Support for a tobacco endgame among smokers in Canada: Findings from the 2016 Wave of the Canadian Arm of the ITC Four Country Tobacco and E-Cigarette Survey

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Competing interests: None declared.

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INTRODUCTION

Tobacco use is the leading cause of premature mortality in the world, resulting in more than 6 million preventable deaths each year.[1,2] Although smoking rates among Canadians aged 15 years and older fell from 14.6% in 2013, to an all-time low of 13.0% in 2015,[3] smoking remains the leading cause of preventable disease and premature death.[3-5] In 2012, the total economic burden of smoking in Canada was estimated at $16.2 billion, with $6.5 billion in direct health care costs.[6]

Canada has a long history of leadership in tobacco control, and became a Party to the WHO Framework Convention on Tobacco Control (FCTC) in 2004. Canada was the first country to introduce pictorial health warnings on cigarette packages in 2001, ban all flavourings in cigarettes (except for menthol) in 2010, and ban menthol cigarettes in October 2017.[7,8] However, with current policies, Canada's smoking prevalence is only estimated to decrease from 13% to 9% by 2036.[9] Over the next two decades, smoking rates in Ontario are expected to decrease by less than half, while the number of tobacco-attributable deaths will increase – even if all WHO MPOWER measures are fully implemented.[10] In order to reduce tobacco's devastating toll on the health, economy, and social welfare of Canada, there has been a call for the government to consider "tobacco endgame" strategies.

The "tobacco endgame" concept emphasizes the need for innovative policy solutions to end the tobacco epidemic within a specific time.[11-13] Several countries have recently set aggressive targets to drive smoking prevalence down towards zero.[14-17] In September 2016, the Canadian Tobacco Endgame Summit convened leading public health and policy experts to discuss an endgame strategy for Canada.[18,19] The Canadian government has subsequently committed to a target of less than 5% tobacco use by 2035, and is currently developing a new Federal Tobacco Control Strategy to achieve this goal.[20] Public support is critical for driving government actions to ensure that endgame proposals are adopted as laws,[21,22] but little is known about public opinions towards endgame ideas in Canada.

This article reports baseline estimates of support among a national sample of Canadian adult smokers for: (1) tobacco marketing and sales bans, (2) restrictions on the contents of tobacco products, (3) restrictions on access to tobacco products/alternative nicotine products, and (4) restrictions on e-cigarette youth access, content, use in smoke-free places, and promotion.

METHODS

Participants and study design

The study used Canadian data from Wave 1 of the ITC Four Country Tobacco and E-Cigarette (4CE1) Survey (collected from July to November 2016). This survey is an expansion of the ITC Four Country Survey, a cohort survey of nationally representative samples of adult smokers (aged 18 years and older) in Australia, Canada, the United Kingdom, and the United States followed up approximately yearly from 2002-2014.

The Canadian 4CE1 cohort sampled included respondents aged 18 to 24 and 25+ from 14 regions using a stratified sampling design, and a supplementary sample of current at-least-weekly e-cigarette users aged 18+. Additional details about the ITC 4CE1 study design and

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sampling frames have been described elsewhere,[23-25] and methodological details are available on the ITC website (http://www.itcproject.org/methods). Research ethics approval for the Canadian arm of the 4CE1 Survey was obtained from the University of Waterloo.

Respondents reported their province/region of residence, gender, age, ethnicity, annual household income, and education level (see Table 1 for grouping categories). Due to small sample sizes in Newfoundland and Labrador, Prince Edward Island, Nova Scotia, and New Brunswick, these provinces were combined into the "Atlantic" region while Manitoba and Saskatchewan were combined into the "Prairie" region.

Respondents who smoked at least 100 cigarettes and currently smoked at least occasionally were classified as current smokers. Respondents who ever used an e-cigarette and currently used these products at least occasionally were classified as current e-cigarette users. Grouping categories for these variables are presented in Table 1.

Outcomes

Respondents were asked how strongly they supported or opposed each of 14 endgame measures (Table 2).

Statistical analysis

The demographic characteristics of the sample were estimated using unweighted descriptive statistics. Weighted estimates of support for endgame measures were then computed for six provinces/regions of Canada by cross-tabulating province/region with each endgame measure.

Standard errors were estimated using Taylor series linearization to account for the stratified sampling design. Design-based confidence intervals were estimated using the logit method while differences in support by demographics, province/region, smoking status, e-cigarette use status, daily consumption (cigarettes per day (CPD)), and quit intentions were tested using the Wald χ^2 omnibus test. All analyses were conducted using SAS Version 9.4.

RESULTS

Survey response

A total of 3829 respondents completed the ITC 4CE1 Canada Survey. The analyses presented here are based on 3216 current smokers. Quitters and exclusive e-cigarette users were excluded (Figure 1).

Demographic and smoking characteristics of the sample

Table 1 presents the demographic and smoking characteristics of the 3216 current smokers.

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Policy support

Among policies to ban tobacco marketing and sales, over half of smokers supported a ban on promotional marketing of cigarettes/tobacco (58.9%), and a total ban on cigarettes/tobacco within 10 years if the government provided cessation assistance (43.5%). In comparison, 27.7% of smokers supported plain packaging (Table 3).

Among policies to restrict the contents of tobacco products, support for reductions in cigarette nicotine content was highest at 69.4%. Although a considerable proportion of smokers supported a ban on all additives/flavourings in cigarettes/tobacco (42.9%), only 28.7% supported a ban on menthol cigarettes/tobacco (Table 4).

