Research paper

Relation between individual factors and support for smoking bans in bars in Greece: A cross-sectional study of the 2013 Global Adult Tobacco Survey (GATS)

Stephanie I. Teloniatis[1], Anna Tzortzi[1, 2], Vaso Evangelopoulou[1], Panagiotis Behrakis[3, 2]

ABSTRACT

INTRODUCTION Smoking rates among the general population and among youth are decreasing in Greece. Low compliance with smoke-free legislation in indoor places in Greece renders non-smokers exposed to secondhand smoke, especially when frequenting bars. The aim of the current study was to identify the factors related to support for smoking bans in bars in Greece.
METHODS A cross-sectional secondary data analysis was conducted on the 2013 Greek Global Adult Tobacco Survey. Multivariate regression was used to analyze individual factors and their relation to support for the smoking ban in bars. The total sample was nationally representative of the Greek population and included 3961 residents over the age of 15 with 2061 supporting a ban in bars.
RESULTS Overall, 50.5% (95% CI: 46.5-54.4) of Greeks supported the smoking ban in bars. Among them, 1,832 (74.9%, 95% CI=70.1-79.1) were non-smokers and 229 (13.7%, 95% CI=10.6-17.5) were smokers. Age over 65 years was significantly related to increased support for the smoking ban in bars compared to those aged 15-24 years (p<0.05). Belief that secondhand smoke causes lung cancer was significantly related (p<0.001) to having increased support for the ban. Increased knowledge of smoking-related harm was significantly related to increased support for the ban in bars (p<0.001). Male non-smokers were significantly less likely to support the ban in bars than females (p<0.05).
CONCLUSIONS Increasing knowledge and awareness of smoking-related harm will enhance smoking ban support and compliance, improving tobacco prevention and cessation, especially among the youth and young adults.

INTRODUCTION

About 600,000 non-smokers in Greece are exposed to secondhand smoke (SHS) with an estimated 19,000 Greek people dying from tobacco-related diseases annually[1]. SHS is a risk factor for respiratory diseases such as asthma, chronic obstructive pulmonary disease (COPD), decreased lung function[2, 3] and cardiovascular disease (CVD) such as coronary heart disease (CHD)[4–7]. It is estimated that 28% of global deaths attributable to SHS are children[8], highlighting the need to target vulnerable populations from the world's most preventable cause of death[9].

Article 8 of the World Health Organization's (WHO) Framework Convention for Tobacco Control (FCTC)[10] outlines the total elimination of smoking indoors in order to reduce SHS exposure. When properly enforced, national indoor smoking ban legislation reduces SHS exposure by as much as 90%[11], immediately improving respiratory and sensory symptoms and reducing myocardial infarctions (MI) by 20-40% within months following ban implementation[11]. It also provides smokers with a supportive environment to quit[12, 13], encourages smoke-free homes and results in either a neutral or positive economic impact on businesses including restaurants and bars[11, 14].

Since ratification of the WHO FCTC in Greece, smoking prevalence has been declining from 41% in 2006[15] to 38% in 2009 and 32.6% in 2014[16]. Despite a decline in prevalence of smoking and implementation of a comprehensive smoke-free law in 2010[17], SHS exposure is a major concern in Greece, where compliance with smoking bans is poor[17],

leaving 9 in 10 Greeks exposed to SHS when frequenting bars or nightclubs[1, 18]. Furthermore, as youth are often either employed at or frequent bars[19] they report more SHS exposure at bars in Greece[12], it is clear that they are put at high risk through chronic SHS exposure.

Previous studies in Ireland showed successful compliance with smoke-free bans in bars with over 80% of the population supporting the bans[20]. Self-compliance also has been found to be positively associated with support in Malaysia, Thailand[21], Canada, United States, United Kingdom and Australia[22]. Support for smoking bans identifies the need for behavioral changes at societal[23] and individual levels[24].

Therefore, the aim of the current study was to summarize the characteristics of supporters of the smoking ban in bars by smoking status in Greece and to identify factors related to supporting the ban in bars using the Global Adult Tobacco Survey (GATS) data, so as to help design tools that will improve support and compliance of the smoking ban and consequently improve smoking prevention and cessation throughout Greece and internationally.

METHODS

GATS methodology

A cross-sectional study design was applied using data from the GATS collected from a nationally representative sample of Greek residents >15 years of age in 2013. The GATS is considered a global standard for monitoring tobacco control[25] using a standardized protocol for the administered questionnaire, sample design, data collection and management procedures. The GATS gathers information on respondents' demographics, tobacco use and cessation, SHS, economics, media and knowledge as well as attitudes and perceptions towards tobacco use[26].

