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Extent and correlates of self-reported exposure to tobacco advertising, promotion, and sponsorship in smokers: Findings from the EUREST-PLUS ITC Europe Surveys

Sarah Kahnert[1,2], **Tibor Demjén**[3], **Yannis Tountas**[4], **Antigona Trofor**[5,6], **Krzysztof Przewoźniak**[7,8], **Witold A. Zatónski**[7,9], **Esteve Fernández**[10,11], **Ann McNeill**[12], **Marc Willemsen**[13,14], **Christina N. Kyriakos**[15,16], **Geoffrey T. Fong**[17,18,19], **Constantine Vardavas**[15,16], **Ute Mons**[1], and **EUREST-PLUS Consortium**[†]

[1]Cancer Prevention Unit and WHO Collaborating Centre for Tobacco Control, German Cancer Research Center (DKFZ), Germany [2]Medical Faculty, Heidelberg University, Germany [3]Smoking or Health Hungarian Foundation (SHHF), Hungary [4]University of Athens (UoA), Greece [5]University of Medicine and Pharmacy "Grigore T. Popa" Iasi, Romania [6]Aer Pur Romania, Romania [7]Health Promotion Foundation (HPF), Poland [8]Oncology Center, Maria Sklodowska-Curie Institute, Poland [9]European Observatory of Health Inequalities, President Stanisław Wojciechowski State University of Applied Sciences, Poland [10]Tobacco Control Unit, Catalan Institute of Oncology (ICO), Spain [11]Cancer Control and Prevention Group, Bellvitge Biomedical

Corresponding author PD Dr. Ute Mons, Cancer Prevention Unit, German Cancer Research Center (DKFZ), Im Neuenheimer Feld 280, 69120 Heidelberg, Germany, u.mons@dkfz.de, Tel.: +49 6221 423007.

[†]EUREST-PLUS Consortium

European Network on Smoking and Tobacco Prevention (ENSP), Belgium
Constantine Vardavas, Andrea Glahn, Christina N. Kyriakos, Dominick Nguyen, Cornel Radu-Loghin, Polina Starchenko

University of Crete (UoC), Greece
Aristidis Tsatsakis, Charis Girvalaki, Sophia Papadakis, Manolis Tzatzarakis, Alexander Vardavas

Kantar Public (TNS), Belgium
Nicolas Bécuwe, Lavinia Deaconu, Sophie Goudet, Christopher Hanley, Oscar Rivière

Smoking or Health Hungarian Foundation (SHHF), Hungary
Tibor Demjén, Judit Kiss, Anna Piroska Kovacs

*Institut Català d'Oncologia (ICO), Spain / Bellvitge Biomedical Research Institute (IDIBELL), Spain*Esteve Fernández, Yolanda Castellano, Marcela Fu, Olena Tigova, Sarah Nogueira

King's College London (KCL), United Kingdom
Ann McNeill, Katherine East, Sara C. Hitchman, Sarah Nogueira

Cancer Prevention Unit and WHO Collaborating Centre for Tobacco Control, German Cancer Research Center (DKFZ), Germany
Ute Mons, Sarah Kahnert

University of Athens (UoA), Greece
Yannis Tountas, Panagiotis Behrakis, Filippos T. Filippidis, Christina Gratziou, Paraskevi Katsaounou, Theodosia Peleki, Ioanna Petroulia, Chara Tzavara

Aer Pur Romania, Romania
Antigona Trofor, Marius Eremia, Lucia Lotrean, Florin Mihaltan

European Respiratory Society (ERS), Switzerland / Goethe University Frankfurt, Germany
Gernot Werde, Tamaki Asano, Claudia Cichon, Amy Far, Céline Genton, Melanie Jessner, Linnea Hedman, Christer Janson, Ann Lindberg, Beth Maguire, Sofia Ravara, Valérie Vaccaro, Brian Ward

University of Maastricht (UniMaas), Netherlands
Marc Willemsen, Hein de Vries, Karin Hummel. Gera Nagelhout

Health Promotion Foundation (HPF), Poland
Witold A. Zatoński, Aleksandra Herbeć, Kinga Janik-Koncewicz, Krzysztof Przewoźniak, Mateusz Zatoński

Department of Psychology, University of Waterloo (UW), Canada / Ontario Institute for Cancer Research, Canada
Geoffrey T. Fong, Thomas Agar, Pete Driezen, Shannon Gravely, Anne C. K. Quah, Mary E. Thompson

Declaration of Interests

None to declare.

Research Institute (IDIBELL), Spain [12]King's College London (KCL), United Kingdom [13]University of Maastricht (UniMaas), Netherlands [14]Netherlands Expertise Center for Tobacco Control (Trimbos Institute), Netherlands [15]European Network for Smoking and Tobacco Prevention (ENSP), Belgium [16]University of Crete (UoC), Greece [17]Department of Psychology, University of Waterloo (UW), Canada [18]School of Public Health and Health Systems, University of Waterloo (UW), Canada [19]Ontario Institute for Cancer Research, Canada

Abstract

Introduction: Tobacco advertising, promotion, and sponsorship (TAPS) are known to promote tobacco consumption and to discourage smoking cessation. Consequently, comprehensive TAPS bans are effective measures to reduce smoking. The objective of this study was to investigate to what extent smokers are exposed to TAPS in general, and in various media and localities, in different European countries.

