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Noncompliance to smoke-free law: which hospitality premises are more prone?

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ABSTRACT

Objectives: In Turkey, smoking has been banned in hospitality establishments since July 2009. The objective of this study was to determine noncompliance to the smoke-free law and its change in 2 consecutive years in enclosed spaces of hospitality venues and also to evaluate the factors associated with noncompliance.

Study design: This is an observational study.

Methods: Hospitality venues in Istanbul were visited, and data were collected through direct observation and interviews. Observation of smoking, cigarette butts or existence of ash-trays were defined as noncompliance. The survey was repeated in 2 consecutive years; the venues were visited both in 2013 and 2014. Logistic regression was used to evaluate factors associated with noncompliance.

Results: In 2013, 450 establishments were visited, and in the next year, 367 (81.6%) were revisited. Noncompliance for 2013 and 2014 were 49.0% and 29.7%, respectively. The highest violation was observed in bars and traditional coffeehouses. There was a significant decrease in noncompliance from 2013 to 2014 among restaurants and cafés, while such a change was not observed among bars and traditional coffeehouses. In the multivariate analysis, venues other than restaurants, venues that did not have no-smoking signs and venues which had been issued fines previously had increased probability of noncompliance.

Conclusions: While compliance to smoke-free law had increased significantly within 1 year, almost one third of the venues were still violating the law in 2014. The venues which were issued fines continued to violate the law. There is a need to strengthen enforcement efforts and revise the methods of enforcement and penalties in hospitality establishments.

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Introduction

Globally, more than 30% of nonsmokers are regularly exposed to second-hand smoke.¹ The consequences of this exposure are substantial. It is estimated that 603,000 deaths per year worldwide are attributed to second-hand smoke, which is about 1% of the global mortality.¹ Protection from exposure to second-hand smoke is considered as a fundamental human right and freedom. Effective measures to provide protection from this exposure, as envisioned by Article 8 of the WHO Framework Convention, require the total elimination of smoking and tobacco smoke in a particular space in order to create a 100% smoke-free environment.^{2,3}

In Turkey, policies regarding smoke-free environments date back to 1996 when the first tobacco control legislation which banned smoking in public transportation and in other indoor public places was introduced.⁴ In 2008, the Turkish Parliament passed an amendment prohibiting smoking at hospitality establishments.⁵ Since July 2009, smoking is banned in all types of hospitality venues, including restaurants, bars, cafés and traditional coffeehouses. Almost 3 years after the implementation of the law, the Global Adult Tobacco Survey showed that one in four adults were exposed to second-hand smoke in cafés or traditional coffeehouses and nearly one in eight in restaurants.⁶

Turkey is known as the leader in tobacco control among middle-income countries in Eastern Europe and Middle-Eastern regions. Many countries in Asia and North Africa have tried to take after Turkish example. Any weakness in the implementation of tobacco control legislation may not only negatively affect Turkey, but also the region. So, it is vital to document the effectiveness of the smoke-free law through studies assessing compliance.^{7,8} The objective of this study was to determine noncompliance and its change in 2 consecutive years in enclosed spaces of hospitality establishments in Istanbul. In order to strengthen enforcement efforts, it is also important to document which premises are more prone to noncompliance. So, this study explored the following venue characteristics that might be associated with violations: the type of the venue, absence of no-smoking signage in the venue, purchase of a ventilation system, whether the venue had ever been inspected and issued fines for noncompliance.

Methods

This is an observational study. Four out of 39 districts in Istanbul, namely Besiktas, Beyoglu, Kadikoy and Sisli, were determined as the study area. These districts were selected because they feature a high concentration and variety of hospitality establishments that cater to a diverse range of customers with different socio-economic and cultural characteristics.

Sample size was determined assuming a violation rate of 25% with a margin of error of 0.05 and a confidence level of 95%. A design effect of 1.5 was set since cluster sampling was used. Sample size was calculated as 434 which were rounded up to 450 establishments.

A cluster was defined as a main street with more than 15 hospitality establishments on it. The number of clusters from each district was determined proportionate to the population size of the district, and they were chosen through random sampling method for each district. A total of 30 clusters were selected in this manner. For each cluster, a main street and adjacent streets encompassing a length of ≈ 1.5 km were sketched on a map. Data collectors visited the sketched area, listed all the hospitality establishments (restaurants, cafés, traditional coffeehouses and bars) located in the cluster and chose 15 of them through the systematic sampling method.

