HHS Public Access

Author manuscript

Tob Control. Author manuscript; available in PMC 2020 May 01.

Published in final edited form as:

Tob Control. 2020 May ; 29(3): 295–304. doi:10.1136/tobaccocontrol-2018-054650.

Cross-country comparison of cigarette and vaping product marketing exposure and use: Findings from 2016 ITC Four Country Smoking and Vaping Survey

Yoojin Cho[1,*], **James F. Thrasher**[1], **K. Michael Cummings**[2], **Hua-Hie Yong**[3,4], **Sara C. Hitchman**[5,6], **Ann McNeill**[5,6], **Geoffrey T. Fong**[7,8,9], **David Hammond**[7], **James W. Hardin**[10], **Lin Li**[3], **Eric N. Lindblom**[11]

[1]Department of Health Promotion, Education & Behavior, Arnold School of Public Health, University of South Carolina, Columbia, SC, USA 29208

[2]Department of Psychiatry & Behavioral Sciences, Medical University of South Carolina, Charleston, SC, USA 29425

[3]Cancer Council Victoria, Melbourne, Victoria, Australia

[4]School of Psychology, Deakin University, Geelong VIC 3125 Australia

[5]King's College London, Addictions Department, Institute of Psychiatry, Psychology & Neuroscience, London, United Kingdom

[6]UK Centre for Tobacco and Alcohol Studies (UKCTAS), United Kingdom

[7]School of Public Health & Health Systems, University of Waterloo, Waterloo, Ontario, Canada

[8]Department of Psychology, University of Waterloo, Waterloo, Ontario, Canada

[9]Ontario Institute for Cancer Research, Toronto, Ontario, Canada

[10]Department of Epidemiology and Biostatistics, Arnold School of Public Health, University of South Carolina, Columbia, SC, USA

[11]O'Neill Institute for National & Global Health Law, Georgetown University Law Center, Washington, DC, USA

Abstract

Objective: To compare exposure to and use of certain cigarette and vaping product marketing among adult smokers and vapers in four countries with contrasting regulations--Australia, Canada, England, and the US.

Data sources: Adult smokers and vapers (n=12,294) from the 2016 ITC Four Country Smoking and Vaping Survey (4CV1).

[*]Corresponding author: Yoo Jin Cho, Department of Health Promotion, Education, and Behavior, Arnold School of Public Health, University of South Carolina, 915 Greene Street, Discovery I, Room 533 Columbia, SC, 29208. ycho@email.sc.edu.

Analysis: Self-reported exposure to cigarette and vaping product advertising through point-of-sale, websites/social media, emails/texts, as well as exposure to and use of price offers were assessed for country differences using logistic regression models adjusted for multiple covariates.

Results: Reported exposure to cigarette advertising exposure at point-of-sale was higher in the US (52.1%) than in Australia, Canada, and England (10.5%−18.5%). Exposure to cigarette advertising on websites/social media and e-mails/texts was low overall (1.5%−10.4%). Reported exposure to vaping ads at point-of-sale was higher in England (49.3%) and US (45.9%) than in Canada (32.5%), but vaping ad exposure on websites/social media in Canada (15.1%) was similar with England (18.4%) and the US (12.1%). Exposure to vaping ads via e-mails/texts was low overall (3.1%−9.9%). Exposure to, and use of, cigarette price offers was highest in the US (34.0% and 17.8%, respectively), but the use rate among those exposed was highest in AU (64.9%). Exposure to, and use of, price offers for vaping products was higher in the US (42.3% and 21.7%) than in Australia, Canada and England (25.9–31.5% and 7.4–10.3%).

Conclusions: Patterns of cigarette and vaping product marketing exposure generally reflected country-specific policies, except for online vaping ads. Implications for research and policy are discussed.

Keywords

Advertising and Promotion; global health; non-cigarette tobacco products; public policy; surveillance and monitoring

INTRODUCTION

Promotion (direct advertising such as ads on mass media and indirect advertising), price (special price offers and discounts), and product packaging are tobacco companies' key marketing strategies [1]. Because tobacco product marketing increases tobacco product use [2], the Framework Convention on Tobacco Control (FCTC) directs the 181 ratifying countries to adopt comprehensive bans on all forms of tobacco marketing [3]. Many countries have banned tobacco marketing through most channels, although implementation challenges remain, especially for online channels [4].

Around the world, most countries have banned cigarette promotion in print and broadcast media [5]. In response, the tobacco industry has shifted its marketing efforts to the point of sale (POS), price, and packaging [6]. As of 2016, Australia (AU), Canada (CA), and England (EN) have extended their cigarette advertising bans to POS, including cigarette displays, but they are still allowed in the US. Price offers at the POS are allowed and common in the US. In AU, price offers can be made using large price boards (1.5×1.5 m) at the POS [7], whereas CA and EN ban price offers but allow the display of prices, using smaller price boards (29.7cm × 42cm) in the case of EN.

Countries have made different approaches to regulate nicotine vaping product (NVP) marketing. As shown in Table 1, EN and US have fewer restrictions on the marketing of NVPs compared to AU and CA. AU prohibits the marketing and sales of NVPs. CA had banned the marketing and sales of NVPs until April 2018 [8, 9], although NVPs were widely available [10]. EN and US allow sales of NVPs to adults both online and in retail shops,

although NVP advertising cannot contain reduced-risk or cessation claims. EN banned cross-border or broadcast advertising and direct NVP advertising via e-mails and text messages, but allows local advertising (e.g., POS) and ads on social media [11]. The US has not banned NVP advertising in any channels.

Studies of adult smokers have found that patterns of self-reported cigarette advertising exposure generally reflect channel-specific advertising restrictions [12–14]. Exposure to any tobacco advertising was lower in European countries with more comprehensive tobacco advertising bans [15]. Between 2008 and 2011, exposure to price offers was associated with continued smoking among smokers in AU and the US but not in CA and UK, but it is unknown whether smokers used the price offers [16, 17].

To date, only one cross-section study (by Wadsworth and colleagues) has examined patterns of exposures to vaping product advertising, finding that between 2013 and 2015 the pattern generally reflected national policies [18]. This paper aims to extend Wadsworth et al's research by addressing the following research questions:

RQ1. Are the patterns of exposure to advertising for cigarettes and/or vaping products from specific channels related to each countries' regulations? As in prior research, we expect that advertising exposures across all channels will be lower in AU and CA than in EN and US; however, we also expect that the 2016 ban of vaping ads through cross-border and broadcast channels in EN will result in lower exposure there than in US, which allows vaping ads through any channel.

RQ2. How are the patterns of exposure to and *use* of price offers for cigarettes and vaping products related to countries' regulations around the product marketing?