For restrictions on access to tobacco products/alternative nicotine products, the majority of smokers supported policies to raise the legal age for purchasing cigarettes to 21 years or older (68.8%), and require retail locations that sell cigarettes/tobacco to also sell alternative nicotine products (63.5%). Support for restrictions on the number of places where cigarettes/tobacco can be purchased was lowest (43.9%) (Table 5).

Of the various e-cigarette policies, there was very high support among smokers for a law that would require the same minimum age for the purchase of e-cigarettes as for cigarettes (86.5%). Nearly two-thirds of smokers supported restricting e-cigarette/e-liquid nicotine content (65.7%), and use in smoke-free places (65.7%). More than half of smokers supported a ban on e-cigarette/e-liquid promotion (57.3%). Overall support for a ban on fruit/candy flavoured e-cigarettes was lowest (43.1%) (Table 6).

Factors associated with support for endgame measures

Weighted multiple logistic regression was used to model the predictors for each of the 14 endgame policies controlling for demographic covariates, perceptions of societal attitudes towards smoking, and belief that smokers are increasingly marginalized.

Tables 3 to 6 show that smokers with plans to quit in the next 6 months were more likely to support all 14 endgame policies.

Smoking status was a significant predictor of support for 10 endgame policies. Compared with non-daily smokers, daily smokers were less likely to support a ban on cigarette/tobacco marketing, total tobacco ban in 10 years if the government provides cessation support, plain packaging, reducing nicotine in cigarettes/tobacco, banning additives/flavourings, banning menthol, and restrictions on where cigarettes/tobacco can be purchased. Daily smokers were also less likely than non-daily smokers to support e-cigarette/e-liquid policies: restricting nicotine content, banning use in smoke-free places, and banning fruit/candy flavours.

Compared to smokers, dual users were more likely support plain packaging, banning menthol, restrictions on where cigarettes/tobacco can be purchased, and requiring retail locations to sell alternative nicotine products. Not surprisingly, dual users were less likely than smokers to support e-cigarette/e-liquid policies: restricting nicotine content, banning use in smoke-free places, banning promotions, and banning fruit/candy flavours.

Support for endgame policies was generally higher among smokers in Quebec; smokers in most provinces/regions were less likely to support a ban on cigarette/tobacco marketing, plain

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packaging, and reducing nicotine in cigarettes/tobacco than smokers in Quebec. Smokers in Alberta were also less likely to support a total tobacco ban in 10 years if the government provides cessation support, and those in the Prairie region were less likely to support requiring retail locations to sell alternative nicotine products, in comparison with smokers in Quebec. Compared to smokers in Quebec, those in Ontario, Alberta, and British Columbia were less likely to support e-cigarette/e-liquid policies that would require the same minimum age for purchase of e-cigarettes as for cigarettes; those in Ontario and the Prairie region were less likely to support restricting nicotine in e-cigarettes/e-liquid; and those in all regions/provinces except British Columbia were less likely to support a ban on e-cigarette/e-liquid promotions.

Compared with smokers from low income households, those who did not provide information on household income were less likely to support: banning additives/flavourings in cigarettes/tobacco, requiring retail locations to sell alternative nicotine products, and banning fruit/candy flavoured e-cigarettes. Smokers from high income households were more likely to support banning e-cigarette/e-liquid promotions.

Compared to smokers aged 18 to 24, those aged 55+ were less likely to support plain packaging, and requiring retail locations to sell alternative nicotine products. Compared to smokers aged 18 to 24, older smokers in all other age groups were more likely to support banning additive/flavourings in cigarettes/tobacco, and raising the legal age of purchase for cigarettes to 21 years or older . As expected, smokers aged 40 to 54 were also more likely to support requiring the same minimum age for e-cigarette purchase as for cigarettes, and a banning fruit/candy flavoured e-cigarettes than smokers aged 18 to 24.

Smokers with higher CPD (21-30) were less supportive of restrictions on where cigarettes/tobacco can be purchased, banning the use of e-cigarettes in smoke-free places, and banning e-cigarette/e-liquid promotions, compared to those with lower CPD (<10). Highly educated smokers were more likely to support a ban on cigarette/tobacco marketing, restrictions on where cigarettes/tobacco can be purchased, banning e-cigarette/e-liquid promotions, and banning fruit/candy flavoured e-cigarettes than smokers with low education.

Gender and ethnicity were not significantly associated with support for the majority of endgame policies. Compared to females, males were less likely to support a policy requiring retail locations to sell alternative nicotine products, and more likely to support banning menthol. Support for a ban on e-cigarette/e-liquid promotions was lower among non-White smokers than White smokers.

INTERPRETATION

We found strong overall support (>50%) for 8 of 14 endgame measures among smokers. The majority of smokers supported measures to reduce nicotine in cigarettes (69.4%), raise legal age for cigarette purchase (68.8%), increase access to alternative nicotine products (63.5%), and ban tobacco marketing (58.9%). Smokers also strongly supported e-cigarette/e-liquid policies to require the same minimum age for purchase as cigarettes (86.5%), restrict nicotine content (65.7%), ban use in smoke-free places (65.7%), and ban promotions (57.3%).

There was moderate support for several other market- and product-based endgame proposals. Overall, 43.9% of smokers supported restrictions on places cigarettes can be purchased, and 43.5% supported a total ban on the sale of cigarettes within 10 years, which is comparable with smokers' support in other countries.[26-28] Smokers had similar levels of support for banning all additives/flavourings in cigarettes/tobacco (42.9%) as they did for banning fruit/candy flavours in e-cigarettes (43.1%).