Data were collected through direct observation and interviews. The observation form and the questionnaire were developed on the basis of the guide on assessing compliance with smoke-free law.⁷ Observation time was set as 12:00–15:00. Data collectors visited the chosen establishments and observed the entire venue for a period of 10 min for the presence of smoking, cigarette butts and existence of ashtrays, as well as no-smoking signage and appropriateness in terms of mandated standard size, design and information.

If smoking was not observed during noon time, the same establishment was revisited after 21:00 and the observation was repeated. We did not seek consent from the manager for the observation since enclosed spaces are defined as public domains. After finishing all the observations in the cluster, an interview was requested from the manager of each establishment. The aim of the interview was to explore the venue characteristics that were associated with noncompliance. Managers were asked if their venues have ever been inspected and issued fines for noncompliance. Purchase of a ventilation system within the last 5 years was questioned because such systems are mostly observed in establishments which are noncompliant. Also, managers were asked if they have ever had contact with representatives of the tobacco industry. Oral consent was sought for the interview, and it was carried out face to face.

The survey was repeated in 2 consecutive years, in 2013 and 2014. Initially, data were collected from 450 venues in February and March of 2013; then, the survey was repeated in 2014 again in February and March; the same venues were revisited and observed.

Violations of the smoke-free law were documented through direct observation of the venue. The presence of smoking, cigarette butts or existence of ashtrays in enclosed spaces was defined as noncompliance. In this paper, violations are presented separately for 2013 and 2014. For further analysis, establishments were categorized in two groups. The first group included venues which violated the law in both 2013 and 2014, and the second group encompassed the ones that showed consistent compliance in 2 consecutive years. These two groups are compared in order to determine the factors associated with noncompliance.

In the univariate analysis, categorical variables are compared through the Chi-squared test. Paired proportions were compared by McNemar's test. Logistic regression was used in order to control for confounding. Strengths of associations were expressed as odds ratios (OR) and at 95% confidence intervals (CIs). $P < 0.05$ was set as the level of statistical significance.

Results

In 2013, a total of 450 establishments were visited. Out of the 450 venues, only 367 (81.6%) were revisited in 2014 because the remaining establishments were not in operation any longer. The rate of violation between the closed establishments was similar to the ones that remained in the study (51.8% vs 49.0%, $P > 0.05$). Number of establishments visited and revisited by district and venue type for both years is presented on Table 1.

The majority of the venues studied were restaurants (56.9% in 2013 and 54.0% in 2014) and cafés (36.0% in 2013 and 39.2% in 2014) in both years. Traditional coffeehouses and bars (7.1% in 2013 and 6.8% in 2014) constituted only a small proportion of the sample.

The following analyses include only the venues which have been in operation and visited in both years ($n = 367$).

In 2013 and 2014, 250 (68.1%) and 306 (83.4%) of the venues had signage display ($P < 0.001$). Among the ones which had signage display in 2013 and 2014, 97 (38.8%) and 117 (38.2%) were appropriate in terms of size and content.

Presence of smoking, cigarette butts and existence of ashtrays and the overall noncompliance in venues visited in both years are presented on Table 2. Noncompliance for 2013 and 2014 was 49.0% (95% CI: 43.8%–54.3%) and 29.7% (95% CI: 25.1%–34.7%), respectively.

Among the venues that showed noncompliance in 2013, 40.6% were still violating the law in 2014. On the other hand, among the ones which complied with the smoke-free rule in 2013, 80.7% showed compliance again in 2014. Alternately, among the ones that showed noncompliance in 2013, 59.4% showed compliance in 2014, and among the ones which complied with the smoke-free rule in 2013, only 19.3% showed noncompliance in 2014 ($P < 0.001$).

Change in noncompliance by venue types is presented on Fig. 1. There was a significant decrease in noncompliance from 2013 to 2014 among restaurants (39.4% vs 24.2%, $P = 0.001$) and cafés (57.6% vs 28.5%, $P < 0.001$). There was a slight decrease in violations among bars which was not statistically significant ($P > 0.05$). An increase in noncompliance was observed in traditional coffeehouses, but the change was not statistically significant ($P > 0.05$).

Table 1 – Number of establishments visited in 2013 ($n = 450$) and revisited in 2014 ($n = 367$) by district and venue type.