RQ3. How is exclusive and concurrent use of cigarettes and NVPs associated with patterns of exposure to cigarettes and vaping product advertising? We expect that use of a particular product will be associated with ad exposure, but we will advance research by comparing concurrent use with exclusive use of each product. In particular, we expect that concurrent users will be more likely to report exposure to both cigarette and vaping ads compared to exclusive users.

METHODS

Sample

The ITC Four Country Smoking and Vaping Wave 1 Survey (4CV1) was conducted in AU, CA, EN, and US from July to November 2016, expanding the 2002–2015 ITC Four Country (4C) survey to include tobacco smokers, former smokers, and exclusive vapers. Respondents who completed the last wave of ITC 4C survey were invited to participate in the 4CV1 survey. The retention rates from the 4C survey ranged from 35.7% to 44.2%. Eligible replenishment respondents were aged 18 or older and were: (1) smokers who had smoked at least 100 cigarettes who smoke at least monthly, or less than monthly but occasionally; (2) former smokers who had quit smoking within the past 24 months; (3) vapers who vape at least weekly. The response rates for replenishment samples ranged from 15.2% to 49.6% by country. Respondents of the ITC 4CV1 were recruited from two or more sources in each

country via random-digit-dialing (RDD) sampling frames, or web-based or addressed-based panels, or a combination of these frames. The ITC 4CV1 sample was designed to be representative of smokers and vapers in each country. A detailed description of sampling methods for each country can be found online [19, 20]. Our sample consisted of 12,294 respondents (AU: n=1,504; CA: n= 3,733; EN: n=4,324; and US: n=2,733). Table 2 presents sample size and characteristics by country.

Measures

Exposure to cigarette adverting was assessed by asking: "In the last 30 days, have you noticed cigarettes or roll-your-own tobacco being advertised in any of the following places: "Inside shops/stores that sell cigarettes?" "Outside shops/stores that sell cigarettes?" "On websites or social media sites?" "In email or text messages?" Response options of "Yes," "No," "Refused," and "Don't know" were recoded, with "Don't know" response coded as "No" and "Refused" taken as missing (same for exposure to vaping product advertising). Responses for the first two items were combined as a dichotomous variable to indicate any exposure to cigarette advertising at the POS (same for exposure to vaping product advertising), with exposure at any of the places inside or outside shops being taken as "Yes."

Exposure to vaping product advertising was assessed by first asking: "Have you ever used an e-cigarette or vaping device, even one time?" with response options of "Yes," "No," "I have never heard of e-cigarettes/vaping devices." Those who had never heard of e-cigarettes were coded as no exposure. Those who had heard of e-cigarettes were asked: "In the last 30 days, have you noticed e-cigarettes, vaping devices, or e-liquid being advertised in any of the following places: "Inside shops/stores that sell cigarettes?" "Outside shops/stores that sell e-cigarettes/vaping equipment?" "On websites or social media sites?" "In e-mail or text messages?" Respondents could answer "Yes", "No", "Refused", and "Don't know."

Exposure to both cigarette and vaping product advertising was assessed by combining the measures of cigarette advertising exposure and vaping product advertising exposure. Those who reported exposures to both cigarette advertising and vaping product advertising were coded as "Yes." Those who reported exposure to only cigarette advertising, only vaping product advertising, or neither of the two products were coded as "No."

Exposure to price offers for cigarettes was assessed by asking: "In the last 30 days, have you noticed any special price offers, such as discounts or coupons, for cigarettes or roll-your-own (RYO) tobacco? (CA, US)" or "In the last 30 days, have you noticed cheaper-than-normal or discount prices for cigarettes or RYO tobacco on price lists? (AU, EN)" Respondents could answer "Yes," "No," "Refused," and "Don't know." The response option "Don't know" was considered as "No" and "Refused" was treated as missing.

Use of price offers for cigarettes.—Those who indicated that they noticed special price offers were asked: "In the last 30 days, have you purchased cigarettes or RYO tobacco at [special prices or with coupons (CA, US)/cheaper-than-normal or discount prices (AU, EN)?" Responses included "Yes," "No," "Refused," and "Don't know." "Don't know" was combined with "No" and "Refused" was treated as missing. Those who did not notice price offers for cigarettes were coded as "No."

Exposure to price offers for vaping products was assessed by asking: "In the last 30 days, have you noticed any special price offers, such as discounts or coupons, for e-cigarettes/ vaping devices or e-liquid?" with response options of "Yes, and purchased as a result", "Yes, but not purchased", "No", "Refused", and "Don't know". The variable was dichotomized by combining the "Yes" categories. "No" and "Don't know" were also combined, and "Refused" was coded as missing.

Use of price offers for vaping products.—Those who indicated that they noticed special price for vaping products and purchased as a result were coded as "Yes." Those who answered "Yes, but not purchased," "No," and "Don't know" to the question asked about exposure to special price offers for vaping products were coded as "No."

Respondent type.—Depending on respondents' smoking and vaping status, we categorized them into four types: exclusive smokers, concurrent users (i.e., both vape and smoke at least monthly), exclusive vapers, and former smokers. To assess smoking status, respondents were asked: "How often, if at all, do you currently smoke ordinary cigarettes (either factory-made/packet or roll-your-own)?" Response options were "Daily", "Less than daily, but at least once a week", "Less than weekly, but at least once a month", "Less than monthly, but occasionally", and "Not at all". To assess vaping status, respondents were first asked: "Have you ever used an e-cigarette or vaping device, even one time?", with response options of "Yes", "No", "I have never heard of e-cigarettes/vaping devices", "Refused", and "Don't know." Those who answered "Yes" were asked: "How often, if at all, do you currently use e-cigarettes/vaping devices (i.e. vape)?" Response options were "Daily", "Less than daily, but at least once a week", "Less than weekly, but at least once a month", "Less than monthly, but occasionally", and "Not at all". Those who were current smokers (who did not answer "Not at all" to the question about current cigarette smoking status) but were not current vapers (who answered "Less than monthly, but occasionally" or "Not at all" to the question about current vaping status) were treated as "exclusive smokers." Those who were current users of both cigarettes and vaping products were categorized as "concurrent users." Those who were current vapers but were not current smokers were categorized as "exclusive vapers." Those who were not current smokers were asked whether they had smoked 100 or more cigarettes over their lifetime, and if so, they were treated as "former smokers" if they were not current vapers.

Covariates.—Covariates included age (18–24, 25–39, 40–54, >=55), sex (male, female), educational attainment (low [high school or less in AU, CA, and US or primary, secondary school, apprenticeship, vocational level 3 or less in EN], moderate [technical, trade school, community college, some university but no degree in AU, CA and US, or training college below degree level or some university but no degree in EN], high [completed university or postgraduate studies]), and annual household income (low [<US$30,000 in AU, CA, and US or ≤£15,000 in EN]), moderate [between US$30,000 and US $59,999 in AU, between US $30,000 and US$44,999 in CA and US, and between £15,001 and £30,000 in EN], high [≥US$60,000 in AU, US$45,000 in CA and US, and £30,001 in EN]) [21].