Support for banning menthol was considerably lower than support for reducing nicotine in cigarettes (28.7% vs. 69.4%). This pattern of findings is consistent with previous studies[29,30] and may be due to smokers' misperceptions that menthol cigarettes are less harmful than regular cigarettes.[31,32] Smokers' support for plain packaging (27.7%) is comparable to that observed in Australia before plain packaging was implemented in that country (28.2%). There, support rose to ~50% after implementation.[33] At the time of this study, a national menthol ban in Canada was not yet in force, and plain packaging was under formal consideration. Previous research showing post-implementation increases in policy support[34-36] suggests that smokers' support for banning menthol and plain packaging should increase after these policies are implemented in Canada.

There were significant regional differences in support for 9 endgame measures. Support for all three tobacco marketing bans was consistently the highest in Quebec and lowest in Alberta. Similarly, support for reducing nicotine in cigarettes/tobacco, and banning promotion of e-cigarettes/e-liquid was highest in Quebec and lowest in Alberta. The strong support in Quebec is likely due to provincial laws that mandate tobacco control measures that are more stringent than federal legislation. For example, flip top and slim cigarette package formats, and e-cigarette advertising/promotion are banned in Quebec.[37] It is unclear why support was lower in Alberta compared to other regions. It is possible that smokers in Alberta have lower interest in quitting and higher dependence than smokers in other provinces/regions, which are associated with lower support for policies to ban the sale of tobacco products,[26,27] and reduce nicotine in cigarettes to help smokers quit.[38]

The most consistent predictor of support was intentions to quit –smokers planning to quit within 6 months were significantly more likely to support all 14 endgame policies. Together with the finding that 43.5% of smokers would support a total ban on the sale of cigarettes within 10 years if the government provides cessation assistance, this study clearly demonstrates that many Canadian smokers have a strong desire to quit and want services to help them to quit. These results are consistent with other studies showing that nearly all Canadian smokers regret having started smoking[39] and that the majority are interested in quitting and plan to quit.[40,41] We also found that daily smokers were less likely to support endgame policies than non-daily smokers, whereas dual users were more likely to support endgame policies for cigarettes/tobacco than smokers. This suggests that there is strong need for cessation services, particularly for daily smokers and dual users.

This study has several limitations. First, the ITC 4CE1 Survey results are not representative of the Aboriginal population of Canada. Approximately 4.2% of the Canadian population (~1.4 million people) identifies as a First Nations person, Métis, or Inuit.[42] It is estimated that 40% of First Nations and Métis adults smoke, more than twice the rate in the general Canadian

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population.[43,44] Future studies are needed to assess support for endgame measures among Aboriginal groups. Second, our sample only included smokers, even though non-smokers make up more than 85% of the Canadian population.[3] Based on previous studies,[45-47] it is likely that non-smokers' support for endgame policies is greater than the high levels reported by smokers in the current study. Finally, smokers may have reported inflated levels of support as smoking is becoming less socially acceptable in Canada; however, this is unlikely as the present analyses controlled for smokers' perceived denormalization of smoking.

Conclusion

This study demonstrates that the majority of Canadian smokers are likely to support the introduction of tobacco endgame measures. Our evidence indicates that smokers support endgame proposals that go well beyond current tobacco control policies. These findings suggest that the Canadian government has substantial support from smokers to proceed with the introduction of endgame measures to reduce tobacco prevalence to less than 5% by 2035.

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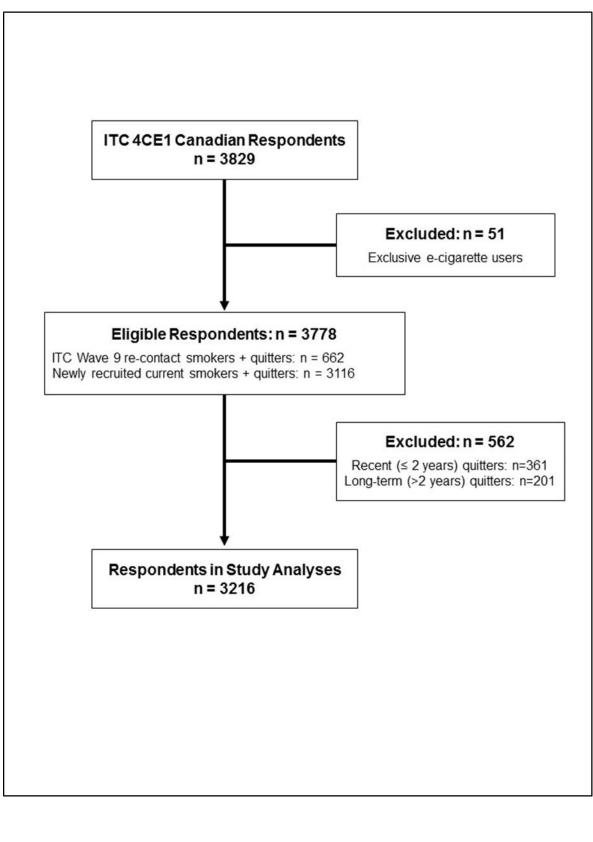
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Figure 1: Selection of respondents to the ITC 4CE1 Survey for inclusion in the study

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Table 1: Demographic and smoking characteristics of sample