Methods: A Cross-sectional analysis of national representative samples of adult smokers in 2016 from Germany, Greece, Hungary, Poland, Romania, and Spain (EUREST-PLUS Project, n=6,011), as well as England (n=3,503) and the Netherlands (n=1,213) (ITC Europe Surveys) was conducted. Prevalence of self-reported TAPS exposure is reported by country, and socio-economic correlates were investigated using logistic regression models.

Results: Self-reported exposure to TAPS varied widely among the countries, from 15.4 % in Hungary to 69.2 % in the Netherlands. In most countries, tobacco advertising was most commonly seen at the point of sale, and rarely noticed in mass media. The multivariate analysis revealed some variation in exposure to TAPS by sociodemographic factors. Age showed the greatest consistency across countries with younger smokers (18–24-year-olds) being more likely to notice TAPS than older smokers.

Conclusions: TAPS exposure tended to be higher in countries with less restrictive regulation but was also reported in countries with more comprehensive bans, although at lower levels. The findings indicate the need for a comprehensive ban on TAPS to avoid a shift of marketing efforts to less regulated channels, and for stronger enforcement of existing bans.

Keywords

tobacco marketing; tobacco advertising; tobacco marketing restrictions; regulatory science; Europe

Introduction

Tobacco advertising, promotion, and sponsorship (TAPS) are used by tobacco companies to create positive product and company imagery and associations, with the aim to increase sales [1]. The tobacco industry utilizes a wide spectrum of legally available marketing measures; including direct marketing, such as advertising in mass media (TV, radio, print), on the internet, through outdoor advertising, or at the point of sale; and indirect marketing, such as promotional activities and sponsorship [2].

Although the tobacco industry claims to target only adult smokers, it is well-established that tobacco marketing promotes tobacco use among adolescents [3–5]. It has also been shown that tobacco advertising encourages smokers to increase consumption [6] and interferes with smoking cessation [7–9].

Comprehensive bans on TAPS are known to be effective measures to reduce smoking prevalence [10], while partial marketing restrictions have little or no effect because marketing efforts are shifted to less regulated channels [1,6]. Thus, the World Health Organization Framework Convention on Tobacco Control (WHO FCTC) calls for comprehensive bans on all types of direct and indirect marketing, including cross-border TAPS (WHO FCTC, Article 13) [11]. However, more than ten years after the WHO FCTC came into force, and despite efforts to harmonize advertising regulations across member states of the European Union (EU), there is still some heterogeneity regarding TAPS legislation in Europe [12].

In 2003, several forms of advertising and sponsorship were prohibited at EU level by the Tobacco Advertising Directive (2003/33/EC) [13]. The ban covers advertising in printed media and on the internet, radio advertising and sponsorship, sponsorship of events or activities involving or taking place in several member states or otherwise having cross-border effects (e.g., Formula One races), as well as any free distribution of tobacco products at such events. However, other forms of direct marketing, e.g., outdoor and point of sale advertising, and indirect marketing, e.g., sponsorship of events without cross-border effects, are regulated at national or local level.

While some European countries such as Hungary, Poland, and the UK are quite progressive with regards to TAPS bans, others such as Germany or Greece still lack restrictions on several types of advertising, likely leading to differences across EU countries in TAPS exposure. Thus, the aim of this paper was to study EU cross-country differences in self-reported exposure to TAPS in various media (TV, radio, print, online, billboards) and localities (bars/pubs, points of sale, events). To gain insight into differential tobacco promotion exposure of vulnerable groups, socioeconomic and sociodemographic correlates of exposure were examined overall and within countries. Furthermore, awareness of advertising and information on the dangers of smoking or that encourages cessation, as well as endorsement of tobacco advertising bans at points of sale, were explored.

Methods

Study design

This study was conducted within the context of the European Commission Horizon 2020 funded study entitled European Regulatory Science on Tobacco: Policy implementation to reduce lung diseases (EUREST-PLUS-HCO-06–2015). The EUREST-PLUS Project [14,15], which involves the creation of a cohort of adult smokers in six EU member states (Germany, Greece, Hungary, Poland, Romania, and Spain; total n=6,011) aims to assess the implementation of the Tobacco Products Directive (2014/40/EU) [16] and the WHO FCTC at the European level. The conceptual model of EUREST-PLUS is based on the theory-driven framework of the International Tobacco Control Policy Evaluation Project (ITC),

which hypothesizes the pathways of tobacco control polices on tobacco use behaviours [17]. Data from the first wave of this ITC 6 European Country (ITC 6E) Survey were used for this study. Because all ITC surveys are based on the same methodology and use standardized survey questionnaires [18] it was possible to additionally use cross-sectional data from the first wave of the ITC Four Country Tobacco and E-Cigarette (ITC 4CE1) Survey in England, and from the ITC Netherlands (ITC NL) Survey.