Analysis

Variables were assessed for differences among countries using chi-square tests. For each country, prevalence estimates for exposure to and use of cigarette and vaping product marketing were estimated. Logistic regression models that pooled data for all countries were used to assess cross-country difference and correlates of exposure to and use of cigarette and vaping product marketing, adjusting for all covariates. The estimated coefficients were compared between pairs of countries using Wald tests, adjusting for multiple comparisons using the Bonferroni method to control for Type 1 error.

We conducted four sensitivity analyses to assess potential bias due to misclassification. Models were re-estimated after excluding: (1) respondents who had never heard of vaping products (0.7% of sample); (2) respondents who reported “don’t know” when asked about their ad exposure (2.8–4.3% of sample, depending on the outcome); and (3) respondents who had not noticed price offers (80.0% of sample for cigarettes; 34.3% of sample for vaping products). Finally, we estimated prevalence estimates for exposure to advertising of both cigarettes and vaping products, as well as the cross-country difference and correlates, which are reported in Supplementary Table 1. Results of the analyses were not meaningfully different from the results reported in the main text, except for the third analysis results (See Supplementary Table 2). Each analysis was conducted using Stata 13.0 and was adjusted for sampling weights designed to make the sample representative of the general population of tobacco users in each country in terms of demographic characteristics (e.g., age, sex, and geographic region).

RESULTS

Reported exposure to cigarette advertising by country

The prevalence of cigarette advertising exposure at POS (Table 3) was highest in US (52.1%), followed by CA (18.5%), EN (13.6%) and AU (10.5%). The prevalence of cigarette advertising exposure on websites or social media (Table 4) was highest in US (10.4%), followed by Canada (6.8%), EN (5.7%) and AU (2.7%). The prevalence of cigarette advertising exposure in e-mail or texts (Table 4) was also highest in US (7.6%), followed by England (3.3%) and Canada (3.2%), and then Australia (1.5%).

Reported exposure to vaping product advertising by country

The prevalence of vaping product advertising exposure at POS was highest in EN (49.3%), followed by US (45.9%), then CA (32.5%), and lowest in AU (6.4%); exposure rates did not differ significantly between EN and US (Table 3). Exposure to vaping product advertising on websites or social media was highest in EN (18.4%), followed by CA (15.1%), then US (12.1%), and finally AU (5.0%); the prevalence did not significantly differ between CA and US (Table 4). Exposure to vaping product advertising in e-mail or texts in EN (9.9%) and US (7.5%) was higher than in AU (3.1%) and CA (3.9%).

Reported exposure to both cigarette and vaping product advertising by country

The prevalence of exposure to both cigarette and vaping product advertising at POS was highest in the US (36.5%), followed by CA (11.7%) and EN (9.5%), not significantly

different, and then AU (3.3%). Exposure to both cigarette and vaping product advertising on websites or social media and e-mails or texts was low overall across countries, with the exposure rates ranging from 0.5% (e-mails or texts in AU) to 5.9% (websites or social media in US).

Reported exposure to and use of price offers for cigarettes

Exposure to cigarette price offers (Table 5) was highest in US (34.0%), followed by AU (8.2%), CA (7.8%), and EN (3.6%). The prevalence of use of cigarette price offers was also highest in US (17.8%), followed by AU (5.3%), CA (2.4%) and EN (1.5%). Among those who were exposed to price offers for cigarettes, the prevalence of using the offers was highest in AU (64.9%, significantly higher than 52.3% in US, AOR=2.2, p=0.017) and lowest in CA (31.0%, AOR=0.5, p<.001; Supplementary Table 2).

Reported exposure to and use of price offers for vaping products

Exposure to price offers for vaping products (Table 5) was highest in US (42.3%), followed by EN (31.5%), AU (29.1%) and CA (25.9%). The prevalence of use of price offers for vaping products was highest in US (21.7%), followed by EN (10.3%), CA (7.8%) and AU (7.4%). Among those who were exposed to price offers for vaping products, the use of the price offers was significantly lower in CA (30.1%) and EN (32.7%) than in US (51.2%) (AOR=0.4, 0.4; p<0.001, p=0.001, respectively; Supplementary Table 2).

Correlates of cigarette marketing exposure and use

Compared to exclusive smokers, concurrent users were more likely to report cigarette advertising exposure in any channel (p<.001; Tables 3, 4) and to report exposure to price offers for cigarettes (p=0.025; Table 5), but use of the offers did not differ between exclusive smokers and concurrent users (Table 5).

Correlates of exposure to vaping product ads

Exclusive vapers were more likely than exclusive smokers to report exposure to vaping product advertising in any channel (p<0.01, p<.001; Tables 3, 4).

Correlates of exposure to both cigarette and vaping product ads

Compared to exclusive smokers, concurrent users were more likely to report exposure to both cigarette and vaping product marketing in any channel (p<.001; Supplementary Table 1).

DISCUSSION

As expected, our study found higher cigarette advertising exposure across all the channels we studied in US compared to AU, CA, and EN where stricter regulations prohibit the cigarette advertising [12–14]. For instance, in US, where cigarette advertising at POS is common and cigarette displays are allowed, we observed considerably higher reported cigarette advertising exposure at POS (52.1%) than each of the other countries (10.5% to 18.5%). Our study suggests a successful implementation of the POS ban in EN, given that 87% of smokers in UK reported exposure to cigarette display and advertising at POS in 2010

and POS display was banned in all shops in EN as of April 2015 [14], whereas less than 15% of respondents in EN reported cigarette advertising at POS in our study. Yet, given that cigarette advertising exposure was most common at POS in all countries, future research should identify loopholes in current regulations to remove them; for instance, the POS display bans do not apply to smoking-related products such as rolling papers and lighters in EN.

We also found that reported exposure to price offers for cigarettes was higher in US (34.0%) where price offers were allowed, compared to CA (7.8%) and EN (3.6%) where price offers were banned. Compared to US (34%), exposure to price offers was much lower in AU (8.2%), where POS price offers appear primarily limited to price boards. However, among those exposed, the proportion of those purchasing at special price was highest in AU (64.9% vs. 52.3%−31.0% in the other countries). This higher utilization rate among those exposed to special price offers in AU likely reflects that price boards were being directly used by some smokers to find less-expensive brands in a response to the ongoing, substantial increases in cigarette taxes and prices in AU [7], suggesting that price offers in AU should be restricted to increase the impact of tax policy.