Greece is home to approximately 10,800,286 people from a 2011 census[27]. The GATS used the 2002 and 2011 census data to apply a multistage geographically clustered sample design for nationally representative results. It was completed in four stages starting with the four major regions of Greece, then primary sampling units (PSU), followed by randomly selecting households and then residents[18]. The response rate of the 2013 GATS was 69.6% with a coverage rate of 93.3%[18]. A total of 6600 households totaling 4359 respondents were included in the GATS[18].

Secondary analysis methods

A complex survey data analysis was performed using a weighted survey set for all analyses in the current study (PSU, strata and weights used as provided by the GATS) producing percent estimates and corresponding 95% Confidence Intervals (95% CI). The current study population, a total of 3961 people, consisted of 1588 current smokers and 2373 non-smokers who answered "yes" or "no" to the question, "Do you support the law that prohibits smoking inside bars?" and was used as the outcome variable in the analysis. The 9.13% of the total population who answered "Don't know" or "Refused" were not included in the analysis. The socio-ecological model (SEM) framework[28] was used to identify factors related to support for the smoking ban in bars at the individual level.

Independent variables included age, gender, education, marital status, occupation, knowledge, and beliefs. In addition, smoker-specific factors, "intention to quit" and "dependency on tobacco" were included for smokers. All "Refused" answers were not included in the analysis and accounted for <5% of the observations.

Raw data from the GATS for age (with imputation) was transformed from a continuous into a categorical variable to represent those of the original 2013 Greek GATS report. Level of education included only adults over the age of 25 years. Respondents aged 15-24 (a total of 382 respondents) were not included because they were too young to belong to certain educational categories. Separated or divorced were combined for marital status. "Unemployed, able to work" and "Unemployed, unable to work" were combined into one category for the variable occupation. For smoking status, a smoker was identified as a person who answered smoking "Daily" or "Less than daily". The variable "knowledge" was created as a single, new continuous variable that combined all 11 GATS knowledge questions with "yes" answers. Respondents were asked, "Based on what you know or believe, does smoking cause the following... Serious illness? Stroke? Heart attack? Lung cancer? Bladder cancer? Stomach cancer? Brain cancer? Premature birth? Bone loss? Are cigarettes addictive? And can smokeless tobacco cause serious illness?". Scores ranged from 0-11. Intention to quit included responses, "quit within the next month, thinking to quit within the next 12 months, quit someday but not within the next year, not interested in quitting" and "Don't know". Dependency on tobacco was measured by time of first cigarette after waking, while 57 observations were missing accounting for 3.4% of smokers.

Statistical analysis

Descriptive statistics of the outcome variable by exploratory variables were summarized for smokers and non-smokers. Univariate logistic regression analyses were used in order to

Research paper

find which factors were related to support for the smoking ban in bars. Following this, logistic regression analysis in a stepwise method (p for entry <0.05, p for removal <0.10) was used in order to identify independently related factors with support for the bans in bars among smoker and non-smoker subpopulations. Odds ratios with 95% confidence intervals were computed from the results of the logistic regression analyses. All reported p-values were two-tailed. Statistical significance was set at p<0.05 and analyses were conducted using STATA statistical software (version 13.0).

RESULTS

Descriptive statistics

Prevalence of smoking in Greece in 2013 was 38.2% (95% CI: 36.2-40.2), with 51.2% (95% CI: 47.9-54.4) of men

Figure 1. Smokers and Non-smokers >15 years old who supported the smoking ban in bars (%) by the number of questions answered correctly (total of 11 questions) on smoking health effects
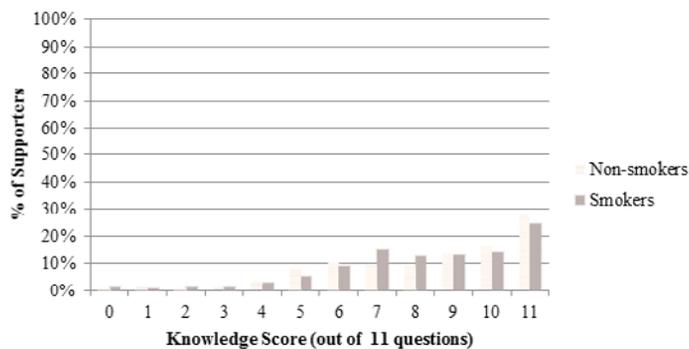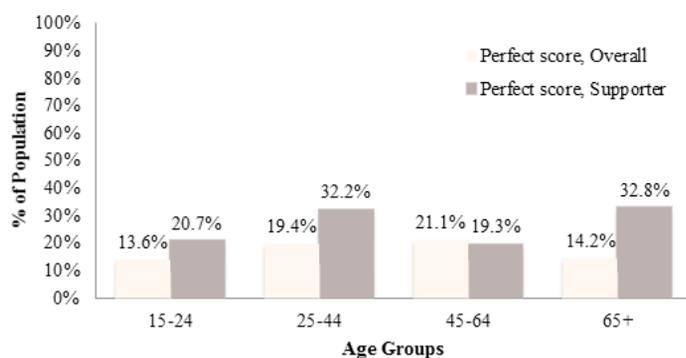