Data collection

The ITC 6E sample, collected between June 18, 2016 and September 12, 2016, comprised 6,011 nationally representative smokers (i.e., adult cigarette smokers) aged 18 or older (about 1,000 in each of Germany, Greece, Hungary, Poland, Romania, and Spain). The geographic strata were regions according to the Classification of Territorial Units for Statistics (NUTS) crossed with degree of urbanization (urban, intermediate, rural). Approximately 100 area clusters were sampled in each country, with the aim of obtaining 10 smokers per cluster. Clusters were allocated to strata proportionally to aged 18 and older population size. Within each cluster, household addresses were sampled using a random walk design. One randomly selected male smoker and one randomly selected female smoker were chosen for interview from a sampled household where possible. Screening of households continued until the required number of smokers from the cluster had been interviewed. All interviews were conducted face-to-face by interviewers using tablets (Computer Assisted Personal Interview, CAPI). For further details, see the ITC 6E Wave 1 Technical Report [19].

Data for Wave 1 of ITC 4CE1 Survey were collected in England between July 7, 2016 and November 16, 2016. The sample comprised the following cohorts: (1) re-contact smokers and quitters living in England who participated in Wave 10 of the earlier ITC 4C Project in the UK, regardless of e-cigarette use; (2) newly recruited current smokers and recent quitters (quit smoking in the past 24 months) from a commercial online panel, regardless of e-cigarette use; and (3) newly recruited current e-cigarette users (use at least weekly) from a commercial online panel. In sampling, quotas obtained from national survey data for region crossed with male/female were applied to (2) and (3). For further details on methods and data collection, see the ITC 4CE Wave 1 Technical Report [20]. Only data from current adult cigarette smokers were used for this study.

Data for Wave 10 of the ITC NL Survey were collected in the Netherlands between November 15, 2016 and December 31, 2016. Respondents were 1,696 adults aged 15 or older recruited as cigarette smokers, who were members of a commercial online panel. The nationally representative sample included 1,318 subjects who had also responded in Wave 9 and 378 new respondents recruited to replenish dropouts. Again, only current adult smokers were included. For further details on methods of data collection, see the ITC NL Wave 10 Technical Report [21].

Study’s ethics procedures

The study was approved by the Research Ethics Board of the University of Waterloo, Ontario, Canada and by local ethics boards within study countries. Participation in the study

was contingent on provision of individual informed consent, which was obtained either in written or verbal form according to local ethical requirements. The EUREST-PLUS Project is registered in Clinicaltrials.gov with trial registration number NCT02773836.

Measures

The questionnaires included relevant socio-demographic variables, such as sex, age, marital status, education, and degree of urbanization. Age was categorized into four age groups (18–24, 25–39, 40–54, and 55 years and older). Marital status was classified into two groups (not married, widowed, divorced or separated, vs. not married but living together, married or registered partners). In each country, education was reclassified to match International Standard Classification of Education (ISCED) coding, which was, in turn, categorized into low (pre-primary, primary, lower secondary), moderate (upper secondary, post-secondary non-tertiary, short-cycle tertiary), and high (bachelor or equivalent, master or equivalent, doctoral or equivalent). The degree of urbanization comprised the three categories rural, intermediate and urban.

The number of cigarettes smoked per day (CPD) and self-reported time to the first cigarette of the day (TTF) were used to create the Heaviness of Smoking Index (HSI) [22]. CPD was categorized into less than 10, 11–20, 21–30, and 31 and more cigarettes, while the categories of TTF were more than 60 minutes, 31–60 minutes, 6–30 minutes, and 5 minutes or less. The HSI was calculated by summing the value of the categorical CPD and categorical TTF, both having category values from 0 to 3, which translates to the HSI having values ranging from 0 to 6. If either value was missing or coded as a non-response, then HSI was also classified as missing or non-response. According to the index value smokers were subsequently categorized into three HSI-groups (0–1: low, 2–4: moderate, 5–6: high).