Characteristic	Categories	Unweighted N (%)
Province/Region	Atlantic[†]	227 (7.1)
	Quebec	743 (23.1)
	Ontario	1268 (39.4)
	Prairie[††]	225 (7.0)
	Alberta	355 (11.0)
	British Columbia	398 (12.4)
Recruitment source	ITC Project	322 (10.0)
	Canada Leger web panel	2894 (90.0)
Gender	Female	1698 (52.8)
	Male	1518 (47.2)
Age group (years)	18-24	760 (23.6)
	25-39	829 (25.8)
	40-54	895 (27.8)
	55+	732 (22.8)
Ethnicity[‡]	White	2573 (81.4)
	Non-white	588 (18.6)
Household income	Low (< $30,000)	720 (22.4)
	Moderate ($30,000-$44,999)	510 (15.9)
	High ($45,000+)	1751 (54.4)
	No answer	235 (7.3)
Education level[‡‡]	Low (high school or less)	933 (29.3)
	Moderate (technical/trades/college/some university)	1404 (44.0)
	High (completed university/post-graduate)	851 (26.7)
Smoking status	Non-daily smoker	995 (30.9)
	Daily smoker	2221 (69.1)
E-cigarette use status	Smoker (use cigarettes only)	1391 (43.3)
	Dual user (use cigarettes and e-cigarettes)	1825 (56.7)

[†] "Atlantic": Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick.
[††] "Prairie": Manitoba and Saskatchewan
[‡] Missing responses: n=55
[‡‡] Missing responses: n=28

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Table 2: Endgame measures and response options used in the analysis

Endgame measure	Response options[†]
1. "Would you support or oppose a law that bans the use of promotional marketing for cigarettes/tobacco, such as coupons and price discounts?"	Strongly support/support Strongly oppose/oppose
2. "Would you support or oppose a law that totally bans cigarettes and other smoked tobacco within 10 years, if the government provides assistance such as clinics to help smokers quit?"	Strongly support/support Strongly oppose/oppose
3. "Tobacco companies should be required to sell cigarettes in plain packages; that is, in packs without the usual brand colours and symbols, but keeping warning labels."	Strongly agree/agree Strongly disagree/disagree
4. "If you could get nicotine in products other than tobacco, would you support or oppose a law that reduced the amount of nicotine in cigarettes and tobacco, to make them less addictive?"	Strongly support/support Strongly oppose/oppose
5. "Would you support or oppose a law that bans all additives, including flavourings, in cigarettes/tobacco?"	Strongly support/support Strongly oppose/oppose
6. "Would you support or oppose a law that bans the use of menthol in cigarettes/tobacco?"	Strongly support/support Strongly oppose/oppose
7. "Would you support or oppose a law that raises the legal age of purchasing cigarettes/tobacco to 21 years and older?"	Strongly support/support Strongly oppose/oppose
8. "Would you support or oppose a law that restricts the number of places where cigarettes/tobacco could be purchased?"	Strongly support/support Strongly oppose/oppose
9. "Would you support or oppose a law that requires shops/stores that sell cigarettes/ tobacco to also sell alternative nicotine products like e-cigarettes and nicotine medications?"	Strongly support/support Strongly oppose/oppose
10. "Would you support or oppose a law that requires the same minimum age for buying e-cigarettes as for cigarettes?"	Strongly support/support Strongly oppose/oppose
11. "Would you support or oppose a law that limits the amount of nicotine allowed in e-cigarettes and/or e-liquid?"	Strongly support/support Strongly oppose/oppose
12. "Would you support or oppose a law that bans the use of e-cigarettes in places where smoking is already banned?"	Strongly support/support Strongly oppose/oppose
13. "Would you support or oppose a law that bans e-cigarette and e-liquid promotions, such as free samples, coupons, and price discounts?"	Strongly support/support Strongly oppose/oppose
14. "Would you support or oppose a law that bans fruit and candy flavours in e-cigarettes?"	Strongly support/support Strongly oppose/oppose

†Response options for the question on support for plain packaging were: strongly agree, agree, neither agree or disagree, disagree, strongly disagree, refused, and don't know. For all other questions, response options were: strongly support, support, oppose, strongly oppose, refused, and don't know. For analysis, response options were dichotomized into "strongly agree/agree" versus "strongly disagree/disagree" or "strongly support/support" versus "strongly oppose/oppose". All other response options ("refused" and "don't know") were excluded.

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Table 3. Factors associated with support for tobacco marketing and sales bans

