

# Indoor smoking bans in Bulgaria, Croatia, Northern Cyprus, Romania and Turkey

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## ABSTRACT

**Background** The purpose of this study was to examine attitudes towards attempts to limit second-hand smoke (SHS) in five Eastern European nations.

**Methods** The data consist of a Eurobarometer (64.3) survey distributed from November to December 2005. Logistic regression was employed to investigate support levels for indoor smoking bans across the five political units.

**Results** Across nations, there is more support for smoking bans in offices and indoor work spaces and indoor public space as opposed to restaurants and bars and pubs. Personal smoking behaviours are linked strongly with the smoking bans. Most importantly, it is specific knowledge about the health dangers of smoking which fosters support for indoor smoking bans.

**Conclusion** Policy implications suggest that government and the media must disseminate accurate information about the harm of smoking to broader segments of the population to gain support for policies that affect the dangers of SHS in these nations.

Eastern European nations have higher smoking rates than their Western European neighbours; similarly, countries in the East lag behind the West in implementing smoking bans.<sup>1–5</sup> The purpose of this brief report is to assess support for bans on indoor smoking in five nations with high levels of tobacco use and comparatively few restrictions on limiting second-hand smoke (SHS). These nations are Bulgaria, Croatia, Romania, Turkey and the Turkish Republic of Northern Cyprus.

In Bulgaria, Croatia, Romania and Turkey, there are complete smoking bans in healthcare, education and government facilities. Theatres and cinemas also ban smoking in these nations. The most permissive smoking facilities include pubs and bars. There are no restrictions in Romania and Turkey while Bulgaria and Croatia have partial restrictions. After 6 months of experimentation, Croatia partially eased their smoking ban in cafes in response to complaints from smokers and business owners. There are complete bans in indoor workplaces and offices in Bulgaria and Croatia, but only a partial restriction in Turkey and virtually no restrictions in Romania.<sup>2</sup> Despite these legal restrictions, compliance and enforcement have oftentimes been lax.<sup>6</sup>

## METHODS

The data consist of a Eurobarometer (64.3) survey distributed in November to December 2005.<sup>7</sup> In each nation, the sample design consisted of a multistage random probability sample.<sup>7</sup> The

survey research teams carried out a comparison between the sample and the universe in each nation. The universe description was based on Eurostat population data or was drawn from national statistical offices. For all countries, the survey team used a national weighting procedure, using marginal and intercellular weighting, based on the universe description. The iteration procedure took into account gender, age and size of locality. We used the STATA V.10 subprogram SVY: Logistic (regression) to adjust for the complexities of the sampling design. This allowed the application of sample weights for each nation. While the findings are similar when the weights were not utilised, the weighting procedure resulted generally in more conservative estimates and probability levels for the sample size. Further details on the universe sizes can be obtained.<sup>6</sup> The response rates are as follows: Bulgaria (76.2%), Croatia (49.3%), Romania (91.2%), Turkey (68.7%) and Northern Cyprus (89.8%). For the dependent variables, respondents were asked to express their support for bans on smoking in one of four locations: restaurants; bars or pubs; offices and other indoor workspaces; and any indoor public space such as metros, airports and shops. The specific question is, "Are you in favour of smoking bans in the following places?"

The dependent variable originally consisted of five categories (totally opposed to totally in favour); however, an initial ordered logit analysis did not meet the assumption of parallel regressions as indicated by Brant tests in all equations. Thus, we used a logistic regression analysis where 1=totally in favour or somewhat in favour, and 0=totally opposed, somewhat opposed or don't know.

For the explanatory variables, we first measured country-specific effects with dummy variables that were created for Bulgaria, Croatia, Northern Cyprus and Turkey (1,0). Romania serves as the reference (comparison) nation. Two binary variables were created for ex-smokers and non-smokers. The reference category is current smokers. Five possible responses (never to often) were utilised to measure how often an individual was bothered by exposure to tobacco smoke in their daily lives. Assertiveness on SHS was measured by a five-category question (also never to often) that queried whether the respondent ever asked a smoker not to smoke because it bothered him/her. Ideology was captured in a 10-point question where high values represented the right and low values represented the left. Government role legitimacy in health was tapped by a five-category question (totally disagree to totally agree) that asked whether government should "encourage people to eat a healthy diet and take plenty of exercise". A satisfactory diet



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**Table 1** Support for indoor smoking bans in Romania, Bulgaria, Northern Cyprus and Croatia and Turkey

Nation	Romania	Bulgaria	N Cyprus	Croatia	Turkey
Per cent "Totally in favor" or "Somewhat in favor"					
Smoking in restaurants	58.6%	64.7%	79.12%	67.6%	81.3%
Smoking in bars and pubs	50.59%	59.2%	73.0%	46.1%	70.8%
Smoking in indoor work places	69.0%	83.3%	82.8%	82.0%	85.6%
Smoking in indoor public spaces*	72.0%	84.7%	83.4%	82.1%	85.8%
n	1002	1004	500	1000	1005