To gather information on self-reported exposure to TAPS, respondents were asked “Thinking about everything that happens around you, in the last 6 months how often have you noticed things that promote smoking?... It doesn’t have to be advertising – anything that promotes smoking.” Response options were “never”, “rarely”, “sometimes”, “often”, “very often”, and “don’t know”, which were categorized into “yes” (“rarely”, “sometimes”, “often”, “very often”), “no” (“never”), and “don’t know”. Respondents who answered this question affirmatively were asked the following questions about whether they had noticed things that promote smoking in various media and localities in the last 6 months, with response options “yes”, “no”, and “don’t know”: a) on television, b) on radio, c) in newspapers or magazines, d) on social media sites, like Facebook, Twitter, YouTube, Instagram or Snapchat, e) on the internet, f) on posters or billboards, g) in bars or pubs, h) outside shops or stores that sell tobacco, i) Inside shops or stores that sell tobacco, and j) at events like fairs, markets, festivals, sporting events, or music concerts. While all places were prompted in ITC 6E Survey, a)–c), f) and j) were not captured in ITC 4CE1 Survey, and f)–j) were not captured in ITC NL Survey. Additionally, in ITC 4CE1 Survey, there was a single question regarding “websites or social media sites”. Therefore, d) and e) were combined to one variable for comparative analysis. Exposure to things that promote smoking varies across countries and thus, even though site-specific exposure to TAPS was only asked amongst those who had noticed things that promote smoking, site-specific prevalence of exposure to TAPS was

calculated with the whole sample as the denominator in order to allow for a more straightforward interpretation and better comparability of exposure-prevalence.

Furthermore, in all surveys, respondents were asked if they had seen in the last 30 days tobacco packages (ITC 6E and ITC 4CE1 Surveys: “cigarette or roll-your-own tobacco packages”; ITC NL Survey: “cigarette packages”) “being displayed inside shops or stores where people can buy tobacco products, including on shelves or on the counter” (ITC NL Survey does not refer to shops and stores).

To measure awareness of anti-smoking campaigns, respondents of ITC 6E and ITC NL Surveys, were asked “Now I would like you to think about advertising or information that talks about the dangers of smoking or encourages quitting. In the last 6 months, how often have you noticed such advertising or information?”

Moreover, in ITC 6E and ITC NL Surveys, but not in ITC 4CE1 Survey, support of complete bans “on tobacco advertisements inside shops and stores” and “on displays of cigarettes inside shops and stores” was inquired with the response options “not at all”, “somewhat”, and “a lot” which were categorized into “yes” (“somewhat”, “a lot”) and “no” (“not at all”).

Statistical analysis

Percentages of exposure to TAPS in various media (TV, radio, print, online, billboards) and localities (bars/pubs, points of sale, events) were reported for each country. Exposure to things that promote smoking was additionally reported by sex, age group, education, marital status, level of urbanization (except for England and the Netherlands as it was not captured in the surveys), and heaviness of smoking index, and associations were tested for statistical significance using logistic regression models. All analyses incorporated weights derived from the complex sampling design. All statistical tests were two-sided, with an alpha level of 0.05. SAS v9.4 was used throughout.

Results

Table 1 shows the distribution of sociodemographic and socioeconomic characteristics, smoking status, and HSI by country. In most countries, the majority of participants were male, middle aged, of low or moderate educational level, living together with a partner, living in an urban environment, and smoking daily. The mean HSI was highest in Greece (3.0), and lowest in England (2.1) and in the Netherlands (2.1).

Awareness of tobacco marketing and anti-smoking information in various media and localities, as well as support for tobacco advertising and display bans inside shops and stores by country are presented in Table 2. The percentage of smokers noticing things that promote smoking in the last six months varied widely: it was highest in the Netherlands (69.2 %) and lowest in Hungary (15.4 %) (see also suppl. fig. 1 for distributions of frequency categories). TAPS were most commonly observed at points of sale, while it was rarely noticed on TV, radio, and in print media. Awareness of TAPS was especially high in Germany, where more than a third of smokers noticed TAPS on posters/billboards (38.6 %) as well as outside (34.6 %) or inside (40.3 %) shops that sell tobacco. Awareness of tobacco display inside

shops or stores in the last 30 days was highest in Romania (72.3 %), followed by Germany (67.0 %) and Spain (60.9 %), and lowest by a wide margin in England (14.7%).

The percentage of smokers noticing advertising or information on the dangers of smoking or that encourages quitting also varied widely (question not asked in England). It was highest in the Netherlands (75.7 %), and lowest in Spain (31.1 %) and Hungary (32.1 %).

Some ITC surveys allow for a comparison of noticing anti-smoking information vs. noticing things that promote smoking, as a rough measure of "net effect" of anti-smoking vs. pro-smoking information as reported by respondents. Germany and Spain were the only countries where the percentage of smokers noticing anti-smoking information was lower than the percentage of smokers noticing things that promote smoking (Germany: 45.9 % vs. 53.4 %; Spain: 31.1 % vs. 36.9 %).

Complete bans on tobacco advertising inside shops and stores, where assessed, were supported by a majority of smokers in Poland (68.0 %), Hungary (63.3 %), Romania (57.0 %), and Greece (53.1 %) In Spain, the support for this type of ban was lowest (32.2 %). Endorsement of cigarette display bans inside shops and stores was overall lower but also above 50 % in Greece and Hungary, whereas in Spain and Germany only 30.9 % and 30.0 % respectively endorsed such a ban. Of note, these two countries with the lowest support of a display ban were among the countries with the highest percentage of smokers noticing display of tobacco at points of sale.