	Ban on promotional marketing of cigarettes/tobacco[$]		Total ban on cigarettes/tobacco within 10 years if government provides cessation assistance[$]		Require sale of cigarettes in plain packages[$]	
	%Support	OR (95% CI)	%Support	OR (95% CI)	%Support	OR (95% CI)
Overall	58.9		43.5		27.7	
Gender		p=.093		p=.240		p=.631
Female	55.1	1.00	41.2	1.00	27.1	1.00
Male	61.5	1.21 (0.97-1.51)	45.0	1.14 (0.92-1.41)	28.1	1.06 (0.83-1.36)
Age Group (years)		p=.655		p=.757		**p=.009**
18-24	62.2	1.00	45.4	1.00	36.2	1.00
25-39	62.2	0.90 (0.62-1.31)	48.3	1.19 (0.82-1.72)	30.8	0.83 (0.56-1.22)
40-54	57.4	0.80 (0.55-1.14)	41.6	1.02 (0.71-1.46)	28.3	0.79 (0.55-1.56)
55+	56.1	0.84 (0.58-1.22)	40.2	1.06 (0.73-1.53)	20.4	0.54 (0.36-0.80)
Ethnicity		p=.251		p=.130		p=.876
White	59.1	1.00	42.6	1.00	27.4	1.00
Non-white	58.0	0.82 (0.58-1.15)	48.7	1.28 (0.93-1.78)	29.2	0.97 (0.68-1.39)
Household income		**p=.024**		p=.329		p=.627
Low	52.4	1.00	44.8	1.00	28.9	1.00
Moderate	57.5	1.10 (0.75-1.60)	45.0	0.89 (0.62-1.29)	28.5	1.01 (0.66-1.53)
High	63.2	1.24 (0.92-1.68)	43.6	0.87 (0.65-1.17)	27.7	0.90 (0.64-1.27)
No answer	41.6	0.65 (0.41-1.04)	34.3	0.64 (0.40-1.03)	21.2	0.72 (0.42-1.24)
Education level		**p=.006**		p=.874		p=.673
Low	51.4	1.00	41.6	1.00	26.9	1.00
Moderate	57.0	1.05 (0.80-1.38)	43.4	1.03 (0.79-1.34)	26.3	0.92 (0.68-1.25)
High	70.4	1.67 (1.18-2.37)	45.8	1.09 (0.78-1.51)	30.8	1.06 (0.74-1.52)
Province/region		**p<.001**		**p=.030**		**p=.005**
Quebec	68.9	1.00	48.5	1.00	35.3	1.00
Atlantic†	61.1	0.77 (0.47-1.24)	44.5	0.84 (0.54-1.33)	27.6	0.76 (0.46-1.26)
Ontario	53.9	0.52 (0.39-0.70)	44.6	0.79 (0.60-1.05)	27.1	0.71 (0.52-0.95)
Prairie‡	54.8	0.60 (0.39-0.93)	40.0	0.76 (0.48-1.20)	18.4	0.45 (0.26-0.79)
Alberta	50.3	0.42 (0.28-0.63)	32.8	0.48 (0.32-0.73)	19.4	0.46 (0.29-0.71)
British Columbia	63.1	0.77 (0.50-1.19)	43.2	0.77 (0.52-1.16)	28.9	0.77 (0.50-1.18)

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Smoking status		**p<.001**			**p<.001**	**p<.001**
Non-daily smoker	72.0	1.00	52.0	1.00	37.3	1.00
Daily smoker	54.1	0.53 (0.38-0.73)	40.4	0.51 (0.38-0.70)	24.2	0.51 (0.37-0.71)
E-cigarette use status		p=.763		p=.156		**p<.001**
Smoker	58.6	1.00	43.1	1.00	26.3	1.00
Dual user	60.9	0.97 (0.81-1.17)	47.3	1.14 (0.95-1.36)	36.7	1.40 (1.15-1.70)
CPD		p=.055		p=.377		p=.211
<10	65.9	1.00	45.9	1.00	31.0	1.00
11-20	51.2	0.71 (0.53-0.95)	39.8	1.06 (0.79-1.42)	23.9	1.01 (0.73-1.41)
21-30	49.4	0.67 (0.46-0.98)	43.3	1.36 (0.93-2.00)	21.8	0.92 (0.59-1.45)
>30	56.1	1.11 (0.51-2.40)	39.8	1.45 (0.65-3.23)	38.7	2.38 (1.01-5.58)
Plans to quit in next 6 months		**p<.001**		**p<.001**		**p<.001**
No	50.6	1.00	30.5	1.00	22.6	1.00
Yes	62.1	1.94 (1.51-2.50)	48.5	2.51 (1.94-3.24)	29.6	1.61 (1.21-2.14)

[$] Logistic regression models control for smokers' perceptions of societal attitudes towards smoking, and beliefs that smokers are increasingly marginalized.

[†]"Atlantic": Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick

[‡]"Prairie": Manitoba and Saskatchewan

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Table 4. Factors associated with support for restrictions on contents of tobacco products