Figure 2. Proportion of those who had a perfect score (11/11 questions) for knowledge of smoking-related harms among the overall population and those who supported the ban in bars (Supporter) by age group

Table 1. Percentage (with 95% Confidence Intervals) of overall population, smokers and non-smokers >15 years old who supported the ban in bars by individual characteristics (GATS, 2013)

	Overall Support	Smoker Support	Non-smoker Support
	Percentage (95% CI)	Percentage (95% CI)	Percentage (95% CI)
Age (years)			
15-24	48.6 (40.4-56.9)	10.2 (5.0-19.9)	65.3 (55.8-73.7)
25-44	41.8 (37.2-46.5)	11.5 (8.5-15.3)	74.0 (68.0-79.1)
45-64	48.3 (42.4-54.3)	16.4 (12.6-21.1)	74.3 (67.2-80.2)
65+	74.0 (68.6-78.7)	22.6 (15.8-31.4)	84.4 (79.0-88.6)
Gender			
Female	60.5 (56.0-64.8)	15.9 (12.4-20.2)	77.0 (72.6-81.5)
Male	40.7 (36.2-45.3)	12.5 (10.0-15.4)	71.3 (64.6-77.1)
Education[1]			
Primary or less	70.0 (62.8-76.9)	21.4 (14.3-30.7)	81.1 (73.8-86.8)
Secondary	51.3 (45.4-57.0)	18.1 (12.6-25.2)	76.6 (68.0-83.4)
High School	45.2 (39.8-49.6)	12.0 (9.1-15.6)	76.3 (70.0-81.7)
College	45.0 (38.6-50.7)	12.9 (9.4-17.4)	74.2 (67.0-80.3)
Marital Status			
Single	41.7 (36.2-47.4)	9.7 (6.7-13.9)	66.7 (58.7-73.8)
Married	53.4 (48.9-57.8)	15.7 (12.9-18.9)	77.0 (71.9-81.4)
Divorced[2]	30.7 (21.6-41.6)	13.5 (7.7-22.7)	73.4 (57.7-85.1)
Widowed	77.4 (69.5-83.8)	23.8 (13.0-39.5)	87.6 (80.5-92.4)
Occupation			
Government	45.4 (36.1-54.9)	16.1 (10.6-23.8)	76.3 (65.4-84.6)
Non-Government	42.1 (35.8-48.6)	11.7 (8.6-15.8)	72.0 (63.9-78.9)
Self-Employed	34.4 (27.2-42.4)	11.8 (7.7-17.7)	65.9 (56.3-74.4)
Student	56.4 (48.6-63.9)	14.2 (6.0-29.9)	69.1 (60.1-76.9)
Homemaker	64.1 (58.2-69.6)	19.7 (12.4-29.9)	78.4 (71.8-83.9)
Retired	68.2 (62.1-73.7)	19.7 (14.0-27.0)	83.4 (77.3-88.1)
Unemployed[3]	40.9 (33.5-48.8)	10.3 (6.2-16.6)	71.9 (61.0-80.7)
SHS causes lung cancer in adults			
No	20.5 (14.9-27.5)	3.9 (1.6-9.1)	41.4 (27.0-57.5)
Yes	56.9 (52.7-61.2)	18.0 (15.2-21.2)	77.3 (72.8-81.3)
Don't know	36.1 (33.2-52.8)	5.8 (3.4-9.8)	69.7 (58.2-79.1)

Note: 95% CI– Confidence Interval, 1– Education included respondents >25 years old, 2– Divorced included "Separated", 3– Unemployed included those able and unable to work

and 25.7% (95% CI: 47.9-54.4) of women being current smokers. Smoking prevalence differed between youth and older adults with 30.0% (95% CI: 24.1-36.7) of the 15-24 year olds and 39.9% (95% CI: 37.9-41.9) over the age of 25 being smokers.

