



Original Investigation

Prior Daily Menthol Smokers More Likely to Quit 2 Years After a Menthol Ban Than Non-menthol Smokers: A Population Cohort Study

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Abstract

Background and Aims: The province of Ontario, Canada, banned the use of menthol-flavored tobacco products as of January 1, 2017. This study aims to assess the longer-term impact of a menthol ban on smoking behavior at 2 years, which is unknown.

Methods: Population cohort study with baseline survey ($n = 1821$) conducted September–December 2016 and follow-up survey January–August 2019 among current smokers in Ontario (16+) prior to the menthol ban. Poisson regression was used to assess the probability of quitting smoking by pre-ban menthol status, controlling for differences in smoking and demographic characteristics, with multiple imputations used to address missing data.

Findings: Menthol smokers were more likely to report having quit smoking (12% [daily menthol] and 10% [occasional menthol] vs. 3% [non-menthol]; $p < .001$) than non-menthol smokers in the 2 years after a menthol ban. After adjustment for smoking and demographic characteristics, daily menthol smokers had higher likelihood of quitting smoking (adjusted relative risk [ARR] 2.08; 95% confidence interval [CI] 1.20–3.61) and reported more quit attempts (ARR 1.45; 95% CI 1.15–1.82). Among those who attempted to quit, menthol smoking was not associated with relapse (daily ARR = 0.96; 95% CI: 0.86, 1.07; occasional ARR = 0.99; 95% CI: 0.90, 1.08). However, there was a statistically significant interaction among menthol users who reported using other flavored tobacco products 1 year after the ban (ARR = 0.26 [95% CI: 0.08, 0.90])

Conclusions: The study found increased probability of quitting among daily menthol smokers and more quit attempts among daily and occasional menthol smokers compared with non-menthol smokers in Ontario 2 years after the implementation of a menthol ban.

Implications: This study examines quitting behavior 2 years after a menthol ban in Ontario, Canada. Those who were daily menthol smokers prior to the ban were more likely to quit smoking and make more quit attempts in the 2 years after the ban. While there was no difference in the likelihood of relapse between menthol and non-menthol smokers among those who attempt to quit, there were indications that pre-ban daily menthol smokers who used other tobacco products after the ban were likely to quit.

Introduction

Menthol is a flavoring agent added to cigarettes that masks the taste of tobacco, induces sensory effects, and recruits and retains smokers.¹⁻³ While over 200 localities and two states in the United States have now implemented flavor bans on tobacco, very few countries have banned menthol cigarettes.⁴⁻⁹ As an exception, Canada has implemented a now national ban to address the issue of high rates of menthol cigarette use among youth.⁴ Other nations such as Brazil, Ethiopia, Turkey, and the European Union have passed regulations to ban menthol tobacco products and the EU directive is to come into force May 2020.⁵ In the United States, the Food and Drug Administration has announced intentions to regulate the sale of menthol in tobacco.¹⁰ Evaluating the impact of a menthol ban could inform the implementation of restrictions in other jurisdictions.

This study examines the experience of the province of Ontario, Canada. On January 1, 2017, Ontario implemented a ban on menthol-flavored tobacco products. In Canada, menthol sales were less prevalent than in the United States, accounting for only about 5% of the cigarette sale market, whereas in the United States, 35% of all cigarettes sold are mentholated.¹⁰⁻¹² Among Canadians age 15 and older in 2015, more than one-third (35.3%) of all respondents said they had ever smoked a menthol cigarette; 1.6% of all respondents had smoked one in the past 30 days.¹³ Shortly after the ban, a population-wide evaluation of smoking behavior in Ontario was conducted.¹⁰ The study compared the planned behavior of menthol smokers before the ban with their actual behavior 1-month post-ban and found that a greater percentage of menthol smokers attempted to quit after the ban than had planned before the ban.⁷ Follow-up at 1 year found that those who were daily menthol smokers prior to the ban were more likely to attempt to quit and be quit.¹⁴ At the 1-year follow-up, 63% of daily menthol smokers reported making a quit attempt since the ban compared to 62% of occasional menthol smokers and 43% of non-menthol smokers (adjusted relative risk [ARR] for daily menthol smokers compared to non-menthol smokers: 1.25; 95% CI 1.03–1.50). Daily menthol smokers were also more likely to report being abstinent after 1 year compared to non-menthol smokers: 1.62; 95% CI 1.08, 2.42). This suggests that the ban substantially increased quit attempts in the short duration after the ban, however, the longer-term impact of the menthol ban is not known.

