of Kızılay-Tunalı, 886 (24.2%) in the direction of Tunalı-Kızılay, 568 (15.5%) in the direction of Kızılay-Kolej, 754 (20.6%) in the direction of Kolej-Kızılay, 327 (8.9%) in the direction of Tandoğan-Kızılay, and 290 (7.9%) in the direction of Kızılay-Tandoğan were observed (Table 1).

In total, 1800 (49.2%) of the 3656 vehicles were observed between 09.00 and 11.00 and 1856 (50.8%) were observed between 14.00 and 16.00 (Table 1).

Table 2. The smoking status of drivers and/or customers in observed vehicles (January 18th to 23rd 2016, Ankara)

Characteristic	Number	%
Smoking status of drivers (n=3656)		
Smoking	79	2.2
Not smoking	3577	97.8
Smoking status of customers (n=1327)		
Smoking	17	1.3
Not smoking	1310	98.7
Smoking status of drivers and customers (n=3656)	2	0.1
Smoking status of drivers or customers (n=3656)	92	2.5
Nonsmoking status of drivers and customers (n=3656)	3562	97.4

Table 3. The smoking status of taxi drivers according to some observations in taxis (January 18th to 23rd 2016, Ankara)

Some observations in taxis	Smoking status of driver					
	Yes		No		Total	
	Number	%	Number	%	Number	%*
Presence of customers (n=3656)**						
Yes	11	0.8	1316	99.2	1327	36.3
No	68	2.9	2261	97.1	2329	63.7
Smoking status of customers (n=1327)***						
Yes	2	11.8	15	88.2	17	1.2
No	9	0.7	1301	99.3	1310	98.8
Presence of children in taxis (n=1328)****						
Yes	-	-	93	100.0	93	7.0
No	11	0.9	1224	99.1	1235	93.0

* Column percentage, others are line percentages.
** Chi square=17.479, p<0.001
*** Situations without customers are not included. According to Fisher's chi square test, p=0.008
**** Chi square=0.835, according to Fisher's chi square test; p=0.494

Table 4. The state of the windows being open or closed while drivers are smoking (January 18th to 23rd 2016, Ankara)

Smoking status of drivers	The state of the windows that were observed					
	Open		Closed		Total**	
	Number	%	Number	%	Number	%*
Yes	43	54.4	36	45.6	79	2.2
No	520	14.6	3038	85.4	3558	97.8
Total**	563	15.5	3074	84.5	3637	100.0

*Column percentage, others are line percentages.
**The taxis in which the state of the windows could not be determined were excluded from the assessment. Chi square=93.6, p<0.001

Totally, 2826 (77.3%) of the 3656 vehicles were observed while moving and 830 (22.7%) of them were observed at the red light (Table 1).

Seventy nine (2.2%) taxi drivers were found to be smoking in the observed vehicles. In 17 (1.3%) taxis with customers, it was observed that the customer was smoking (Table 2).

It was observed that a cigarette was smoked in 94 (2.6%) of 3656 vehicles (Table 2). While 11 drivers (0.8%) smoked in 1327 taxis with customers, 68 drivers (2.9%) smoked in 2329 taxis without customers. There was a statistically significant difference (p<0.001) between the status of whether there was a customer in the taxi and the smoking status of taxi drivers (Table 3).

In 2 (11.8%) taxis in which 17 customers were found smoking, taxi drivers were smoking cigarettes, and the drivers were not smoking in 15 taxis (88.2%). The drivers were also not smoking in 1301 (99.3%) taxis in which there were 1310 customers who were not smoking, and drivers were smoking in 9 taxis (0.7%). There was passive cigarette smoke exposure in 26 vehicles. There was a statistically significant difference between the customer's smoking status and the driver's smoking status (Fisher's chi square test, p=0.008). The taxi drivers do not smoke in almost all (99.3%) taxis in which their customers do not smoke (Table 3).

In 1317 taxis, smoking was not observed. There were 93 children observed during the study. There was no statistically significant difference between the status of smoking and the presence of children (p=0.494) (Table 3).

Among 79 drivers, 43 (54.4%) were smoking while the window was open and 36 (45.6%) were smoking while the windows were closed. The window was open in 520 (14.6%) of the 3558 taxis in which the drivers were not smoking, and it was closed in 3038 (85.4%) of them. There was a statistically significant correlation between the window being open and the smoking stats of the taxi driver (p<0.001) (Table 4).