District and venue type	Establishments visited in 2013, n (%)	Establishments revisited in 2014, n (%)
District		
Besiktas	75 (16.7)	61 (16.6)
Beyoglu	120 (26.7)	99 (27.0)
Kadikoy	165 (36.6)	133 (36.2)
Sisli	90 (20.0)	74 (20.2)
Venue type		
Restaurant	256 (56.9)	198 (54.0)
Café	162 (36.0)	144 (39.2)
Traditional coffeehouse	11 (2.4)	9 (2.4)
Bar	21 (4.7)	16 (4.4)

Table 2 – Presence of smoking, cigarette butts or existence of ashtrays and violation in venues visited in both years ($n = 367$).

Noncompliance	2013, n (%)	2014, n (%)	P-value
Presence of smoking	128 (34.9)	92 (25.1)	0.001
Presence of cigarette butts	69 (18.8)	69 (18.8)	>0.05
Existence of ashtrays/substitutes ^a	157 (42.9)	89 (24.3)	<0.001
Noncompliance ^b	180 (49.0)	109 (29.7)	<0.001

^a Soda cans, tea cup saucers, plastic coasters, plastic cups filled with water and wet paper napkins were used as ashtray substitutes.

^b Observation of at least one of the following is defined as overall noncompliance: (1) smoking, (2) cigarette butts and (3) Ashtrays/substitutes.

Smoking outside the venue was also evaluated. In 2013 and 2014, smoking was observed outside among 90 (24.5%, 95% CI: 20.2%–29.3%) and 117 (31.9%, 95% CI: 27.1%–36.9%) of the establishments, respectively ($P = 0.023$).

Response rate for the questionnaire in 2013 was 54.8%. Response rate among establishments with violation was significantly lower compared to the ones without violation (45.0% vs 64.2%, $P = 0.016$).

In order to determine the factors associated with noncompliance, establishments which violated the law in both years were compared with the ones that showed consistent compliance in 2 consecutive years. Univariate and multivariate analyses that evaluate venue characteristics associated with noncompliance are presented on Table 3.

Univariate analysis showed that district, venue type, absence of no-smoking signage, having undergone inspection, having been issued fines for noncompliance, purchase of a ventilation system within the last 5 years and having had contacts with representatives of the tobacco industry were associated with noncompliance ($P < 0.05$). Only three factors were statistically significant in the multivariate analysis. When restaurants were taken as the reference category, other types of venues had an increased risk of noncompliance with an OR of 4.66 (95% CI: 1.60–13.55, $P = 0.005$). Also, if the venue had been issued fines, the chances of noncompliance was higher with an OR of 4.83 (95% CI: 1.27–18.40, $P = 0.021$). If no-smoking signage was absent in the venue, then the OR for noncompliance was 4.78 (95% CI 1.59–14.40, $P = 0.005$). Although purchase of a ventilation system within the last 5 years increased noncompliance, the association was not statistically significant in the multivariate analysis ($P = 0.12$).

Discussion

This study documented that noncompliance in hospitality venues in the four districts of Istanbul in 2013 and 2014 were 49.0% and 29.7%, respectively. The authors reported noncompliance levels to the official authorities after the first phase of the study in 2013. This might have led to the increased compliance observed in the next year. But still, nearly one third of the venues were violating the law in 2014. Studies from different parts of the world report varying rates

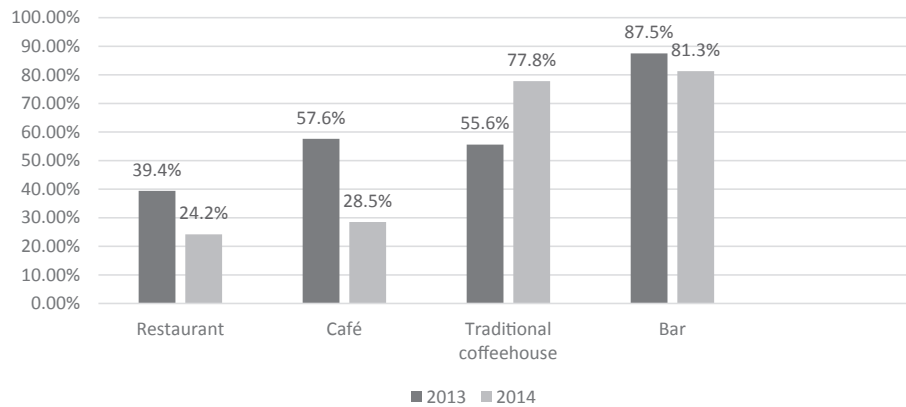


Fig. 1 – Change in noncompliance rates by venue types.

of compliance.^{9–19} Accumulated evidence clearly indicates that if existing methods of enforcement are adequate, compliance with the law can be achieved effectively in hospitality establishments.^{9–12,19,20} Hence, the high rates of noncompliance we report deserve attention and highlight the need to strengthen enforcement efforts.