	Reduce nicotine in cigarettes/tobacco to make them less addictive[$]		Ban all additives and flavourings in cigarettes/tobacco[$]		Ban menthol in cigarettes/tobacco[$]	
	%Support	OR (95% CI)	%Support	OR (95% CI)	%Support	OR (95% CI)
Overall	69.4		42.9		28.7	
Gender		p=.396		p=.096		**p<.001**
Female	70.3	1.00	39.6	1.00	22.7	1.00
Male	68.9	0.90 (0.72-1.14)	45.1	1.20 (0.97-1.49)	32.7	1.63 (1.29-2.07)
Age Group (years)		p=.784		**p<.001**		p=.549
18-24	73.4	1.00	34.7	1.00	29.0	1.00
25-39	69.4	0.83 (0.55-1.25)	41.7	1.54 (1.05-2.27)	28.9	1.07 (0.70-1.62)
40-54	68.7	0.87 (0.59-1.28)	42.5	1.83 (1.25-2.66)	29.1	1.25 (0.83-1.88)
55+	68.6	0.93 (0.63-1.39)	47.9	2.45 (1.66-3.60)	28.0	1.31 (0.86-1.99)
Ethnicity		p=.944		p=.805		p=.458
White	69.6	1.00	42.8	1.00	28.1	1.00
Non-white	68.5	0.99 (0.68-1.43)	43.1	1.04 (0.75-1.45)	32.1	1.15 (0.80-1.64)
Household income		p=.505		**p=.032**		p=.050
Low	66.5	1.00	44.9	1.00	29.5	1.00
Moderate	71.3	1.19 (0.81-1.75)	47.2	0.91 (0.63-1.31)	33.6	1.09 (0.73-1.63)
High	70.5	1.18 (0.86-1.60)	42.3	0.76 (0.56-1.01)	28.5	0.86 (0.62-1.19)
No answer	63.8	0.89 (0.55-1.44)	30.8	0.52 (0.32-0.83)	16.2	0.49 (0.28-0.87)
Education level		p=.822		p=.074		p=.641
Low	68.5	1.00	44.1	1.00	27.5	1.00
Moderate	69.0	0.92 (0.69-1.22)	40.2	0.75 (0.57-0.97)	29.6	1.03 (0.75-1.39)
High	71.2	0.96 (0.68-1.37)	45.9	0.91 (0.66-1.26)	28.6	0.89 (0.62-1.27)
Province/region		**p=.007**		p=.249		p=.221
Quebec	77.1	1.00	44.0	1.00	33.7	1.00
Atlantic†	70.8	0.75 (0.46-1.22)	41.0	0.94 (0.60-1.47)	26.9	0.78 (0.47-1.27)
Ontario	67.9	0.63 (0.46-0.86)	43.8	0.96 (0.73-1.27)	28.5	0.80 (0.59-1.09)
Prairie‡	63.8	0.54 (0.34-0.85)	46.5	1.24 (0.80-1.91)	22.6	0.63 (0.37-1.07)
Alberta	63.0	0.48 (0.31-0.74)	34.4	0.65 (0.43-0.99)	22.8	0.59 (0.37-0.95)
British Columbia	67.0	0.59 (0.38-0.92)	46.4	1.06 (0.71-1.58)	31.4	0.91 (0.59-1.39)

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Smoking status		**p=.041**			**p=.020**			**p=.003**
Non-daily smoker	74.5	1.00	48.4	1.00	35.5	1.00
Daily smoker	67.6	0.70 (0.50-0.99)	40.9	0.69 (0.51-0.95)	26.3	0.61 (0.44-0.84)
E-cigarette use status		p=.484		p=.859		**p=.020**
Smoker	69.0	1.00	42.9	1.00	27.9	1.00
Dual user	72.4	1.07 (0.88-1.30)	42.4	1.02 (0.85-1.22)	34.0	1.26 (1.04-1.54)
CPD		p=.228		p=.095		p=.284
<10	72.3	1.00	46.2	1.00	32.1	1.00
11-20	68.4	0.91 (0.67-1.24)	38.4	0.69 (0.52-0.93)	24.5	0.77 (0.56-1.07)
21-30	60.7	0.66 (0.44-0.99)	41.0	0.74 (0.50-1.11)	24.6	0.72 (0.47-1.12)
>30	62.6	0.81 (0.37-1.80)	39.0	0.70 (0.34-1.45)	32.8	1.14 (0.48-2.71)
Plans to quit in next 6 months		**p<.001**		**p<.001**		**p<.001**
No	60.2	1.00	34.6	1.00	20.1	1.00
Yes	73.0	1.91 (1.47-2.47)	46.0	1.90 (1.47-2.44)	32.0	2.14 (1.59-2.88)

[§] Logistic regression models control for smokers' perceptions of societal attitudes towards smoking, and beliefs that smokers are increasingly marginalized.

[†]"Atlantic": Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick

[‡]"Prairie": Manitoba and Saskatchewan

Table 5. Factors associated with support for restrictions on access to tobacco products/alternative nicotine products

	Raise legal age for cigarette purchase to 21+ years$		Restrict places where cigarettes/tobacco can be purchased$		Require retail locations to sell alternative nicotine products$	
	%Support	OR (95% CI)	%Support	OR (95% CI)	%Support	OR (95% CI)
Overall	68.8		43.9		63.5	
Gender		p=.141		p=.819		**p=.024**
Female	70.2	1.00	43.1	1.00	66.4	1.00
Male	67.9	0.84 (0.67-1.06)	44.5	1.03 (0.82-1.28)	61.5	0.77 (0.62-0.97)
Age Group (years)		**p=.005**		p=.681		**p=.008**
18-24	60.0	1.00	46.6	1.00	71.2	1.00
25-39	71.3	1.68 (1.14-2.48)	48.5	1.14 (0.79-1.66)	67.2	0.83 (0.56-1.23)
40-54	72.9	1.94 (1.33-2.84)	45.3	1.22 (0.84-1.76)	62.8	0.67 (0.46-0.98)
55+	65.9	1.55 (1.06-2.28)	37.0	1.07 (0.73-1.56)	57.4	0.54 (0.37-0.79)
Ethnicity		p=.322		p=.754		p=.106
White	68.5	1.00	42.9	1.00	62.7	1.00
Non-white	70.8	1.21 (0.83-1.76)	49.7	1.06 (0.75-1.49)	68.0	1.35 (0.94-1.94)
Household income		p=.786		p=.244		**p<.001**
Low	64.5	1.00	38.7	1.00	61.8	1.00
Moderate	70.7	1.16 (0.79-1.70)	43.5	1.05 (0.72-1.53)	70.3	1.61 (1.08-2.40)
High	70.0	1.11 (0.82-1.50)	47.0	1.08 (0.81-1.45)	64.0	1.25 (0.93-1.69)
No answer	66.4	0.95 (0.59-1.53)	32.1	0.67 (0.41-1.10)	47.1	0.56 (0.35-0.90)
Education level		p=.776		**p=.012**		p=.375
Low	67.2	1.00	36.5	1.00	66.1	1.00
Moderate	68.3	0.93 (0.71-1.23)	42.1	1.05 (0.80-1.38)	61.6	0.83 (0.63-1.08)
High	71.5	1.03 (0.73-1.46)	55.3	1.57 (1.13-2.18)	63.7	0.89 (0.64-1.25)
Province/region		p=.479		**p=.013**		**p=.010**
Quebec	67.0	1.00	42.4	1.00	67.0	1.00
Atlantic†	76.0	1.49 (0.91-2.44)	51.1	1.60 (1.02-2.51)	69.5	1.18 (0.74-1.88)
Ontario	70.2	1.09 (0.81-1.48)	41.4	0.92 (0.69-1.24)	65.3	0.99 (0.74-1.33)
Prairie‡	63.0	0.88 (0.55-1.41)	50.5	1.57 (1.01-2.45)	50.8	0.51 (0.32-0.80)
Alberta	66.5	0.88 (0.58-1.33)	39.3	0.79 (0.52-1.20)	60.2	0.77 (0.51-1.17)
British Columbia	70.5	1.05 (0.68-1.63)	50.4	1.32 (0.86-2.01)	58.1	0.67 (0.44-1.02)