The smoking ban in bars in Greece was supported by 50.5% (95% CI: 46.5-54.4) of the total population. In total, 74.9% (95% CI=70.1-79.1) of non-smokers and 13.7%

Research paper

Table 2. Results of Univariate analysis for demographic characteristics related to support for ban in bars among smokers and non-smokers >15 years of age (GATS, 2013)

		Smokers			Non-smokers		
		OR	(95% CI)	P-value	OR	(95% CI)	P-value
Age (years)	15-24	1.00			1.00		
	25-44	1.14	(0.50-2.59)	0.760	1.51	(0.98-2.34)	0.065
	45-64	1.72	(0.75-3.98)	0.201	1.54	(1.06-2.23)	**0.025**
	65+	2.57	(1.05-6.31)	**0.039**	2.88	(1.72-4.79)	**0.000**
Gender	Female	1.00			1.00		
	Male	0.75	(0.52-1.10)	0.142	0.72	(0.55-0.96)	**0.024**
Education[1]	Primary<	1.00			1.00		
	Secondary	0.81	(0.43-1.55)	0.525	0.76	(0.51- 1.15)	0.188
	High School	0.50	(0.28-0.89)	**0.019**	0.75	(0.48-1.18)	0.207
	College	0.54	(0.30-1.00)	**0.048**	0.67	(0.40-1.11)	0.119
Marital Status	Single	1.00			1.00		
	Married	1.73	(1.08-2.77)	0.022	1.67	(1.21-2.31)	**0.002**
	Divorced[2]	1.46	(0.67-3.09)	0.327	1.38	(0.64-2.96)	0.402
	Widowed	2.91	(1.25-6.77)	0.013	3.54	(1.93-6.48)	**0.000**
Occupation	Government	1.00			1.00		
	Non-Government	0.69	(0.38-1.23)	0.228	0.80	(0.45-1.44)	0.450
	Self-Employed	0.70	(0.35-1.38)	0.300	0.60	(0.32-1.14)	0.116
	Student	0.86	(0.30-2.50)	0.782	0.70	(0.42-1.17)	0.166
	Homemaker	1.28	(0.61-2.67)	0.512	1.13	(0.60-2.13)	0.698
	Retired	1.28	(0.68-2.42)	0.443	1.56	(0.88-2.77)	0.123
	Unemployed[3]	0.60	(0.29-1.25)	0.172	0.80	(0.41-1.53)	0.487

Note: GATS- Global Adult Tobacco Survey, 95% CI= Confidence interval, OR- odds ratio, 1.00- indicates reference category, SHS= Secondhand Smoke, -1 Education included respondents >25 years old, 2- Divorced included «Separated», 3- Unemployed included those able and unable to work, p-values<0.05 indicated in bold.

(95% CI=10.6-17.5) of smokers supported the smoking ban in bars.

As seen in Table 1, in the overall population, a higher percentage of those aged 65 and over supported the ban in bars compared to only 48.6% of youth (ages 15-24). Non-smokers showed that older adults (>65 years old), females, those with lower education, widowed, retired and those who believed SHS causes lung cancer had higher percentages of support than their respective modalities (Table 1). Smokers who supported the ban in bars had similar patterns as non-smokers but showed an overall lower support for the ban based on all factors examined.

For knowledge of diseases caused by smoking, the majority, 95% (95% CI= 92.4-96.7) of the smoker population knew smoking could cause lung cancer whereas only 27.8% (95% CI= 22.6-33.6) knew it could also cause bone loss. Among non-smokers, 97.1% (95% CI=95.2-98.2) knew it could cause lung cancer compared to 40.4% (95% CI=34.6-46.5) who knew it could cause bone loss. Figure 1 shows individuals who supported the ban by smoking status and the amount of knowledge they had on smoking-related diseases out of an 11-point score.

Those who supported the ban in bars had higher proportions of a perfect knowledge score compared to the general population, except for those aged 45-64 who had almost equivalent scores. Proportion of perfect knowledge score among supporters of the ban was 24% among smokers and 27.4% among non-smokers. In the overall population, those 15-24 years old had the lowest perfect score knowledge than all other age groups (Figure 2).

Supporting the ban in bars by intention to quit showed that 26.0% (95% CI: 8.6-56.7) of those who planned to quit within the month, 20.8% (95% CI: 14.3-29.2) within the next 12 months, 12.3% (95% CI: 9.3-16.0) someday but not in the next year, 13.4% (95% CI: 10.1-17.5) who were not interested to quit at all and 10.2% (95% CI: 5.9-17.4) who "didn't know", supported the ban in bars. For support by dependency, 10.2% (95% CI: 6.4-15.6) who had their first

Research paper

cigarette within <5 minutes, 13.3% (95% CI: 10.5-16.7) within 6-30 minutes, 14.2% (95% CI: 10.0-19.8) within 31-60 minutes and 19.6% (95% CI: 2.6-29.1) > 60 minutes of waking up supported the ban in bars.