It is uncertain what the long-term effects of the menthol ban on smoking behavior will be given that we have seen the tobacco industry change its tactics to prepare consumers for the menthol ban, such as the introduction of new products.¹⁵ Therefore, this study aims to estimate the effect of the menthol ban on smoking behaviors more than 2 years after the ban.

Methods

Study Sample

This study was based on a cohort of Ontario residents, ages 16 and over, who were current smokers at baseline (ie, past month smokers) before the ban. Participants at baseline were recruited between September and December 2016, through random digit dialing (RDD) of Ontario smokers ($n = 1064$), plus a supplemental convenience sample of past year smokers ($n = 757$) for a total of 1821 participants. For the telephone sample, a simple single-stage sampling design without stratification was used to randomly select Ontario residential telephone numbers from a commercial telephone

list. The next birthday method was used to select the individual in the household over 16 who spoke English. Participation rate for the RDD rate was 44% with 6.7% refusal rate among known eligible participants. Smokers from the convenience sample were recruited through an email invitation. Participants were contacted at 1 year after the implementation of the menthol ban to complete an online survey. Participants who did not complete the online survey or did not have online access were interviewed by telephone. The online follow-up survey was conducted between January and August 2018 and 2019 to examine smoking behavior changes, with complete data on 810 participants. Past year menthol smokers had also completed a follow-up survey January-March, 2017. This study was approved by the research ethics board of the University of Toronto, Ontario, Canada and participants gave consent to participate.

Measures

At baseline, menthol cigarette use was categorized into three categories: (1) “non-menthol smokers” defined as participants who had not smoked menthol cigarettes in the past year; (2) “daily menthol users” defined as people who smoked menthol cigarettes daily in the past year and were daily or almost daily smokers; and (3) “non-daily (occasional) menthol smokers” defined as people who smoked menthol cigarettes occasionally or rarely in the past year. At the follow-up interview, participants reported when they had last smoked a menthol or non-menthol cigarette, even a puff and those who reported not smoking within the past 6 months at year 2 follow-up were considered to have quit smoking. The secondary outcome was the number of times reporting making a serious quit attempt. Quit attempts were the sum of self-reported quit attempts at 1- and 2-year follow-ups (“In the past year, have you made a serious attempt to quit smoking? By serious, we mean that you made a conscious attempt to stay off cigarettes for good. How many quit attempts in the past year have you made?”). All those who reported not smoking at either follow-up were considered to have made a quit attempt. Relapse was assessed among those who had made a quit attempt ($n=671$). Those who had made a quit attempt, but reported smoking at the 2-year follow-up were considered to have relapsed. Other variables that were collected during the baseline survey included age, sex (male, female, other), education (“some elementary or some high school,” “completed high school,” “some community or technical college,” “completed community or technical college,” “some university,” “completed university,” refused), race (white, Asian, Black, Latin American, Arab, Aboriginal, multiple cultural backgrounds, refused, other), the number of cigarettes smoked per day on days that they smoked, daily or non-daily smoking, the use of other flavored tobacco products (e-cigarettes, hookah, smokeless, cigars, pipes, bidis, and kreteks), and the use of unflavored non-cigarette tobacco products (e-cigarettes, hookah, smokeless, cigars, pipes, bidis, and kreteks).

Statistical Analysis

Proportions with corresponding 95% confidence intervals (CIs) and the Pearson’s chi-square test were used to describe the study sample. Separate crude and adjusted Poisson regression models were performed for quitting, number of quit attempts, and relapse (among the population of individuals reporting a quit attempt). All Poisson regressions were estimated with robust standard errors. Models were adjusted for baseline covariates, including age, sex, education, race, number of cigarettes per day, daily or non-daily smoking, the use

of other flavored tobacco products, and the use of unflavored non-cigarette tobacco products, survey source (ie, RDD or convenience sample), and the number of days between the baseline and follow-up survey. Sensitivity analyses examined interactions by sex, age group (under the age of 30 and age 30 and above), and race (white vs. non-white). Likelihood ratio test was used to assess if an interaction term was statistically significant between models with and without the interaction term (by sex, age group, and race). All analyses were performed using STATA Version 14.2 StataCorp LP.¹⁶

Missing Data

Characteristics of those who were lost to follow-up compared to those who were not was assessed using Pearson's chi-square test. Multiple imputations using STATA's mi commands was used to impute missing data using linear or logit regression to impute depending on the variable. There were 20 imputed data sets. Unimputed models are reported in the [Supplementary Appendix](#).