A previous study which evaluated compliance with smoke-free legislation in indoor public places in 12 cities of Turkey determined that smoking ranged from 6.0% in cafés and 7.0% in restaurants to 22.5% in traditional coffeehouses and 79.7% in bars or nightclubs.¹⁷ These are lower compared to the levels observed in our study, except for bars and nightclubs. The differences in noncompliance reported between the two surveys might be due to several reasons. In the mentioned study, the establishments were visited once. However, in our study, we observed the venues for a period of 10 min, and if smoking

was not detected, the same establishment was revisited after 21:00 and the observation was repeated for 10 min. Also, while the authors in the mentioned study assessed presence of ashtrays and cigarette butts besides smoking, they did not report the overall noncompliance as the outcome variable. Additionally, season and time of visit as well as social and cultural context of the study area might have resulted with differences in the compliance levels found.

Our study showed that the highest rate of compliance was in restaurants. In the multivariable analysis, when restaurants were taken as the reference category, other venues showed a violation rate with an OR of 4.66 (95% CI: 1.60–13.55). Bars and traditional coffeehouses had the highest violation rates. Other studies also show that bars have lower levels of compliance compared to other types of venues in the hospitality sector.^{13,17,21} Clients might have different patterns of

Table 3 – Venue characteristics associated with noncompliance, univariate and multivariate.

Venue characteristics	Univariate analysis			Multivariate analysis		
	OR	(95% CI)	P-value	OR	(95% CI)	P-value
District						
Beşiktaş	1.00			1.00		
Beyoğlu	0.29	(0.13–0.67)	0.004	0.42	0.08–2.16	>0.05
Kadıköy	0.37	(0.16–0.83)	0.16	0.31	0.08–1.198	>0.05
Şişli	0.54	(0.23–1.27)	>0.05	0.50	0.09–2.92	>0.05
Venue type						
Restaurant	1.00			1.00		
Other	3.69	(2.04–6.68)	<0.001	4.66	1.60–13.55	0.005
Signage display						
Yes	1.00			1.00		
No	2.13	(1.20–3.76)	0.009	4.78	1.59–14.40	0.005
Inspected for noncompliance						
No	1.00			1.00		
Yes	3.36	(0.97–11.61)	0.056	1.29	0.35–4.69	>0.05
Issued fines for noncompliance						
No	1.00			1.00		
Yes	8.00	(2.89–22.14)	<0.001	4.83	1.27–18.40	0.021
Ventilation system purchase within the last 5 years						
No	1.00			1.00		
Yes	6.58	(2.27–19.08)	0.001	3.63	0.73–18.04	0.12
Meeting with representatives of the tobacco industry						
No	1.00			1.00		
Yes	6.41	(1.18–34.72)	0.031	1.82	0.04–75.65	>0.05

OR, odds ratio; CI, confidence interval.

smoking behaviour depending on the venue they visit. A telephone survey assessing compliance with smoke-free policies in Korean bars and restaurants in California documented that smoking was more prevalent in bars than restaurants. Authors indicated that most participants who smoked in a bar did not violate the law in a restaurant.²² It can be challenging to enforce the law in bars since the social context might promote smoking behaviour. Also, late working hours make inspections difficult which necessitates implementation of an advanced monitoring system. Still it is possible to reach high levels of compliance in bars. In a study from Los Angeles, it was documented that 4 years after implementing the smoke-free law, compliance reached almost to 99% in bar/restaurants and 76% in free standing bars.¹¹ Also, Skeer et al. documented that bars in Boston were showing high compliance within 3 months following the smoke-free law was implemented.¹⁰

Coffeeshouses are important social gathering places in the traditional life of Turkish people. Differently from cafés, in traditional coffeeshouses, only nonalcoholic beverages are served and table games are played. Our study showed high noncompliance in traditional coffeeshouses, although the sample size was quite small, not allowing calculation of a precise estimate. Exposure to second-hand smoke has been an important problem in these venues even before the smoke-free law documented in a study showing significantly higher mean hair nicotine levels in both nonsmoker and smoker coffeeshouse workers compared with hospital staff members.²³ Bearing in mind that coffeeshouse owners were the only group in the hospitality sector who challenged the law in the constitutional court, the high rate of violation rate may not only be due to high rates of noncompliance of customers.