Univariate analysis

Univariate analysis between support for the ban and smoking status in the overall population was highly significant (p<0.001). Tables 2 and 3 show the results of the univariate analysis for smokers and non-smokers. For smokers, supporting the ban in bars was significantly related (p<0.05) to being over age 65, having high school or college education, and being married. Among non-smokers, support for the smoking ban in bars was significantly related to being ages 45-54 or >65, male, married or widowed (Table 2).

For both smokers and non-smokers, having the belief that SHS can cause lung cancer and increased knowledge

of the harm of smoking were significantly related (p<0.05) to increased support of the ban in bars. In regards to dependency, time of first cigarette being over 60 minutes, was positively related to an increase in support (p<0.05) compared to those who answered that they had their first cigarette within 5 minutes of waking up (Table 3).

Multivariate analysis

Following a backwards stepwise multiple regression for smokers and non-smokers, being 65 and over compared to 15-24 was significantly (p<0.05) related to supporting the ban in bars. In addition, "belief SHS can cause lung cancer" and increased "knowledge of smoking-related health effects" were factors significantly related to increased support of the ban in bars among smokers and non-smokers. Female gender was an additional factor that was significantly related (p<0.05) to increased support of the ban in bars compared to males among non-smokers (Table 4).

Table 3. Results of Univariate Analysis for individual factors and smoker-specific factors related to support for ban in bars among smokers and non-smokers (GATS, 2013)

		Smoker Support			Non-smoker Support		
		OR	(95% CI)	P-value	OR	(95% CI)	P-value
SHS causes lung cancer in adults							
	No	1.00			1.00		
	Yes	5.37	(2.15-13.44)	**<0.001**	4.82	(2.62-8.84)	**<0.001**
	Don't know	1.52	(0.53-4.37)	0.437	3.25	(1.64-6.42)	**0.001**
Knowledge[1], continuous							
	Did not know	1.00					
	Did know	1.28	(1.19-1.39)	**<0.001**	1.14	(1.07-1.23)	**<0.001**
Smoker-specific factors							
Intention to quit...							
	Within month	1.00			–	–	–
	Within 12 months	0.75	(0.19-3.01)	0.683	–	–	–
	Someday[2]	0.40	(0.10-1.54)	0.182	–	–	–
	Not interested	0.44	(0.11-1.70)	0.234	–	–	–
	Don't know	0.33	(0.08-1.39)	0.130	–	–	–
Time of first cigarette after waking							
	<5 minutes	1.00			–	–	–
	6-30 minutes	1.35	(0.77-2.38)	0.295	–	–	–
	31-60 minutes	1.47	(0.78-2.78)	0.239	–	–	–
	More than 60 minutes	2.16	(1.05-4.44)	**0.037**	–	–	–

Note: GATS= Global Adult Tobacco Survey, 95% CI= Confidence interval, OR= odds ratio, 1.00= indicates reference category, SHS= Secondhand Smoke, 1= Higher score indicates more knowledge and includes 10 questions on smoking, 2= not in the next 12 months, – n/a.
P-values<0.05 indicated in bold.

Table 4. Results of Multivariate Stepwise Regression Analysis for supporting the smoking ban in bars among smokers and non-smokers in Greece (GATS, 2013)

		Smokers			Non-smokers		
		OR	(95% CI)	P-value	OR	(95% CI)	P-value
Age							
	15-24	1.00			1.00		
	25-44	1.01	(0.48-2.17)	0.964	1.30	(0.85-2.01)	0.228
	45-64	1.54	(0.71-3.37)	0.268	1.27	(0.86-1.86)	0.220
	65+	2.69	(1.07-6.75)	**0.035**	2.58	(1.51-4.40)	**0.001**
Gender							
	Female	–	–	–	1.00		
	Male	–	–	–	0.72	(0.53-0.97)	0.031
SHS causes lung cancer in adults							
	No	1.00			1.00		
	Yes	3.80	(1.47-9.88)	**0.006**	4.17	(2.23-7.79)	**<0.001**
	Don't know	1.60	(0.56-4.64)	0.376	4.24	(2.12-8.49)	**<0.001**
Knowledge					–		
	Did not know (0/10)	1.00			1.00		
	Did know[1], continuous	1.22	(1.13-1.32)	**<0.001**	1.13	(1.06-1.22)	**0.001**

Note: GATS– Global Adult Tobacco Survey, 95% CI= Confidence interval, OR– odds ratio, 1.00 indicates reference category, – indicates not included in the model, 1– did know includes an increasing score from 1/10 to 10/10, P-value<0.05 indicated in bold.