Correlates of recalling having noticed things that promote smoking with sociodemographic factors and heaviness of smoking are shown in Table 3. For most of the associations patterns were consistent across countries. In most countries female smokers tended to notice promotion of smoking less frequently, but statistically significant sex differences were only seen for England, with an adjusted Odds Ratio (aOR) of 0.71 for female vs. male smokers and 95 % confidence intervals (95 %-CI) ranging from 0.61 to 0.82. In all countries except the Netherlands, a clear age gradient was observed, with younger smokers being more likely to notice promotion of smoking. A clear educational gradient was only seen in Spain, England, and the Netherlands, where lower educated smokers were about 30 to 50 % less likely to notice things that promote smoking. Smokers living in urban areas were more likely to report exposure to things that promote smoking compared to smokers living in rural areas. For HSI, a clear gradient was only seen for Greece, where smokers with low HSI-values were twice as likely to notice things that promote smoking (aOR = 1.96, 95 %-CI: 1.13 to 3.39).

Discussion

Results in context

The analyses showed a wide variety of awareness of both TAPS and anti-smoking information across countries. When comparing country-specific regulations regarding TAPS and through the Tobacco Control Scale's [12] domain 'bans of tobacco advertising' (Table 4), TAPS tended to be noticed more often in countries with less restrictive regulation (e.g., Germany and Greece). In Germany, the only country within the EU where outdoor tobacco

advertising is still allowed, the percentage of smokers having noticed tobacco advertising on billboards was also markedly high compared to other media and countries.

While exposure to individual TAPS channels was also reported in countries with more comprehensive advertising bans (e.g., Hungary and England), this was generally at lower levels as compared to countries with less comprehensive bans. These findings are consistent with a previous study using data from the EU-wide 2014 Eurobarometer survey among the general population, which showed that those living in countries with more comprehensive advertising bans were less likely to report exposure to tobacco advertising in the last twelve months [23]. This supports the conclusion that TAPS bans are effective in reducing exposure to marketing activities for tobacco products.

Although tobacco advertising is banned on TV and radio, in print media, and on the internet, in all countries included in this analysis, substantial proportions of the surveyed smokers (up to 19.1 %) have nevertheless noticed advertising in these media. Also, tobacco advertising exposure was quite common outside and inside of points of sale, even in countries where bans on this kind of advertising have been implemented (Hungary, Romania, and England). The same applies to the display of tobacco products inside shops and stores in England, which quite a few respondents reported to have noticed even though it is banned in this country. While some misreporting cannot be ruled out due to inaccurate recall or other causes, and some of the exposure could be due to non-TAPS sources that are also captured by asking for “things that promote smoking”, the prevalence of self-reported exposure despite bans being in place could possibly point to the exploitation of loopholes or to problems with enforcement.

The multivariate analysis revealed some variation of self-reported exposure to tobacco promotion with sociodemographic factors, of which the age pattern showed the largest consistence across countries with youngest smokers being more likely to notice tobacco promotion than older smokers. This is in line with the recently published study using data from the EU-wide Eurobarometer Survey, which showed a clear age gradient and noted the highest self-reported TAPS exposure among 15- to 24-year-olds [23].

It is noteworthy that support of complete bans on tobacco advertising and on display of tobacco products inside points of sale was moderate to high and tended to be higher in countries where advertising bans at the point of sale were in place. It has been found for smoke-free legislation that comprehensive policies attract more support from smokers than partial policies [24] and it is possible that this applies to advertising bans as well.

Limitations and strengths

Some limitations need to be considered when interpreting the results of this study. First, this study is based on self-reported recall of exposure to TAPS. This measure can be subject to recall bias and in some cases might reflect awareness to TAPS rather than actual exposure. However, self-reported exposure is widely used as a standard method in surveys on TAPS, which makes our results comparable with other studies.

Second, our TAPS exposure measurement captured “things that promote smoking”, which does not necessarily include TAPS alone, but could also include other ways of favourable depictions of smoking, such as through news articles or movies.

Third, the media-specific exposure variable used in this study was based on a simple yes/no-question and does not capture frequency of exposure. This needs to be considered when interpreting country differences as self-reported exposure to TAPS in a country with stronger regulations might reflect a much less frequent actual exposure to TAPS than self-reported exposure in a country with less regulations. The country differences in terms of actual exposure to TAPS might therefore even be larger than found in this study.

Finally, this study is based on cross-sectional samples and thus can only show associations while not allowing any conclusions on the direction of these associations.

On the other hand, the major strength of this study is that the surveys were based on large national probability samples of smokers from eight European countries, using standardized survey questions that assure comparisons across countries.