Again, not unexpectedly, we found that exposure to vaping advertising at POS was higher in EN (49.3%) and US (45.9%) where vaping advertising is permitted at POS, compared to AU (6.4%) and CA (32.5%) where sales and marketing of NVPs were banned at the time of data collection. The relatively higher exposure to vaping product advertising at POS in CA than AU confirms results from a preliminary report that NVPs were still available in CA at the time of the survey despite the sales ban due to weak enforcement [10, 22]. The finding of high exposure to vaping product advertising at POS in EN is also consistent with prior research reporting high levels of NVP advertising at POS in EN after cigarette POS displays were banned and tobacco companies began investing in NVPs [23]. Our findings suggest that vaping advertising efforts in EN may be concentrated on permitted media, such as POS, reflecting bans on NVP ads through company or retailer websites and e-mails or text messages implemented in 2016. For instance, compared to US, reported exposure to vaping ads at POS was higher in EN, whereas there was no difference in reported exposure to vaping ads in e-mail or text messages between EN and US.

Our results suggest the difficulty in enforcing bans on online NVP marketing. Despite a complete ban on the sale and marketing of NVPs, prevalence of exposure to vaping product advertising on websites or social media in CA (15%) was similar to US (12%), which had virtually no restriction on online marketing. Exposure to vaping product advertising on websites/social media was highest in EN (18%), where online NVP advertising (but not social media advertising or online sales) was banned 2 months before data collection [11]. Given that online NVP advertising may include misleading information [24] and may expose minors to this content [25], policies should aim to limit misleading online advertising.

Our paper can help inform discussions around whether NVPs are a viable substitute for cigarettes. As expected, compared to exclusive smokers, exclusive vapers and concurrent users were more likely to report vaping ad exposure; however, concurrent users also were

more likely than exclusive smokers to report exposure to cigarette ads through any channel. This may be because cigarette advertising is present in stores that sell vaping products, which may impede complete switching to vaping products. However, our cross-sectional results are also subject to selection bias because consumers are likely to be exposed to ads at the places where they purchase their products [22]. To better illuminate these issues, longitudinal studies should integrate product purchase locations and trajectories of concurrent and exclusive product use.

This study has several limitations. First, our analysis is cross-sectional, limiting our ability to assess the temporality of the relationship between marketing exposure and smoking or vaping status. However, the cross-country comparisons provide meaningful information on the patterns of differences across regulatory environments. Second, our self-report measures may not accurately reflect real-world exposure. We also did not assess the frequency of exposure. However, our measures involved a shorter time frame (1 month) than Wadsworth et al's research to minimize recall bias [26]. Future studies using more objective measures of exposure can confirm our findings. Third, the US Food and Drug Administration (FDA) expanded its regulatory authorities to include NVPs in the May 2016 final deeming rule. As a result, a ban on free distribution of NVPs became effective during our data collection in August 2016. Moreover, the 2009 Tobacco Control Act expanded the ability of states and localities to regulate tobacco marketing and certain cigarette and NVP marketing/sales restrictions in the US vary by states. Future research should therefore examine the effect of free distribution ban or the variation in local policies. Lastly, the outcomes in relation to price offers for cigarettes should be interpreted with caution, especially when comparing them with vaping products, given that the measure did not distinguish between factory-made (FM) and RYO cigarettes, for which price promotion strategies may differ.

Our study examined exposure to both cigarette and vaping product marketing across countries with different legislative environments among exclusive smokers, exclusive vapers, and concurrent users of NVPs and cigarettes to determine how these environments and product use appeared to shape patterns of advertising exposure. Overall, our analyses indicate that cigarette marketing exposure is highest in US and respondents in AU appear particularly likely to use price offers. Compared to US, which had no channel-specific ad bans, respondents in Canada that completely banned sales and marketing of NVPs at the time of the survey reported lower exposure to advertising at POS but reported similar ad exposure from online channels. Compared to exclusive smokers, exclusive vapers and concurrent users were more likely to report vaping ad exposures. Our findings highlight the need for restricting price offers in AU, the difficulty of regulating online NVP advertising and the possibility that vaping ads influence vaping product use among exclusive smokers.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

REFERENCES

[1]. Henriksen L. Comprehensive tobacco marketing restrictions: promotion, packaging, price and place. Tobacco Control 2012;21(2):147–153. [PubMed: 22345238]

[2]. Saffer H, Chaloupka F. The effect of tobacco advertising bans on tobacco consumption. Journal of Health Economics 2000;19(6):1117–1137. [PubMed: 11186847]

[3]. World Health Organization. Guidelines for implementation of Article 13 of the WHO Framework Convention on Tobacco Control (Tobacco advertising, promotion and sponsorship). Geneva, Switzerland: World Health Organization 2008.

[4]. Freeman B. New media and tobacco control. Tobacco Control 2012;21(2):139–144. [PubMed: 22345236]

[5]. World Health Organization. WHO report on the global tobacco epidemic, 2017: monitoring tobacco use and prevention policies. Geneva, Switzerland: World Health Organization 2017.

[6]. Lavack AM, Toth G. Tobacco point-of-purchase promotion: examining tobacco industry documents. Tobacco Control 2006;15(5):377–384. [PubMed: 16998172]

[7]. Bayly M, Scollo M, White S, et al. Tobacco price boards as a promotional strategy—a longitudinal observational study in Australian retailers. Tobacco Control 2017.

[8]. Canada Health. Notice - To All Persons Interested in Importing, Advertising or Selling Electronic Smoking Products in Canada. 2009.

[9]. Canada Health. Vaping Products. 2018.

[10]. Hammond DW, Christine M; Czoli Christine D.; Martin Christina L.; Magennis Paul; Shiplo Samantha. Retail availability and marketing of electronic cigarettes in Canada. Canadian Journal of Public Health 2015;106(6):E408. [PubMed: 26680433]

[11]. UK Department of Health. Article 20(5), Tobacco Products Directive: restrictions on advertising electronic cigarettes. 2016.

[12]. Kasza KA, Hyland AJ, Brown A, et al. The Effectiveness of Tobacco Marketing Regulations on Reducing Smokers' Exposure to Advertising and Promotion: Findings from the International Tobacco Control (ITC) Four Country Survey. International Journal of Environmental Research and Public Health 2011;8(2):321. [PubMed: 21556189]

[13]. Harris F, MacKintosh AM, Anderson S, et al. Effects of the 2003 advertising/promotion ban in the United Kingdom on awareness of tobacco marketing: findings from the International Tobacco Control (ITC) Four Country Survey. Tobacco Control 2006;15(suppl 3):iii26–iii33. [PubMed: 16754943]

[14]. Li L, Borland R, Fong GT, et al. Impact of point-of-sale tobacco display bans: findings from the International Tobacco Control Four Country Survey. Health Education Research 2013;28(5):898–910. [PubMed: 23640986]

[15]. Filippidis FT, Laverty AA, Fernandez E, et al. Correlates of self-reported exposure to advertising of tobacco products and electronic cigarettes across 28 European Union member states. Tobacco Control 2017.