DISCUSSION

In this study, compliance of the taxi drivers' and customers' with paragraph c of Article 2 of Law No. 4207 on the Prevention and Control of Hazards of Tobacco Products was observed at three selected intersections of Ankara [13]. Smoking frequency of drivers was found to be 2.2% (instant watch). The percentage of customers smoking inside the taxis was found to be 1.3% using the same method (Table 2). Although the laws and legal sanctions prohibit smoking in confined spaces, it was found that the law was violated. These violations may be due to the insufficiency of taxi inspections while they are moving.

Smoking in vehicles has been the subject of different studies. In a study conducted by Sullman et al.[14] in six different states in the United Kingdom, the percentage of smoking cigarettes in vehicles was found as 2.2%. They observed 7168 vehicles in their study. The study conducted by Sullman et al. [14] differs from the present study in terms of data collection methods.

One of the factors that affects the smoking frequency of taxi drivers can be the presence of a customer in the taxi. For example, while the driver's smoking frequency is 2.9% when there is no customer, it is 0.8% in the presence of a customer. The lower frequency of smoking cigarettes in taxis with customers may be due to the fact that customers feel uncomfortable with cigarette smoke

inside or due to the driver's warning in terms of "not to smoke" inside. In fact, none of the drivers were found smoking in taxis if there were children as customers. This may have been due to the fact that parents do not allow others to smoke near their children or due to the fact that drivers are more careful about smoking when there is a child in their vehicle. In addition, this situation may have been caused by the fact that the frequency of the presence of children in taxis during the observation hours was low.

In the present study, it was observed that there is a risk of passive cigarette smoke exposure in the taxis. In this study, smoking was observed in 94 (2.6%) of the 3656 vehicles (Table 2). The deterioration of the air quality in a smoking environment violates the right of other people in the environment to breathe fresh air. Similarly, in addition to the fact that smoking in a taxi is a risk of causing passive cigarette smoke exposure to other people at that moment, it deteriorates the quality of respiration of individuals who travel by taxis even after smoking ended. Therefore, 2.6% of passive cigarette smoke exposure in the present study does not reflect the passive exposure of all possible cigarette smoke because the status of smoking cigarettes before a customer takes a taxi could not be assessed. The reason why customers violate Law No. 4207 may be because they are not aware about this law. Another reason may be that the warning label indicating the legal regulations and penal consequences of not abiding with them does not exist in taxis or is not put in places that are visible to anyone [13]. Pedrol et al. [15] observed 1600 vehicles in Spain and found that the risk of passive cigarette smoke exposure was 6% among individuals under 18 years of age. Thus, all the vehicles rather than taxis were included in their study.

In the present study, there was a statistically significant difference between the smoking status and state of the windows being open or closed in taxis. It was found that the windows were more frequently open in taxis in which cigarettes were smoked (Table 4). However, the fact that the windows were open when smoking in taxis does not prevent passive cigarette smoke exposure.

Study Limitations

Although three central intersections in Ankara were considered, the frequency of smoking does not reflect the general picture in Ankara. At the same time, there were differences in traffic intensity and intensity of traffic control at selected intersections. For example, the reason for the low frequency of smoking in Kızılay may be the intensive traffic controls in this region. Another limitation is that the observations were not continuously made but at certain hours within the day; therefore, the frequency of smoking cannot be referred to the whole day. It is possible that the frequency of smoking cigarettes increases due to diminished traffic control after the evening hours and that the detection possibility of violations reduces. Negative weather conditions limited the duration of the observation.

To conclude, violation of the law Nb. 4207 was observed in this study. Therefore, it is proposed that the number of inspections should be increased so that existing violations can be identified and necessary penalties can be imposed. Efforts should be made to increase the awareness of taxi drivers about the harm of tobacco use. Efforts should also be made to increase the awareness of the community about the importance and prevention of passive cigarette smoke exposure.

Ethics Committee Approval: Ethics committee approval was not required and obtained for two basic reasons. First, the study was conducted on a purely observational basis far from the objects using a check list. Second, the object of the study was "taxi" and in this sense, there was no communication/contact with the people inside the taxis and no personal data about the individuals were collected.

Informed Consent: As no actual comminicaton/contact was provided with the people whose smoking behaviors were observed during the study, the researchers could not have the opportunity to receive informed consent.

Peer-review: Externally peer-reviewed.

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