Conclusions

Exposure to tobacco marketing varied widely between countries. Despite the cross-sectional design precluding causal conclusions, the findings indicate a negative association between comprehensiveness of TAPS legislation and exposure to tobacco marketing. However, significant exposure was found even in countries with more comprehensive TAPS legislation, indicating a need for stronger enforcement and closing of loopholes in line with FCTC guidelines [25]. As TAPS has been shown to reinforce smoking this might help smokers who intend to cut down or quit smoking. Many smokers would even support stronger regulations.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1:

Distribution of sociodemographic, socioeconomic and smoking-related characteristics by country

	Germany N=1003	Greece N=1000	Hungary N=1000	Poland N=1006	Romania N=1001	Spain N=1001	England N=3503	Netherlands N=1213
Sex % (n)								
female	39.1 (392)	46.8 (468)	40.9 (409)	44.5 (448)	41.6 (416)	42.7 (427)	45.9 (1607)	50.8 (617)
male	60.9 (611)	53.2 (532)	59.1 (591)	55.5 (558)	58.4 (585)	57.3 (574)	54.1 (1895)	49.2 (596)
frequency missing (n)	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(1)*	*(0)*
Age group % (n)								
18–24	8.4 (84)	8.4 (84)	9.2 (92)	8.0 (80)	14.3 (143)	12.1 (122)	16.8 (589)	10.8 (131)
25–39	25.6 (256)	28.9 (289)	33.9 (339)	33.5 (337)	38.3 (383)	29.0 (290)	32.3 (1133)	22.8 (277)
40–54	36.5 (366)	35.6 (356)	33.5 (335)	29.5 (297)	30.9 (309)	38.5 (385)	26.2 (919)	27.2 (330)
55+	29.5 (296)	27.2 (272)	23.4 (233)	29.0 (292)	16.6 (166)	20.4 (204)	24.6 (862)	39.2 (475)
frequency missing (n)	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(1)*	*(0)*
Education % (n)								
low	49.6 (497)	30.2 (301)	64.7 (646)	11.8 (117)	24.8 (245)	44.2 (442)	20.3 (686)	22.9 (273)
moderate	42.4 (425)	49.0 (489)	29.2 (292)	77.5 (767)	63.0 (623)	47.9 (479)	66.0 (2237)	44.9 (535)
high	7.9 (79)	20.8 (208)	6.1 (60)	10.8 (106)	12.2 (121)	7.9 (79)	13.7 (464)	32.2 (384)
frequency missing (n)	*(2)*	*(2)*	*(2)*	*(16)*	*(12)*	*(1)*	*(115)*	*(20)*
Marital status % (n)								
not married	37.3 (375)	33.6 (336)	33.5 (334)	33.9 (337)	32.5 (325)	41.1 (411)	50.4 (1751)	42.1 (503)
living with partner/married	62.7 (628)	66.4 (663)	66.6 (664)	66.1 (656)	67.5 (675)	58.9 (590)	49.6 (1720)	57.9 (690)
frequency missing (n)	*(0)*	*(1)*	*(2)*	*(13)*	*(1)*	*(0)*	*(32)*	*(20)*
Level of urbanization % (n)								
rural	19.4 (195)	22.2 (222)	33.5 (335)	37.2 (374)	37.6 (377)	26.4 (264)	†	†
intermediate	38.7 (388)	51.8 (518)	37.4 (374)	23.0 (231)	19.3 (193)	23.6 (237)	†	†
urban	41.9 (420)	26.0 (260)	29.1 (291)	39.8 (400)	43.1 (431)	50.0 (500)	†	†

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	Germany N=1003	Greece N=1000	Hungary N=1000	Poland N=1006	Romania N=1001	Spain N=1001	England N=3503	Netherlands N=1213
frequency missing (n)	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*		
Smoking status % (n)								
less than daily	11.7 (117)	3.1 (31)	1.1 (11)	3.6 (37)	5.2 (52)	2.8 (28)	16.7 (586)	8.5 (103)
daily	88.4 (886)	96.9 (969)	98.9 (989)	96.4 (969)	94.8 (949)	97.2 (973)	83.3 (2916)	91.5 (1110)
frequency missing (n)	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(1)*	*(0)*
HSI[1)] mean (SD)	2.4 (1.5)	3.0 (1.6)	2.9 (1.3)	2.7 (1.4)	2.9 (1.4)	2.3 (1.6)	2.1 (1.5)	2.1 (1.5)
frequency missing (n)	*(121)*	*(30)*	*(12)*	*(68)*	*(54)*	*(32)*	*(386)*	*(42)*

[1)]HSI: Heaviness of Smoking Index; ranges from 0 to 6; calculated by summing the value of the categorical cigarettes per day and categorical time to first cigarette, both having category values from 0 to 3.

[2)]The Netherlandish survey asked for serious quit attempt(s).