[16]. El-Toukhy S, Choi K, Hitchman SC, et al. Banning tobacco price promotions, smoking-related beliefs and behaviour: findings from the International Tobacco Control Four Country (ITC 4C) Survey. Tobacco Control 2017.

[17]. Choi K, Chen JC, Tan ASL, et al. Receipt of tobacco direct mail/email discount coupons and trajectories of cigarette smoking behaviours in a nationally representative longitudinal cohort of US adults. Tobacco Control 2018.

[18]. Wadsworth E, McNeill A, Li L, et al. Reported Exposure to E-cigarette Advertising and Promotion in Different Regulatory Environments: Findings from the International Tobacco Control Four Country (ITC-4C) Survey. In preparation.

[19]. Thompson ME, Fong GT, Boudreau C, et al. Methods of the ITC Four Country Smoking and Vaping Survey, Wave 1 (2016). Addiction Under Review.

[20]. ITC Project. ITC Four Country Smoking and Vaping Survey, Wave 1 (4CV1) Technical Report. University of Waterloo, Waterloo, Ontario, Canada; Medical University of South Carolina, Charleston, South Carolina, United States; Cancer Council Victoria, Melbourne, Australia; King's College London, London, United Kingdom 2018.

[21]. Siahpush M, McNeill A, Borland R, et al. Socioeconomic variations in nicotine dependence, self-efficacy, and intention to quit across four countries: findings from the International Tobacco Control (ITC) Four Country Survey. Tobacco Control 2006;15(suppl 3):iii71–iii75. [PubMed: 16754950]

[22]. Braak D, Cummings KM, Nahhas GJ, et al. How does the regulatory environment influence where vapers get their products? Findings from the International Tobacco Control (ITC) 4-Country Smoking and Vaping Survey. In Preparation.

[23]. Hsu R, Myers AE, Ribisl KM, et al. An observational study of retail availability and in-store marketing of e-cigarettes in London: potential to undermine recent tobacco control gains? BMJ Open 2013;3(12).

[24]. Grana RA, Ling PM. "Smoking Revolution": A Content Analysis of Electronic Cigarette Retail Websites. American Journal of Preventive Medicine 2014;46(4):395–403. [PubMed: 24650842]

[25]. Dai H, Hao J. Exposure to Advertisements and Susceptibility to Electronic Cigarette Use Among Youth. Journal of Adolescent Health 2016;59(6):620–626. [PubMed: 27528472]

[26]. Wadsworth E, McNeill A, Li L, et al. Reported exposure to E-cigarette advertising and promotion in different regulatory environments: Findings from the International Tobacco Control Four Country (ITC-4C) Survey. Preventive Medicine 2018;112:130–137. [PubMed: 29678615]

WHAT THIS PAPER ADDS

What is already known

- In Australia, which bans cigarette advertising to point of sale (POS), including cigarette displays, but continues to allow large price boards, exposure to price offers has been associated with continued smoking among smokers.
- The strictness of country-level marketing restrictions on nicotine vaping products (NVPs) is generally associated with self-reported exposure to vaping product marketing across channels.

Gaps in knowledge

- No study has examined cross-country differences in use of price offers.
- No study has examined cross-country differences in past-month self-reported exposure to vaping product advertisements among both smokers and vapers after England banned vaping product advertising through company or retailer websites and e-mails or text messages.

What this study adds

- The use of price offers among respondents who were exposed to price offers was higher in Australia (64.9%) than US (52.3%), suggesting that smokers in Australia are particularly likely to use price offers, likely due to high cigarette taxes.
- Exposure to vaping product advertisements on websites or social media does not follow country-specific policies, which suggests difficulties enforcing online marketing bans.

Table 1.

Federal Bans on cigarette and nicotine vaping product marketing across countries during the study period

Country	**Australia**		**Canada**		**England**		**US**	
ITC 4CV Survey dates	**Jul 25 - Oct 30 2016**		**Jul 11 - Oct 30 2016**		**Jul 7 - Sep 30 2016**		**Jul 7 - Sep 30 2016**	
Type	**Cig**	**NVP**	**Cig**	**NVP**	**Cig**	**NVP**	**Cig**	**NVP**
Bans on advertising								
Point of Sale	✓	✓	✓	✓	✓	0	0	0
Websites or Social Media Sites	✓	✓	✓	✓	✓	0*	0	0
Bars or pubs	0	✓	0	✓	✓	0	0	0
Email or text message(s)	✓	✓	✓	✓	✓	✓	0	0
National TV, radio	✓	✓	✓	✓	✓	✓	✓	0
Billboards	✓	✓	✓	✓	✓	0	✓	0
Newspapers and magazines	✓	✓	✓	✓	✓	✓	0	0
Regular postal mail	✓	✓	0	✓	✓	0	0	0
Events	✓	✓	✓	✓	✓	0	✓	0
Bans on promotion								
Free distribution	0	✓	✓	✓	✓	0	✓	✓
Promotional discounts	0	✓	✓	✓	✓	✓	0	0
Product display at point of sale	✓	✓	✓	✓	✓	0	0	0

Point-of-sale cigarette advertising/display ban was gradually adopted in all shops (England) and/or provinces/territories (Canada/Australia).

*England banned vaping product advertising on the internet but permitted advertisements on blogs, tweets, and the sale of vaping products on the internet

Cig, cigarette; ITC, International Tobacco Control; NVP, nicotine vaping product; TV, television.

Table 2.