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Smoking status			p=.073			**p<.001**			p=.770
Non-daily smoker	71.8	1.00		63.3	1.00		61.5	1.00
Daily smoker	67.7	0.74 (0.53-1.03)		36.9	0.41 (0.30-0.56)		64.2	1.05 (0.76-1.45)
E-cigarette use status			p=.136			**p=.016**			**p<.001**
Smoker	68.5	1.00		43.1	1.00		61.7	1.00
Dual user	70.9	1.16 (0.96-1.40)		49.4	1.26 (1.04-1.51)		74.5	1.67 (1.38-2.02)
CPD			p=.563			**p<.001**			p=.177
<10	69.9	1.00		53.7	1.00		62.6	1.00
11-20	69.5	1.05 (0.77-1.42)		36.6	0.75 (0.56-1.01)		63.7	1.16 (0.86-1.56)
21-30	62.7	0.80 (0.54-1.19)		22.7	0.40 (0.26-0.61)		64.6	1.23 (0.83-1.82)
>30	65.8	1.02 (0.46-2.27)		31.6	0.72 (0.30-1.76)		77.4	2.51 (1.06-5.98)
Plans to quit in next 6 months			**p<.001**			**p<.001**			**p=.020**
No	59.3	1.00		36.9	1.00		56.9	1.00
Yes	72.5	1.86 (1.44-2.41)		46.7	1.95 (1.50-2.55)		66.0	1.35 (1.05-1.73)

[§] Logistic regression models control for smokers' perceptions of societal attitudes towards smoking, and beliefs that smokers are increasingly marginalized.

[†]"Atlantic": Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick

[‡]"Prairie": Manitoba and Saskatchewan

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Table 6. Factors associated with support for e-cigarette policies