[†]not captured in survey

Table 2:

Awareness of tobacco marketing and anti-smoking information in various media and localities and support of tobacco advertising and display bans in points of sales

% of all respondents	Germany	Greece	Hungary	Poland	Romania	Spain	England	Netherlands
noticed things that promote smoking in last 6 months	53.4	25.8	15.4	34.5	40.8	36.9	41.7	69.2
on TV	8.5	2.3	3.7	10.7	16.1	10.4	†	16.9
on radio	2.4	1.0	2.3	5.5	5.5	4.5	†	2.8
in newspapers or magazines	19.1	3.4	2.6	6.7	8.4	4.4	†	6.8
in social media or on internet	14.5	5.1	3.2	9.4	14.1	6.4	5.2	12.7
on posters or billboards	38.6	9.3	1.7	6.0	13.7	4.7	†	†
in bars or pubs	15.4	4.7	1.4	8.4	11.4	13.1	6.8	†
outside shops or stores that sell tobacco	34.6	15.8	3.4	8.4	16.6	9.9	6.3	†
inside shops or stores that sell tobacco	40.3	16.9	5.3	11.6	18.6	14.8	8.6	†
at events (fairs, markets, festivals, sports, concerts)	10.5	2.0	1.0	4.3	9.4	8.9	†	†
noticed display of cigarette or RYO tobacco packages inside shops or stores in last 30 days	67.0	37.1	29.0	49.9	72.3	60.9	14.7	51.7
noticed advertising or information on the dangers of smoking or that encourages quitting in the last 6 months	45.9	37.3	32.1	48.9	61.5	31.1	†	75.7
support complete ban on tobacco advertisements inside shops and stores	41.5	53.1	63.3	68.0	57.0	32.2	†	45.6
support complete ban on display of cigarettes inside shops and stores	30.0	53.2	56.2	49.4	47.4	30.9	†	42.8

† question was not asked in survey

Table 3:

Association of having noticed things that promote smoking with sociodemographic factors and heaviness of smoking; percentages and adjusted Odds Ratios from logistic regression models

	Germany		Greece		Hungary		Poland		Romania		Spain		England		Netherlands	
	N= 880		N= 966		N= 984		N= 920		N= 935		N= 968		N= 3051		N= 1133	
	%	aOR (95 % CI)	%	aOR (95 % CI)	%	aOR (95 % CI)	%	aOR (95 % CI)	%	aOR (95 % CI)	%	aOR (95 % CI)	%	aOR (95 % CI)	%	aOR (95 % CI)
Sex																
female	49.9	0.78 (0.59 to 1.04)	25.3	0.89 (0.66 to 1.20)	15.3	0.94 (0.66 to 1.36)	33.9	1.04 (0.78 to 1.39)	38.9	0.91 (0.69 to 1.20)	35.4	0.89 (0.67 to 1.17)	35.9	0.71 (0.61 to 0.82)	70.9	1.06 (0.82 to 1.37)
male	54.1	1.00	26.2	1.00	15.7	1.00	35.1	1.00	43.3	1.00	37.5	1.00	44.5	1.00	69.2	1.00
Age group																
18–24	61.2	1.69 (0.99 to 2.91)	36.5	1.98 (1.06 to 3.69)	18.2	1.91 (0.95 to 3.84)	51.3	2.57 (1.44 to 4.58)	48.1	1.80 (1.09 to 2.97)	49.5	2.09 (1.23 to 3.52)	55.9	2.54 (1.99 to 3.26)	72.0	0.97 (0.60 to 1.56)
25–39	55.1	1.52 (1.05 to 2.21)	30.0	1.66 (1.06 to 2.60)	17.8	1.94 (1.16 to 3.25)	37.6	1.61 (1.12 to 2.31)	45.2	1.88 (1.26 to 2.81)	36.8	1.24 (0.83 to 1.85)	45.1	1.62 (1.33 to 1.98)	70.3	0.94 (0.67 to 1.33)
40–54	54.4	1.46 (1.04 to 2.03)	26.2	1.50 (0.99 to 2.27)	16.4	1.78 (1.06 to 3.01)	33.1	1.15 (0.79 to 1.68)	39.8	1.46 (0.96 to 2.23)	35.7	1.26 (0.86 to 1.84)	34.1	1.06 (0.86 to 1.31)	70.8	1.02 (0.74 to 1.41)
55+	45.5	1.00	17.5	1.00	10.0	1.00	28.3	1.00	30.6	1.00	30.5	1.00	33.0	1.00	69.0	1.00
Education																
low	52.6	1.06 (0.62 to 1.81)	18.7	0.89 (0.55 to 1.43)	14.0	0.72 (0.35 to 1.47)	23.0	0.94 (0.47 to 1.85)	38.1	0.99 (0.62 to 1.59)	28.7	0.50 (0.29 to 0.84)	36.5	0.71 (0.54 to 0.92)	60.8	0.58 (0.40 to 0.83)
moderate	52.4	1.02 (0.59 to 1.75)	29.8	1.28 (0.87 to 1.89)	18.3	0.95 (0.46 to 1.97)	37.2	1.80 (1.08 to 3.02)	43.2	1.23 (0.80 to 1.89)	42.7	0.78 (0.47 to 1.31)	40.5	0.73 (0.58 to 0.91)	73.0	1.03 (0.75 to 1.41)
high	52.9	1.00	26.4	1.00	19.2	1.00	27.7	1.00	39.8	1.00	45.6	1.00	47.9	1.00	72.7	1.00
Marital status																
not married	56.0	1.27 (0.95 to 1.69)	28.9	1.10 (0.79 to 1.52)	15.6	1.02 (0.69 to 1.49)	38.1	1.15 (0.85 to 1.57)	48.0	1.35 (1.00 to 1.83)	37.7	0.85 (0.63 to 1.14)	42.1	1.00 (0.86 to 1.17)	73.6	1.30 (0.98 to 1.72)
living with partner/married	50.4	1.00	24.2	1.00	15.5	1.00	32.8	1.00	38.4	1.00	35.8	1.00	39.1	1.00	67.6	1.00
Level of urbanization																
rural	58.9	1.20 (0.83 to 1.74)	22.5	0.66 (0.43 to 1.03)	13.6	0.87 (0.55 to 1.38)	26.2	0.44 (0.32 to 0.62)	38.8	0.72 (0.53 to 0.97)	26.7	0.68 (0.48 to 0.96)	†	†	†	†