Sample Characteristics by country and sample groups, % (95% CI), Weighted†

Socio-demographics & product use	Country				Entire Sample
	Australia	Canada	England	US	
	N=1,504	N=3,733	N=4,324	N=2,733	N=12,294
Age*					
18–24	12.4 (8.7, 16)	13.4 (12.3, 14.6)	15.5 (13.9, 17.1)	10.4 (8.7, 12.2)	13.4 (12.5, 14.3)
25–39	37.3 (33.1, 41.5)	29 (26.9, 31.1)	34.0 (31.7, 36.3)	31.4 (28.5, 34.3)	32.3 (31, 33.6)
40–54	27.5 (24.6, 30.4)	30.6 (28.6, 32.7)	26.0 (24.1, 27.9)	29.0 (26.3, 31.7)	28.2 (27.1, 29.4)
>=55	22.9 (20.3, 25.4)	27.0 (25.1, 28.8)	24.5 (22.7, 26.2)	29.2 (26.9, 31.5)	26.1 (25.1, 27.1)
Sex*					
Male	55.6 (51.6, 59.6)	58.3 (56.3, 60.4)	53.3 (51.1, 55.6)	55.4 (52.5, 58.2)	55.6 (54.3, 56.9)
Female	44.4 (40.4, 48.4)	41.7 (39.6, 43.7)	46.7 (44.4, 48.9)	44.6 (41.8, 47.5)	44.4 (43.1, 45.7)
Education*					
Low	38.8 (34.9, 42.7)	28.3 (26.3, 30.2)	18.2 (16.8, 19.6)	49.0 (46.0, 51.9)	30.7 (29.5, 31.9)
Moderate	37.2 (33.4, 41.1)	45.8 (43.6, 48)	65.2 (63.3, 67.2)	34.8 (32.1, 37.5)	49 (47.7, 50.3)
High	23.9 (20.4, 27.5)	25.9 (24, 27.8)	16.6 (15.2, 18)	16.3 (14.4, 18.1)	20.3 (19.3, 21.2)
Income*					
Low	17.9 (14.9, 20.8)	19.2 (17.6, 20.8)	20.4 (18.6, 22.2)	35.9 (33.1, 38.7)	23.2 (22.1, 24.3)
Moderate	24.5 (21.1, 27.8)	26.8 (25, 28.7)	28.5 (26.5, 30.4)	31.8 (29.0, 34.5)	28.2 (27, 29.4)
High	50.3 (46.3, 54.3)	46.1 (43.9, 48.3)	41.8 (39.5, 44.1)	31.2 (28.6, 33.8)	41.8 (40.5, 43.1)
No information	7.4 (5.3, 9.5)	7.9 (6.6, 9.1)	9.3 (8.0, 10.7)	1.1 (0.5, 1.8)	6.8 (6.1, 7.5)
Respondent type*					
Exclusive smokers	70.3 (66, 74.6)	57.9 (55.6, 60.2)	58.8 (56.4, 61.2)	65.3 (62.4, 68.3)	61.4 (60, 62.8)
Concurrent users	2.7 (2.1, 3.2)	9.1 (8.4, 9.8)	9.9 (9.1, 10.7)	8.1 (7.3, 8.9)	8.4 (8, 8.8)
Exclusive vapers	2.0 (1.0, 3)	6.0 (5, 6.9)	10.7 (9.0, 12.3)	6.9 (5.2, 8.5)	7.3 (6.6, 8.1)
Former smokers	25.0 (20.7, 29.4)	27.0 (24.5, 29.5)	20.6 (18.1, 23.2)	19.7 (16.8, 22.6)	22.9 (21.4, 24.3)

*$p<0.05$ for difference across countries

†N represents the unweighted number of respondents in each country.

Table 3.

Self-reported exposure to cigarette and vaping product advertisements at point of sale among adult smokers and vapers in the ITC Four Country Smoking and Vaping Survey, 2016

	Cigarettes				Vaping products			
	%*	95% CI	AOR†	95% CI	%*	95 CI	AOR‡	95% CI
Country								
USA	52.1	49.1, 55.1		Ref	45.9	42.9, 48.8		Ref
Australia	10.5	8.0, 13.0	**0.1**	0.1, 0.1	6.4	4.3, 8.5	**0.1**	0.1, 0.1
Canada	18.5	16.9, 20.2	**0.2**	0.1, 0.2	32.5	30.4, 34.6	**0.6**	0.5, 0.6
England	13.6	12.0, 15.3	**0.1**	0.1, 0.1	49.3	47.0, 51.6	1.1	0.9, 1.3
Age								
18–24	34.0	30.9, 37.2		Ref	48.5	44.9, 52.0		Ref
25–39	23.8	21.7, 26.0	**0.5**	0.4, 0.6	38.9	36.3, 41.5	**0.6**	0.5, 0.8
40–54	20.1	18.2, 22.0	**0.4**	0.3, 0.4	35.1	32.9, 37.4	**0.5**	0.4, 0.6
>=55	20.2	18.6, 21.9	**0.3**	0.3, 0.4	35.3	33.2, 37.3	**0.5**	0.4, 0.6
Sex								
Male	24.3	22.8, 25.9		Ref	38.7	36.9, 40.6		Ref
Female	21.7	20.3, 23.2	**0.7**	0.7, 0.9	37.3	35.6, 39.1	**0.9**	0.8, 1.0
Education								
Low	26.5	24.4, 28.5		Ref	34.3	32.1, 36.5		Ref
Moderate	21.2	19.6, 22.7	1.1	1.0, 1.3	41.6	39.7, 43.6	**1.2**	1.0, 1.3
High	23.5	21.4, 25.7	**1.2**	1.0, 1.5	36.0	33.5, 38.6	1.1	0.9, 1.3
Income								
Low	29.3	26.9, 31.7		Ref	39.1	36.4, 41.7		Ref
Moderate	24.2	22.3, 26.2	0.9	0.8, 1.1	38.8	36.4, 41.2	1.1	0.9, 1.2
High	20.1	18.5, 21.7	**0.9**	0.7, 1.0	38.3	36.2, 40.3	1.1	1.0, 1.3
No information	16.5	12.3, 20.7	1.0	0.7, 1.4	30.9	26, 35.8	0.8	0.6, 1.0
Respondent type								
Exclusive smokers	23.5	22.3, 24.6		Ref	35.3	34.0, 36.7		Ref
Concurrent users	32.2	30.2, 34.1	**1.5**	1.3, 1.8	50.0	47.7, 52.3	**1.6**	1.4, 1.9
Exclusive vapers	17.7	13.9, 21.6	**0.7**	0.5, 1.0	51.5	46.0, 57.0	**1.5**	1.2, 1.9
Former smokers	20.7	17.6, 23.9	1.1	0.9, 1.5	37.0	33.4, 40.7	1.0	0.8, 1.2
N	11,916		11,807		11,839		11,730	

Statistically significant estimates are bolded.

*Weighted estimates; the number of participants indicates the number before case-wise deletion due to missing values.

†Between-country comparisons adjusted by Bonferroni's correction: AU≠CA (p=0.0012), AU=EN (p>0.05), CA≠EN (p=0.0018)

‡Between-country comparisons adjusted by Bonferroni's correction: AU≠CA (p<0.0001), AU≠EN (p<0.0001), CA≠EN (p<0.0001)

AOR, Adjusted OR; AU, Australia; CA, Canada; EN, England.

Table 4.