\*Indoor public spaces include metros, airports and shops.

consisted of five categories (no, not good at all to yes, very good) in answer to the statement "what I eat is good for my health". General health was measured by five categories (very bad to very good). We utilised a five-point question (totally disagree to totally agree) to assess whether the respondent believed that smoking "in the presence of a pregnant woman can be dangerous to the baby". We used a binary variable to determine if the respondent believed that SHS is "harmless" or "harmful". The researchers constructed binary variables for gender, manual worker and unemployment. Women, manual workers and the unemployed were coded "1" with the remainder of the sample coded as "0". We measured education by the total years spent in school.

**RESULTS**

Table 1 lists the percentages of those "totally in favor" or "somewhat in favor" of the smoking bans. Across nations, the greatest level of support for the antismoking measures is found

concerning smoking in indoor workplaces and indoor public spaces. There is much less support for smoking bans in restaurants and bars and pubs. Overall, Romania demonstrates the least support for indoor smoking bans except for smoking bans in bars and pubs, where the Croatians are less likely to be supportive.

Table 2 shows the results of the four multivariable logistic regressions. There is evidence of a strong, consistent nation-specific effect, consistent with the results in table 1. Non-smokers and ex-smokers are more amenable than current smokers towards indoor smoking bans, with higher odds ratios for restaurants and bars and pubs.

On three of the four dependent variables, being bothered by SHS was associated with increased support for smoking bans. More important is individual assertiveness concerning SHS; if a respondent would ask a smoker not to smoke, the ORs are from 1.27 to 1.34 times greater that they would support indoor smoking bans of all types.

**Table 2** Logistic regression explaining attitudes towards indoor smoking bans (ORs)

Explanatory variables	Restaurants			Bars and pubs			Offices			Indoor spaces		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Nation dummies												
Bulgaria	1.66	1.35 to 2.03	<0.001	1.86	1.52 to 2.28	<0.001	2.72	2.15 to 3.46	<0.001	2.50	1.96 to 3.19	<0.001
Croatia	2.07	1.66 to 2.58	<0.001	998	0.814 to 1.22	0.987	2.64	2.08 to 3.37	<0.001	2.20	1.73 to 2.80	<0.001
Turkey	3.09	2.39 to 3.99	<0.001	2.32	1.83 to 2.96	<0.001	2.26	1.72 to 2.97	<0.001	1.97	1.50 to 2.59	<0.001
N. Cyprus	3.38	2.51 to 4.55	<0.001	3.32	2.50 to 4.40	<0.001	2.28	1.70 to 3.06	<0.001	1.93	1.44 to 2.59	<0.001
Smoking behaviour												
Ex-smoker	2.43	1.90 to 3.11	<0.001	2.08	1.66 to 2.60	<0.001	2.08	1.53 to 2.82	<0.001	1.97	1.43 to 2.71	<0.001
Non-smoker	2.47	2.08 to 2.93	<0.001	2.77	2.34 to 3.27	<0.001	1.44	1.18 to 1.75	<0.001	1.24	1.02 to 1.51	0.032
Bothered by SHS	1.12	1.07 to 1.18	<0.001	1.07	1.02 to 1.12	<0.008	1.09	1.03 to 1.15	0.003	1.03	0.973 to 1.09	0.330
Assertiveness on SHS	1.34	1.26 to 1.43	<0.001	1.27	1.20 to 1.34	<0.001	1.27	1.18 to 1.37	<0.001	1.28	1.19 to 1.38	<0.001
Role of government												
Ideology	983	0.951 to 1.02	0.338	996	0.963 to 1.03	0.799	963	0.928 to 0.999	0.045	964	0.927 to 1.10	0.058
Government role legitimate	1.13	1.06 to 1.20	<0.001	1.14	1.07 to 1.20	<0.001	1.11	1.04 to 1.19	0.001	1.07	0.998 to 1.14	0.055
Health												
Diet	1.01	0.929 to 1.09	0.854	1.06	0.982 to 1.14	0.135	980	0.896 to 1.07	0.671	1.03	0.939 to 1.13	0.544
General health	1.09	1.00 to 1.19	0.044	1.08	0.996 to 1.17	0.063	1.18	1.08 to 1.31	<0.001	1.09	0.994 to 1.21	0.067
Smoking belief knowledge												
Hurt pregnant women	1.33	1.22 to 1.45	<0.001	1.22	1.12 to 1.33	<0.001	1.43	1.32 to 1.56	<0.001	1.41	1.29 to 1.53	<0.001
SHS harmless	1.28	1.03 to 1.59	0.029	1.36	1.12 to 1.66	0.002	1.43	1.10 to 1.84	0.007	1.37	1.07 to 1.77	0.014
Demographics												
Gender	0.961	0.824 to 1.12	0.612	1.00	0.869 to 1.16	0.953	1.06	0.894 to 1.26	0.493	1.02	0.859 to 1.21	0.818
Age	1.01	1.00 to 1.01	0.004	1.01	1.01 to 1.02	0.001	1.00	0.997 to 1.01	0.214	1.00	0.997 to 1.01	0.286
Manual worker	1.00	0.821 to 1.23	0.974	1.10	0.913 to 1.34	0.304	1.06	0.842 to 1.33	0.623	1.10	0.869 to 1.39	0.432
Unemployed	1.00	0.773 to 1.30	0.978	1.02	0.787 to 1.32	0.894	1.05	0.790 to 1.41	0.713	1.24	0.914 to 1.69	0.165
Education	1.01	0.922 to 1.11	0.817	0.942	0.867 to 1.02	0.166	0.980	0.885 to 1.08	0.702	0.984	0.889 to 1.09	0.762
n=4511												
F	31.4 (p<0.001)			34.4 (p<0.001)			18.08 (p<0.001)			14.83 (p<0.001)		
df=19												
% Cases correctly classified	73.9%			69.5%			80.2%			81.2%		