	Germany N= 880		Greece N= 966		Hungary N= 984		Poland N= 920		Romania N= 935		Spain N= 968		England N= 3051		Netherlands N= 1133	
	%	aOR (95 % CI)	%	aOR (95 % CI)	%	aOR (95 % CI)	%	aOR (95 % CI)	%	aOR (95 % CI)	%	aOR (95 % CI)	%	aOR (95 % CI)	%	aOR (95 % CI)
intermediate	47.8	0.76 (0.56 to 1.03)	23.8	0.67 (0.48 to 0.95)	16.5	1.05 (0.69 to 1.61)	35.5	0.74 (0.51 to 1.06)	35.7	0.64 (0.45 to 0.93)	43.4	1.33 (0.96 to 1.84)	†	†	†	†
urban	54.0	1.00	32.4	1.00	16.5	1.00	42.3	1.00	46.4	1.00	38.7	1.00	†	†	†	†
HSI [1)]																
low (0–1)	55.6	2.52 (1.38 to 4.63)	34.3	1.96 (1.13 to 3.39)	20.4	1.13 (0.52 to 2.48)	29.1	0.91 (0.44 to 1.91)	39.7	0.99 (0.55 to 1.76)	40.5	0.68 (0.41 to 1.14)	45.0	0.82 (0.57 to 1.19)	69.3	0.92 (0.50 to 1.68)
moderate (2–4)	53.0	2.12 (1.20 to 3.74)	25.5	1.42 (0.90 to 2.23)	14.7	0.80 (0.42 to 1.53)	36.5	1.46 (0.76 to 2.82)	41.9	1.08 (0.67 to 1.75)	32.9	0.52 (0.32 to 0.84)	37.5	0.72 (0.50 to 1.02)	70.8	1.06 (0.60 to 1.90)
high (5–6)	35.0	1.00	18.4	1.00	16.9	1.00	26.1	1.00	41.0	1.00	46.6	1.00	43.9	1.00	67.3	1.00

Note: Percentages are not adjusted for covariates. ORs are adjusted for all covariates listed in the table.

[1)] HSI: Heaviness of Smoking Index; ranges from 0 to 6; calculated by summing the value of the categorical cigarettes per day and categorical time to first cigarette, both having category values from 0 to 3.

† not captured in survey

Table 4:

Bans (■) on selected direct and indirect tobacco advertising, promotion and sponsorship in 2016 by country

	DE	GR	HU	PL	RO	ES	EN	NL
Bans on direct tobacco marketing								
National TV and radio	■	■	■	■	■	■	■	■
National newspapers and magazines	■	■	■	■	■	■	■	■
Internet	■	■	■	■	■	■	■	■
Billboards and outdoor advertising	○	■	■	■	■	■	■	■
Ambient media[1)]	○	○	■	■	■	■	■	■
Points of sale	○	○	■	■	■	○	■	○
Bans on indirect tobacco marketing								
Promotional activities (e.g. at events)	○	■	■	■	○	■	■	■
Sponsorship	○	○	■	■	○	■	■	■
Display of tobacco products outside POS[2)]	○	○	■	■	○	■	■	○
Display of tobacco products inside POS	○	○	○	○	○	○	■	○
Internet sales of tobacco products	○	■	■	■	○	■	○	○
TCS[3)] 2016 Advertising Score [12]	4	6	11	11	8	9	12	9

DE: Germany, GR: Greece, HU: Hungary, PL: Poland, RO: Romania, ES: Spain, EN: England, NL: Netherlands

■: ban existent

○: no ban

1)Ambient media: out-of-home-products that are utilised for advertising – generally in the direct living environment of the target group

2)POS: points of sale

3)TCS: Tobacco Control Scale