Self-reported exposure to cigarette and vaping product advertisements via websites, social media, e-mails, or texts among adult smokers and vapers in the ITC Four Country Smoking and Vaping Survey, 2016

	Websites or social media								Email or text							
	Cigarettes				Vaping products				Cigarettes				Vaping products			
	%*	95% CI	AOR†	95% CI	%*	95% CI	AOR‡	95% CI	%*	95% CI	AOR§	95% CI	%*	95% CI	AOR¶	95% CI
Country																
USA	10.4	8.7, 12.1		Ref	12.1	10.4, 13.9		Ref	7.6	6.4, 8.9		Ref	7.5	6.1, 9.0		Ref
Australia	2.7	1.4, 4.0	**0.2**	0.1, 0.4	5.0	3.1, 6.9	**0.4**	0.2, 0.6	1.5	0.6, 2.4	**0.2**	0.1, 0.4	3.1	1.9, 4.2	**0.5**	0.3, 0.8
Canada	6.8	5.8, 7.9	**0.5**	0.4, 0.7	15.1	13.7, 16.6	1.2	1.0, 1.5	3.2	2.5, 3.9	**0.4**	0.3, 0.5	3.9	3.2, 4.7	**0.5**	0.4, 0.7
England	5.7	4.7, 6.8	**0.4**	0.3, 0.6	18.4	16.5, 20.4	**1.4**	1.1, 1.8	3.3	2.4, 4.1	**0.4**	0.3, 0.5	9.9	8.4, 11.5	1.2	0.9, 1.5
Age																
18 – 24	16.9	14.4, 19.5		Ref	30.6	27.4, 33.7		Ref	7.0	5.6, 8.4		Ref	8.0	6.0, 10.0		Ref
25 – 39	8.5	7.2, 9.9	**0.4**	0.3, 0.6	18.0	16.0, 20.0	**0.5**	0.4, 0.6	5.0	3.9, 6.0	**0.7**	0.5, 1.0	6.8	5.5, 8.2	0.9	0.6, 1.3
40 – 54	4.1	3.2, 5.0	**0.2**	0.1, 0.2	10.6	9.1, 12.1	**0.3**	0.2, 0.3	3.0	2.3, 3.7	**0.4**	0.3, 0.5	6.6	5.5, 7.8	0.9	0.6, 1.3
>=55	2.0	1.5, 2.6	**0.1**	0.1, 0.1	5.8	4.6, 7.0	**0.1**	0.1, 0.2	2.4	1.8, 3.0	**0.3**	0.2, 0.4	6.1	4.9, 7.3	0.8	0.6, 1.2
Sex																
Male	7.3	6.4, 8.3		Ref	14.9	13.6, 16.3		Ref	4.2	3.6, 4.9		Ref	7.5	6.5, 8.5		Ref
Female	6.0	5.2, 6.8	**0.7**	0.6, 0.9	13.7	12.4, 15.0	**0.8**	0.7, 0.9	3.7	3.1, 4.3	**0.8**	0.6, 1.0	5.8	4.9, 6.7	**0.7**	0.6, 0.9
Education																
Low	6.5	5.4, 7.6		Ref	11.4	10.0, 12.8		Ref	4.3	3.4, 5.2		Ref	5.4	4.5, 6.4		Ref
Moderate	6.6	5.6, 7.6	1.1	0.8, 1.4	16.3	14.7, 17.8	**1.2**	1.0, 1.4	4.0	3.3, 4.7	1.1	0.8, 1.4	7.7	6.5, 8.8	**1.2**	1.0, 1.6
High	7.4	6.1, 8.6	1.2	0.9, 1.6	14.7	12.9, 16.6	1.2	0.9, 1.5	3.7	2.8, 4.5	0.9	0.7, 1.3	6.4	5.2, 7.7	1.3	0.9, 1.8
Income																
Low	7.9	6.4, 9.3		Ref	14.2	12.3, 16.2		Ref	4.2	3.3, 5.2		Ref	7.0	5.5, 8.5		Ref
Moderate	6.0	5.0, 7.1	0.9	0.7, 1.2	13.4	11.7, 15.1	1	0.8, 1.2	4.6	3.7, 5.5	1.3	0.9, 1.8	6.9	5.5, 8.2	0.9	0.7, 1.3
High	7.1	6.0, 8.2	1.1	0.8, 1.4	15.4	13.8, 16.9	1.1	0.8, 1.3	3.9	3.1, 4.6	1.2	0.8, 1.7	6.7	5.7, 7.7	0.9	0.6, 1.3
No information	3.4	1.9, 4.8	**0.5**	**0.3, 0.9**	13.1	9.6, 16.5	0.8	0.5, 1.2	1.6	0.7, 2.6	0.6	0.3, 1.2	5.6	3.1, 8.1	0.7	0.4, 1.3
Respondent type																
Exclusive smokers	6.0	5.3, 6.7		Ref	11.7	10.8, 12.6		Ref	3.9	3.3, 4.4		Ref	4.2	3.6, 4.8		Ref
Concurrent users	16.3	14.8, 17.7	**3.0**	2.4, 3.7	24.3	22.6, 26.1	**2.3**	1.9, 2.7	11.2	10.0, 12.4	**2.9**	2.2, 4.0	16.1	14.5, 17.7	**4.7**	3.8, 5.9

	Websites or social media								Email or text							
	Cigarettes				Vaping products				Cigarettes				Vaping products			
	%*	95% CI	AOR†	95% CI	%*	95% CI	AOR‡	95% CI	%*	95% CI	AOR§	95% CI	%*	95% CI	AOR¶	95% CI
Exclusive vapers	9.3	5.8, 12.9	**1.6**	1.0, 2.4	25.1	20.3, 30.0	**2.4**	1.7, 3.2	4.3	1.5, 7.1	1.1	0.6, 2.0	25.1	19.9, 30.3	**6.4**	4.6, 8.9
Former smokers	4.4	2.8, 6.1	0.8	0.5, 1.3	14.5	11.7, 17.4	1.3	0.9, 1.8	1.6	0.6, 2.6	**0.5**	0.2, 1.1	4.3	2.5, 6.0	0.8	0.5, 1.3
N	12,258		12,140		12,246		12,128		12,248		12,130		12,dddddd249		12,131	

AOR: Adjusted odds ratio; Statistically significant estimates are bolded.

*Weighted estimates; the number of participants indicates the number before case-wise deletion due to missing values.

†Between-country comparisons adjusted by Bonferroni's correction: AU≠CA (p=0.0102), AU=EN (p>0.05), CA=EN (p>0.05)

‡Between-country comparisons adjusted by Bonferroni's correction: AU≠CA (p<0.0001), AU≠EN (p<0.0001), CA=EN (p>0.05)

§Between-country comparisons adjusted by Bonferroni's correction: AU=CA (p>0.05), AU=EN (p>0.05), CA=EN (p>0.05)

¶Between-country comparisons adjusted by Bonferroni's correction: AU=CA (p>0.05), AU≠EN (p=0.0017), CA≠EN (p<0.0001)

Tob Control. Author manuscript; available in PMC 2020 May 01.

Table 5.