SHS, second-hand smoke.

Ideology was significant only in the case of smoking in offices with those on the right somewhat less likely to support the ban. Those who view government as having a strong role in health are more likely to support the smoking bans across all categories, except for the marginal 0.055 level of significance for indoor spaces. Higher general health was associated with greater support for smoking bans in restaurants and offices.

Knowledge of the general harmful effects of smoking and the negative effects of SHS on pregnancies is strongly and consistently related to increased support for the indoor bans.

The present analysis demonstrates no strong demographic effects, with one exception—age; the older the individual, the greater the support for bans in restaurants and bars.

## DISCUSSION

The limitations of this study include the fact that the data on smoking behaviour are self-reported. Given that tobacco use is a somewhat sensitive social issue, there may be some imprecision in the responses. In addition, the results can be generalised only to the nations included in this study, which have a history of high tobacco consumption.

Notwithstanding these limitations, the findings have important implications for policy and practice. First, although smoking is a huge public health problem among these nations, there are important differences in support. Romania has the largest problem in attaining acceptance of the bans. With the exception of Croatia in the case of bars and pubs, support for the indoor bans is stronger across every nation and for each dependent variable. Nonetheless, it is important to note that there was major support in each country for bans in restaurants, bars and pubs, indoor workspaces, and indoor public places (the only exception being support for smoke-free bars and pubs among Croatians), and the support was greater than 70% in 13 of the 20 combinations of locations and country (see table 1). These findings should be advertised to the general population, and to policy makers and other key opinion leaders.

Second, as has been well-documented in the literature, individuals' attitudes are associated with their own smoking behaviour.<sup>8–9</sup> Smokers are less supportive of bans that limit their behaviour. Those who reported better health in general are more supportive of smoking bans.<sup>10</sup> Further, younger respondents are less likely to support smoking bans than older respondents.<sup>11–16</sup>

The best potential for increasing support for indoor smoking bans appears to be respondents learning about the harmful

effects of SHS.<sup>17–19</sup> The analysis has demonstrated that individuals who know about the harmful effects of SHS are more apt to support bans on indoor smoking than others. Media and government must disseminate accurate information on the health effects of SHS if there are to be substantial changes in behaviour. Current efforts include those by the World Health Organization in these nations that encourage utilisation of primary care providers, advocate strong leadership in community and government organizations, and media campaigns to relay information that will increase knowledge and decrease smoking.<sup>20</sup> This information will continue to compete against strong cultural norms that encourage smoking in these Eastern European nations.

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**Competing interests** None.

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**Contributors** JLM wrote the manuscript and edited the content. JSL conducted data analysis and wrote the analysis section of the paper. AB assisted with data analysis and contributed to written sections of the manuscript.

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## What this paper adds

- Many studies of tobacco control policies demonstrate that demographic variables are associated with support for such policies. Age, gender, class, education and employment status have been strong predictors of support for antismoking policies and tobacco use in general.
- In this analysis of indoor smoking bans in Bulgaria, Croatia, Northern Cyprus, Romania and Turkey, demographic variables are of little importance. Instead, knowledge of the potentially harmful effects of tobacco emerges as the more important and consistent explanation of support for these policies. Our findings suggest that public health practitioners in these nations should focus on widely disseminating accurate information on the health effects of second-hand smoke.

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