DISCUSSION

Given the low compliance of the smoking ban in bars in Greece[17], this was the first study to examine the individual factors related to supporting the ban in bars using the 2013 GATS data. In general, Greece has a lower average support for the smoking ban in bars of 50.5% compared to the European average of 65%[20].

Unsurprisingly, this study found that over 85% of smokers did not support the smoking bans in bars versus 25% of non-smokers. Proper implementation of smoke-free legislation enforces behavioral changes that consequently lead to changes in attitudes, beliefs[13] and increased support[14]. In Greece, where the smoking ban legislation is not properly enforced, alternative approaches are needed to improve support. To bypass the issues around poor compliance in Greece, a focus should be given to actively changing behavior, through knowledge and beliefs among smokers, especially the youth, to improve support of the smoking ban and ultimately improve self-compliance of the ban[20-22].

The percentage of smokers, who supported the ban in bars, did not differ significantly by gender. Among non-smokers, female gender showed a significant positive relation to support compared to men. This finding is in line

with a previous study, regarding factors related to having an in-home smoking ban in Europe, that found women were more likely to be supportive than men[29].

Also, in line with previous studies from other countries[13, 22, 30, 31], this study showed that supporting the ban was more likely with older age (>65 years of age), believing SHS causes lung cancer, and having increased knowledge on harm caused by smoking. Although previous studies had differing national policies, populations, and varying contextual situations, results of this study show that factors related to support of the smoking bans are similar in the Greek context as well. Furthermore, the current study finding that older individuals are more likely to support the ban in bars is in line with factors related to in-home smoking bans in Europe[29]. According to the results of the current study, in the overall population, a perfect score for knowledge on smoking-related harm was low, and even more so among the youth, further highlighting the gap in knowledge among the Greek population. Communication strategies should aim to advance health literacy and public awareness on active and passive smoking-related harm. Increased public awareness may also prompt non-smokers to advocate for enforcement of the law. Building on beliefs

that SHS causes harm leads to compliance with smoke-free legislation even when norms surrounding social acceptability of smoking are not addressed[20,30].

The multivariate analysis showed that smoking specific indicators, dependency and intention to quit, were not significantly related to supporting the ban in bars. Although not identical in terms of factors examined, previous studies reported that dependency among college students in Greece was a predictor for non-compliance of smoking bans[32] and lower cigarette consumption was also related to an increase in support for the smoking ban in bars[22].

A previous study found that adult smokers in Europe quit smoking for two major reasons, becoming ill or gaining knowledge on smoking-related harm. Interestingly, the latter was the major reason reported for cessation among adults in Greece[33]. Based on current findings, half of Greek youth (15-24 years old) are supportive of the ban in bars, regardless of smoking status. With this in mind and the fact that youth are often employed and frequent bars[19], rather than wait for morbidity to induce change, public health professionals can be proactive through taking a preventive approach. Since knowledge is strongly related to supporting the ban in bars and quitting smoking, it appears that health literacy is a key factor that must be strongly considered for interventions aimed at tobacco prevention and cessation. This is of utmost importance among the youth, where successful prevention will lead to creating a future smoke-free generation. Moreover, the fact that in the current study population only 30% of youth ages 15-24 were smokers compared to almost 40% of those 25 years old and over, signifies that conditions exist to achieve this aim.

The current study strengths included a representative sample size, sound methodology and high response and coverage rates[18]. The current analysis is limited to individual factors where there may be other factors related to supporting the ban in bars. In addition, as with all cross-sectional studies, none of the results assumes causality. Further research is needed to support recommendations in order to make evidence-driven policy decisions to maximize effectiveness of WHO FCTC outcomes. Qualitative analysis may contribute to explain how older age, regardless of lower education and smoking status, is associated with support of the ban in bars.

CONCLUSIONS

Interventions are needed to advance health literacy and awareness with regard to smoking and passive smoking-related harm. This will improve compliance with smoking ban legislation, especially among youth and young adults frequenting bars. Moreover, it will promote tobacco prevention and cessation and will ultimately lead to a smoke-free generation.