Self-reported exposure to and use of price offers for cigarettes and vaping products among adult smokers and vapers in the ITC Four Country Smoking and Vaping Survey, 2016

	Exposure to price offers								Use of price offers							
	Cigarettes				Vaping products*				Cigarettes				Vaping products*			
	%†	95% CI	AOR‡	95% CI	%†	95% CI	AOR§	95% CI	%†	95% CI	AOR¶	95% CI	%†	95% CI	AOR**	95% CI
Country																
USA	34.0	31.4, 36.7		Ref	42.3	36.1, 48.6		Ref	17.8	15.8, 19.8		Ref	21.7	17.1, 26.2		Ref
Australia	8.2	5.9, 10.4	**0.2**	0.1, 0.2	29.1	15.9, 42.2	**0.5**	0.3, 1.1	5.3	3.8, 6.7	**0.3**	0.2, 0.4	7.4	−1.4, 16.2	**0.3**	0.1, 1.0
Canada	7.8	5.9, 10.4	**0.2**	0.1, 0.2	25.9	22.4, 29.4	**0.4**	0.3, 0.6	2.4	1.9, 2.9	**0.1**	0.1, 0.1	7.8	5.7, 9.8	**0.3**	0.2, 0.4
England	3.6	2.7, 4.4	**0.1**	0.0, 0.1	31.5	27.0, 35.9	**0.6**	0.5, 0.9	1.5	1.1, 1.9	**0.1**	0.0, 0.1	10.3	7.4, 13.1	**0.4**	0.3, 0.7
Age																
18–24	14.6	12.4, 16.8		Ref	42.7	34.7, 50.7		Ref	6.9	5.5, 8.4		Ref	10.7	7.1, 14.3		Ref
25–39	11.4	9.8, 12.9	**0.7**	0.5, 0.9	34.1	29.4, 38.9	**0.6**	0.4, 0.9	6.0	4.9, 7.0	0.9	0.6, 1.3	12.4	9.7, 15.2	1	0.6, 1.6
40–54	11.9	10.4, 13.4	**0.6**	0.5, 0.8	28.7	23.8, 33.5	**0.5**	0.3, 0.7	5.3	4.4, 6.3	**0.6**	0.5, 0.9	11.3	7.7, 14.9	0.9	0.5, 1.7
>=55	12.1	10.9, 13.3	**0.6**	0.5, 0.8	26.5	21.6, 31.4	**0.4**	0.3, 0.6	5.7	4.9, 6.5	**0.6**	0.4, 0.8	12.5	8.6, 16.3	0.9	0.5, 1.6
Sex																
Male	12.2	11.1, 13.3		Ref	36.4	32.4, 40.4		Ref	5.7	5.0, 6.4		Ref	13.2	10.6, 15.8		Ref
Female	12.1	11.0, 13.2	1	0.8, 1.1	27	23.4, 30.7	**0.7**	0.5, 0.9	6.0	5.3, 6.8	0.9	0.8, 1.2	10.3	8.0, 12.6	0.8	0.5, 1.1
Education																
Low	15.0	13.4, 16.7		Ref	30.2	25.7, 34.7		Ref	8.3	7.0, 9.5		Ref	13.0	9.8, 16.1		Ref
Moderate	10.8	9.8, 11.8	**1.3**	1.1, 1.6	32.4	28.0, 36.7	1.1	0.9, 1.5	5.0	4.4, 5.7	1.1	0.9, 1.4	10.9	8.1, 13.7	1	0.7, 1.5
High	11.4	9.6, 13.2	1.3	0.9, 1.8	34.4		1.2	0.8, 1.7	4.4	3.6, 5.2	0.9	0.7, 1.2	12.8	9.8, 15.7	0.9	0.6, 1.5
Income																
Low	17.7	15.7, 19.6		Ref	27.3	22.2, 32.3		Ref	9.6	8.1, 11.1		Ref	11.9	8.2, 15.6		Ref
Moderate	13.0	11.5, 14.5	0.8	0.7, 1.1	33.6	28.2, 39.0	**1.5**	1.0, 2.0	6.3	5.3, 7.3	0.8	0.6, 1.1	12.0	8.4, 15.6	1.1	0.7, 1.8
High	9.9	8.8, 11.0	**0.8**	0.6, 0.9	34.2	30.0, 38.5	**1.4**	1.0, 2.0	4.1	3.5, 4.7	**0.6**	0.5, 0.8	12.5	9.9, 15.1	1.1	0.7, 1.8
No information	3.8	2.4, 5.3	**0.5**	0.3, 0.7	27.4	16.6, 38.3	1.1	0.6, 2.2	1.9	1.0, 2.8	**0.5**	0.3, 0.9	6.4	1.4, 11.4	0.7	0.3, 1.9
Respondent type																
Exclusive smokers	14.0	13.0, 14.9		Ref		N/A			7.9	7.2, 8.7		Ref		N/A		
Concurrent users	16.7	15.3, 18.2	**1.3**	1.0, 1.6	28.7	26.8, 30.6		Ref	9.9	8.8, 11.0	**1.2**	1.0, 1.6	10.7	9.5, 11.9		Ref

	Exposure to price offers								Use of price offers							
	Cigarettes				Vaping products*				Cigarettes				Vaping products*			
	%†	95% CI	AOR‡	95% CI	%†	95% CI	AOR§	95% CI	%†	95% CI	AOR¶	95% CI	%†	95% CI	AOR**	95% CI
Exclusive vapers	9.3	6.2, 12.3	**0.7**	0.5, 1.0	35.8	30.4, 41.2	**1.4**	1.0, 1.9	1.6	−.1, 3.3	**0.2**	0.1, 0.6	13.1	9.6, 16.6	**1.9**	1.2, 2.9
Former smokers	6.6	4.6, 8.5	**0.5**	0.3, 0.7	N/A				0.2	−.1, 3.3	0	0.0, 0.1	N/A			
N	12,264		12,149		3,997		3,962		12,264		12,149		3,997		3,962	

Statistically significant estimates are bolded.

*Question was asked to vapers only

†Weighted estimates; the number of participants indicates the number before case-wise deletion due to missing values.

‡Between-country comparisons adjusted by Bonferroni's correction: AU=CA (p>0.05), AU≠EN (p<0.0001), CA≠EN (p<0.0001)

§Between-country comparisons adjusted by Bonferroni's correction: AU=CA (p>0.05), AU=EN (p>0.05), CA=EN (p>0.05)

¶Between-country comparisons adjusted by Bonferroni's correction: AU≠CA (p<0.0001), AU≠EN (p<0.0001), CA≠EN (p=0.0138)

**Between-country comparisons adjusted by Bonferroni's correction: AU=CA (p>0.05), AU=EN(p>0.05), CA=EN (p>0.05)

AOR, Adjusted OR; AU, Australia; CA, Canada; EN, England