	Require same minimum age for purchase as cigarettes[S]		Restrict nicotine in e-cigarettes/e-liquid[S]		Ban use in smoke-free places[S]		Ban e-cigarette/ e-liquid promotions[S]		Ban fruit and candy flavoured e-cigarettes[S]	
	%Support	OR (95% CI)	%Support	OR (95% CI)	%Support	OR (95% CI)	%Support	OR (95% CI)	%Support	OR (95% CI)
Overall	86.5		65.7		65.7		57.3		43.1	
Gender		p=.067		p=.267		p=.191		p=.865		p=.394
Female	87.7	1.00	66.1	1.00	67.0	1.00	56.6	1.00	40.0	1.00
Male	85.6	0.74 (0.53-1.02)	65.5	0.88 (0.70-1.10)	64.8	0.86 (0.69-1.08)	57.8	0.98 (0.79-1.22)	45.2	1.10 (0.88-1.37)
Age Group (years)		**p=.031**		p=.285		p=.462		p=.470		**p<.001**
18-24	83.3	1.00	62.6	1.00	62.4	1.00	57.5	1.00	32.5	1.00
25-39	84.4	1.24 (0.75-2.07)	69.7	1.29 (0.87-1.91)	69.1	1.26 (0.85-1.87)	56.6	0.82 (0.56-1.19)	39.4	1.15 (0.77-1.73)
40-54	89.2	2.03 (1.25-3.31)	67.4	1.28 (0.88-1.85)	67.3	1.31 (0.90-1.90)	58.7	1.04 (0.72-1.51)	44.6	1.63 (1.11-2.40)
55+	86.7	1.60 (0.96-2.66)	61.4	1.03 (0.71-1.51)	62.2	1.14 (0.78-1.66)	56.5	1.04 (0.71-1.52)	49.5	2.11 (1.41-3.15)
Ethnicity		p=.139		p=.886		p=.678		**p=.017**		p=.642
White	86.2	1.00	65.8	1.00	65.6	1.00	58.2	1.00	43.7	1.00
Non-white	88.0	1.44 (0.89-2.34)	65.0	0.98 (0.68-1.39)	66.1	0.93 (0.65-1.32)	52.1	0.67 (0.48-0.93)	39.7	0.92 (0.65-1.30)
Household income		p=.664		**p=.008**		p=.221		**p=.015**		**p=.010**
Low	84.3	1.00	58.2	1.00	58.9	1.00	50.3	1.00	41.2	1.00
Moderate	84.5	0.81 (0.48-1.36)	68.6	1.41 (0.97-2.04)	62.2	1.05 (0.72-1.52)	55.6	1.13 (0.78-1.64)	46.0	1.03 (0.71-1.51)
High	87.3	1.03 (0.68-1.55)	68.9	1.31 (0.97-1.76)	68.5	1.31 (0.97-1.78)	61.5	1.38 (1.03-1.86)	44.8	0.89 (0.65-1.21)
No answer	89.3	1.22 (0.63-2.39)	52.1	0.68 (0.43-1.09)	68.7	1.41 (0.86-2.30)	44.0	0.73 (0.46-1.18)	27.0	0.45 (0.27-0.74)
Education level		p=.143		p=.399		p=.714		**p=.017**		**p=.035**
Low	86.5	1.00	62.9	1.00	61.9	1.00	51.4	1.00	39.5	1.00
Moderate	85.1	0.70 (0.48-1.03)	64.2	0.88 (0.67-1.15)	65.4	1.03 (0.78-1.36)	56.0	1.09 (0.84-1.41)	41.6	0.99 (0.76-1.30)
High	88.8	0.92 (0.56-1.50)	71.4	1.06 (0.75-1.50)	70.3	1.15 (0.81-1.63)	66.2	1.59 (1.14-2.23)	49.9	1.43 (1.03-1.99)
Province/region		**p=.047**		**p=.043**		p=.627		**p<.001**		p=.726
Quebec	90.1	1.00	72.3	1.00	66.7	1.00	65.3	1.00	43.8	1.00
Atlantic†	84.6	0.59 (0.33-1.07)	65.0	0.74 (0.45-1.20)	65.0	0.86 (0.54-1.38)	51.0	0.50 (0.31-0.79)	45.2	1.02 (0.64-1.62)
Ontario	84.8	0.54 (0.36-0.82)	62.8	0.64 (0.47-0.86)	66.0	0.88 (0.65-1.18)	54.9	0.60 (0.45-0.80)	44.6	0.95 (0.72-1.26)
Prairie‡	87.6	0.78 (0.39-1.56)	58.5	0.56 (0.36-0.88)	66.4	0.97 (0.61-1.55)	54.1	0.61 (0.40-0.96)	37.6	0.79 (0.50-1.26)
Alberta	85.0	0.50 (0.28-0.90)	65.8	0.69 (0.45-1.04)	62.0	0.68 (0.45-1.03)	49.7	0.45 (0.30-0.67)	38.5	0.74 (0.49-1.13)
British Columbia	85.3	0.50 (0.28-0.91)	65.1	0.65 (0.42-1.00)	67.1	0.90 (0.58-1.41)	63.6	0.85 (0.55-1.31)	45.6	0.97 (0.65-1.47)
Smoking status		p=.340		**p<.001**		**p=.022**		p=.078		**p=.011**
Non-daily smoker	88.4	1.00	76.1	1.00	75.0	1.00	66.1	1.00	47.5	1.00
Daily smoker	85.8	0.80 (0.50-1.27)	62.0	0.50 (0.36-0.71)	62.4	0.68 (0.48-0.95)	54.2	0.75 (0.55-1.03)	41.6	0.67 (0.49-0.91)
E-cigarette use status		p=.707		**p=.044**		**p<.001**		**p<.001**		**p<.001**
Smoker	86.6	1.00	66.0	1.00	67.3	1.00	58.1	1.00	44.9	1.00
Dual user	85.9	0.95 (0.74-1.23)	63.8	0.83 (0.68-1.00)	55.4	0.58 (0.48-0.70)	52.3	0.71 (0.59-0.85)	32.0	0.56 (0.46-0.67)
CPD		p=.357		p=.113		**p=.03**		**p=.006**		p=.090
<10	87.6	1.00	70.1	1.00	71.0	1.00	62.8	1.00	44.7	1.00
11-20	86.7	0.90 (0.59-1.39)	62.7	0.93 (0.69-1.24)	62.2	0.78 (0.56-1.05)	54.0	0.80 (0.60-1.07)	40.6	0.88 (0.65-1.18)
21-30	81.7	0.66 (0.39-1.10)	54.3	0.68 (0.46-1.00)	52.9	0.56 (0.38-0.82)	42.7	0.49 (0.33-0.73)	41.5	0.87 (0.58-1.30)
>30	81.4	0.63 (0.25-1.60)	68.8	1.46 (0.70-3.06)	56.7	0.73 (0.35-1.52)	54.8	0.90 (0.44-1.86)	58.8	2.00 (1.02-3.91)
Plans to quit in next 6 months		**p=.01**		**p<.001**		**p=.012**		**p<.001**		**p<.001**
No	83.5	1.00	58.1	1.00	62.2	1.00	51.1	1.00	32.8	1.00
Yes	87.6	1.56 (1.11-2.19)	68.6	1.75 (1.36-2.26)	67.0	1.39 (1.08-1.79)	59.7	1.59 (1.23-2.05)	47.1	2.14 (1.64-2.79)

[S] Logistic regression models control for smokers' perceptions of societal attitudes towards smoking, and beliefs that smokers are increasingly marginalized.

† "Atlantic": Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick

‡ "Prairie": Manitoba and Saskatchewan

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