REFERENCES

1. Rachiotis G, Barbouni A, Katsioulis A, Antoniadou E, Kostikas K, Merakou K, et al. Prevalence and determinants of current and secondhand smoking in Greece: results from the Global Adult Tobacco Survey (GATS) study. BMJ Open. 2017 Jan 19;7:e013150. doi:10.1136/bmjopen-2016-013150

2. Öberg M, Jaakkola MS, Prüss-Üstün A, Schweizer C, Woodward A. Second-hand smoke. Assessing the burden of disease at national and local levels. WHO Environ Burd Dis Ser. 2010;18.

3. Kobayashi Y, Takeuchi T, Hosoi T, Loeppky JA. Effects of habitual smoking on cardiorespiratory responses to sub-maximal exercise. J Physiol Anthropol Appl Human Sci. 2004; 23: 163–9. doi:10.2114/jpa.23.163

4. Action on Smoking and Health. ASH research report: The health effects of exposure to secondhand smoke. 2014. Available at: http://ash.org.uk/files/documents/ASH_597.pdf (accessed 8 November 2016).

5. World Health Organization, World Heart Federation. ITC Project: Cardiovascular harms from tobacco use and secondhand smoke: Global gaps in awareness and implications for action. Waterloo, Ontario, Canada and Geneva, Switzerland; 2012.

6. Frazer K, Callinan JE, McHugh J, van Baarsel S, Clarke A, Doherty K, et al. Legislative smoking bans for reducing harms from secondhand smoke exposure, smoking prevalence and tobacco consumption. In: Frazer K, editor. Cochrane Database of Systematic Reviews. Chichester, UK: John Wiley & Sons, Ltd; 2016.

7. Institute of Medicine (US) Committee on Secondhand Smoke Exposure and Acute Coronary Events. Secondhand Smoke Exposure and Cardiovascular Effects: Making Sense of the Evidence. Washington (DC): National Academies Press (US); 2010. Available at: https://www.ncbi.nlm.nih.gov/books/NBK219565/
doi: 10.17226/12649

8. Öberg M, Woodward A, Jaakkola MS, Peruga A, Prüss-Ustün A. Global estimate of the burden of disease from second-hand smoke II WHO Library Cataloguing-in-Publication Data. WHO Press; 2011.

9. Hoffman SJ, Tan C. Overview of systematic reviews on the health-related effects of government tobacco control policies. BMC Public Health. BMC Public Health; 2015; 15:744.
doi: 10.1186/s12889-015-2041-6

10. World Health Organization. Assessing the national capacity to implement effective tobacco control policies: WHO Operational Manual on planning, conduct and follow-up of joint national capacity assessments. Geneva; 2013.1–56.

11. World Health Organization. Fact sheet on smoke free legislation; 2016. Available at: http://www.euro.who.int/en/health-topics/disease-prevention/tobacco/world-no-tobacco-day/2011-who-

framework-convention-on-tobacco-control/fact-sheet-on-smoke-free-legislation (accessed 10 May 2016).

12. Schoretsaniti S, Filippidis FT, Vardavas CI. Prevalence and determinants of SHS exposure in public and private areas after the 2010 smoke-free legislation in Greece. 2014; 24:401–11. doi: 10.1080/09603123.2013.835033.

13. Fong GT, Hyland A, Borland R, Hammond D, Hastings G, McNeill A, et al. Reductions in tobacco smoke pollution and increases in support for smoke-free public places following the implementation of comprehensive smoke-free workplace legislation in the Republic of Ireland: findings from the ITC Ireland/UK Survey. Tob Control. BMJ Publishing Group Ltd; 2006; 15:iii51-8.
doi:10.1136/tc.2005.013649

14. Gallus S, Zuccaro P, Colombo P, Apolone G, Pacifici R, Garattini S, et al. Effects of new smoking regulations in Italy. Ann Oncol. 2005;17:346–7.
doi:10.1093/annonc/mdj070

15. Harvard School of Public Health. The Greek Tobacco Epidemic. 2011. Available at: http://www.who.int/fctc/reporting/party_reports/greece_annex1_the_greek_tobacco_epidemic_2011.pdf (accessed 25 March 2016).

16. Hellenic Statistical Authority. PRESS RELEASE: HEALTH DETERMINANTS, 2014. Piraeus; 2016.

17. World Health Organization. Report on the Global Tobacco Epidemic, 2015 Greece WHO Framework Convention on Tobacco Control (WHO FCTC) status Summary of MPOWER measures. 2015. Available at: http://www.who.int/tobacco/surveillance/policy/country_profile/grc.pdf (accessed 25 March 2016).