Penalties are believed to be a driving force for the compliance to the smoke-free law. A qualitative study carried out in bars in Scotland showed that fear of prosecution was the main drive for enforcing the smoke-free law.²⁴ Yet our study documented that if a venue was issued fines previously, then the chances of violation increased with an OR of 4.83 (95% CI: 1.27–18.40). This is an interesting finding indicating penalties did not serve their purpose as disincentives in Turkey. The reasons that make penalties affordable need to be investigated. In Turkey, monetary fines are in the range of 350–2100 US dollars.²⁵ Since these fines can be considered relatively low, we suggest that the establishments which were able to afford the penalties continued to violate the law. This creates unfairness which might deteriorate the enforcement activities. A qualitative study carried out in California revealed that fairness regarding the enforcement of the smoke-free law was the main issue among bar owners. The authors reported that the bar under study was likely to be in compliance with the smoke-free law if other bars were complying.²⁶ The venues that complied with the law did not want to lose their smoker customers. A venue which keeps on violating the law in spite of the fines it had been issued might encourage other venues in the same locality to disregard the law which requires urgent attention as noncompliance can be contagious.

Hospitality premises which had no-smoking signage display were more compliant with the law. The absence of no-smoking signage might be a useful marker for identifying premises that are noncompliant and strengthening enforcement efforts on these establishments.

In the multivariable analysis, it was determined that ventilation system purchase within the last 5 years increased violation with an OR of 3.63, although it was not statistically significant ($P = 0.12$). A study in California documented that bar owners believed that ventilation systems were sufficient to remove environmental tobacco smoke.²⁶ Ventilation systems might be perceived as tools for eliminating smoke. The evidence about the link of tobacco industry consultants misinforming the hospitality business regulative and legislative bodies must urge tobacco control advocates educating policy makers by this fact.²⁷

Magzamen et al.²⁸ had analyzed the print media coverage of California's smoke-free bar law and showed that the number of tobacco industry arguments in print media lasted about 6 months. However, in a recent paper, it is concluded that implementation phase continued to be a site of intensive tobacco industry political activity in low- and middle-income countries.²⁹ Bearing in mind the crucial importance of Turkey as an example country in the region, knowing the reluctance of tobacco industry in giving up the major markets, enforcement of smoke-free legislation must be given utmost importance.

This study has some limitations. We were only able to reach 81.6% of the venues in the second year since the remaining establishments were not in operation any longer. But the proportion of establishments violating the smoke-free law did not differ between the establishments which were closed and continued to operate. The low number of traditional coffeeshouses and bars within the sample did not allow us to get precise estimates for these venues. The small sample size obliged us to classify cafés, coffeeshouses and bars together as one group in the multivariate analysis although cafés had better compliance compared to coffeeshouses and bars. Approximately only half of the venues accepted the interview. Also, venues that did not violate the smoke-free law had a higher participation compared to the ones that did not comply. This might have prevented us in identifying some of the other factors associated with noncompliance.

We documented that compliance to smoke-free law had increased significantly within 1 year, but nearly one third of the venues were still violating the law in 2014. While violation was decreasing in restaurants and cafés, traditional coffeeshouses and bars were not showing a decreasing trend. These rates highlight the need to strengthen enforcement efforts in hospitality establishments. Fines were not effective in preventing violation; moreover, the venues which were issued fines continued to violate the smoke-free law. There is an urgent need to revise the methods of enforcement and penalties to ensure full compliance as well as measuring the impact of policies with evidence-based criteria. The evaluation of tobacco control practice solely based on presence of legislation may not be adequate, as the public health benefit can only be achieved by successful implementation.

Author statements

Ethical approval

This study was approved by the ethics committee of Haydarpasa Numune Training and Research Hospital, Istanbul.

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Competing interests

None declared.

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