18. Global Adult Tobacco Survey. Country Report, Greece 2013. 2013. Available at: http://www.who.int/tobacco/surveillance/survey/gats/grc_country_report.pdf?ua=1 (accessed 13 April 2016).

19. Fabian LEA, Bernat DH, Lenk KM, Shi Q, Forster JL. Smoke-free laws in bars and restaurants: does support among teens and young adults change after a statewide smoke-free law? Public Health Rep. Association of Schools of Public Health; 2011; 126:669–76. doi:10.1177/003335491112600509

20. Nagelhout GE, Mons U, Allwright S, Guignard R, Beck F, Fong GT, et al. Prevalence and predictors of smoking in "smoke-free" bars. Findings from the International Tobacco Control (ITC) Europe Surveys. Soc Sci Med. 2011; 72:1643–51. doi:10.1016/j.socscimed.2011.03.018.

21. Yong H-H, Foong K, Borland R, Omar M, Hamann S, Sirirassamee B, et al. Support for and Reported Compliance Among Smokers With Smoke-Free Policies in Air-Conditioned Hospitality Venues in Malaysia and Thailand: Findings From the International Tobacco Control Southeast Asia Survey. Asia-Pacific J Public Heal. 2010; 22:98–109.
doi:10.1177/1010539509351303

22. Borland R, Yong H-H, Siahpush M, Hyland A, Campbell S, Hastings G, et al. Support for and reported compliance with smoke-free restaurants and bars by smokers in four countries: findings from the International Tobacco Control (ITC) Four Country Survey. Tob Control. 2006; 15:34–41.

doi:10.1136/tc.2004.008748

23. Hood NE, Ferketich AK, Klein EG, Wewers ME, Pirie P. Individual, social, and environmental factors associated with support for smoke-free housing policies among subsidized multiunit housing tenants. Nicotine Tob Res. 2013; 15:1075–83. doi:10.1093/ntr/nts246

24. Macy J, Chassin L, Presson C. The association between implicit and explicit attitudes toward smoking and support for tobacco control measures. Nicotine Tob Res. 2013; 15:291–6.
doi:10.1093/ntr/nts117

25. Center for Disease Control and Prevention. Global tobacco control: About GTSS. Available at: http://www.cdc.gov/tobacco/global/gtss/index.htm (accessed 26 May 2016)

26. GATS Global Adult Tobacco Survey: Fact Sheet Greece 2013. 2013. Available at: http://www.who.int/tobacco/surveillance/survey/gats/grc.pdf (accessed 4 April 2016)

27. Hellenic Statistical Authority (ELSTAT). Greece in figures: January-March 2016. Athens; 2016. Available at: http://www.statistics.gr/documents/20181/1515741/GreeceInFigures_2016Q1_EN.pdf/53b7a687-807e-4dd5-b8ff-b5ce6c9dc992 (accessed 27 May 2016)

28. Center for Disease Control and Prevention. The Social-Ecological Model: A framework for prevention. 2015. Available at: http://www.cdc.gov/violenceprevention/overview/social-ecologicalmodel.html (accessed 20 March 2016)

29. Ferketich AK, Lugo A, La Vecchia C, Fernandez E, Boffetta P, Clancy L, et al. Relation between national-level tobacco control policies and individual-level voluntary home smoking bans in Europe. Tob Control. 2014; tobaccocontrol-2014-051819. doi:10.1136/tobaccocontrol-2014-051819

30. Li Q, Hyland a, O'Connor R, Zhao G, Du L, Li X, et al. Support for smoke-free policies among smokers and non-smokers in six cities in China: ITC China Survey. Tob Control. 2010; 19 Supp2:i40-6. doi:10.1136/tc.2009.029850

31. Nagelhout GE, Zhuang Y-L, Gamst A, Zhu S-H. Do smokers support smoke-free laws to help themselves quit smoking? Findings from a longitudinal study. Tob Control. 2015 May; 24:233–7.
doi:10.1136/tobaccocontrol-2013-051255

32. Lazuras L, Eiser JR, Rodafinos A. Predicting smokers' non-compliance with smoking restrictions in public places. Tob Control. 2009; 18:127–31.
doi:10.1136/tc.2008.025841

33. Gallus S, Lugo A, Vecchia C La, Boffetta P, Chaloupka FJ, Colombo P, et al. PPACTE, WP2: EUROPEAN SURVEY ON SMOKING Final Report. Dublin. 2012. Available at: http://www.tri.ie/uploads/3/1/3/6/31366051/european_survey_on_economic_aspects_of_smoking_wp2_ppacte.pdf (accessed April 20 2017)