Results

Of the 1821 participants who completed the baseline survey, 825 (45%) were non-menthol cigarette smokers, 702 (39%) were occasional menthol smokers, and 294 (16%) were daily menthol cigarette smokers. The median follow-up time after the ban was 817 days. The three groups of participants—non-menthol smokers, occasional menthol smokers, and daily menthol smokers—differed significantly by sex, age, education, race, and smoking behaviors. Daily and occasional menthol smokers were more likely to be female, non-white, and have more than a high school education than non-menthol

smokers, while occasional menthol smokers had the highest percentage (22%) of young adults (ie, between 16 and 29 years of age) ([Table 1](#)). [Table 2](#) displays comparison of baseline characteristics of study participants who completed and who did not complete the year 2 follow-up.

Daily menthol smokers reported an average of 3.0 quit attempts (0.65 standard error [SE]) since the ban compared to 2.6 (0.26 SE) attempts among occasional menthol smokers and 1.2 attempts (0.14 SE) among non-menthol smokers. Two years post-ban, menthol smokers, both daily and occasional, were more likely to report having quit smoking (12% and 10% vs. 3%; $p < .001$) than non-menthol smokers ([Table 1](#)).

[Table 3](#) presents the crude and adjusted Poisson regression models for the association between quitting (being smoke-free for 6 months at the 2-year follow-up) and having attempted to quit with menthol smoking at baseline. Daily menthol smokers had significantly higher likelihood of reporting having quit smoking (adjusted risk ratio (ARR) 2.08; 95% confidence interval (CI) 1.20–3.61) compared to non-menthol smokers, controlling for smoking and demographic characteristics. Though before adjustment, there was higher likelihood of reporting having not smoked for 6 months or longer (ARR 2.01; 95% CI 1.28–3.16) among occasional menthol smokers than non-menthol smokers, adjusted result (ARR 1.34; $p = .278$) was no longer significant. Unadjusted analysis displayed a significant increase in the probability of reporting more quit attempts for daily and occasional menthol smokers compared to non-menthol smokers, which remained in the adjusted analysis (ARR 1.27; 95% CI 1.03–1.56 for occasional menthol smokers and ARR 1.45 (95% CI: 1.15–1.82) for daily menthol smokers, compared to

Table 1. Baseline Characteristics of Smokers, Overall and by Menthol Smoking Status, in Ontario, Canada (N = 1821), 2016

Characteristics	No Menthol Smokers	Occasional Menthol Smokers	Daily Menthol Smokers	Total		
	n = 825 (45%)	n = 702 (39%)	n = 294 (16%)	N = 1821		
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	n	p-Value
Sex						
Female	49 [46,53]	57 [53,60]	65 [59,70]	55 [52,57]	996	<.001
Male	50 [46,53]	43 [39,46]	34 [28,39]	45 [42,47]	811	
Other	0.5 [0.1,1]	0.6 [0.2,1]	1 [0.5,3]	0.7 [0.3,1]	12	
Age						
16–29	5 [3,6]	22 [19,25]	14 [10,18]	13 [11,14]	236	<.001
30 and over	95 [93,96]	78 [74,81]	86 [81,89]	87 [85,88]	1,585	
Education						
≤ High school	49 [45,52]	28 [25,31]	30 [24,35]	38 [35,40]	686	<.001
> High school	51 [48,54]	72 [68,75]	70 [65,75]	62 [60,64]	1,133	
Race						
Non-white	12 [10,14]	21 [18,24]	18 [13,22]	17 [15,18]	301	<.001
White	88 [85,90]	79 [75,81]	82 [77,86]	83 [81,85]	1,518	
Cigarettes per day						
0 to 10	33 [29,36]	38 [35,42]	32 [27,38]	35 [32,37]	633	<.001
11 to 20	43 [40,46]	35 [32,39]	36 [31,42]	39 [37,41]	710	
21 to 30	18 [15,21]	17 [15,19]	15 [11,19]	17 [15,19]	311	
Over 30	6 [4,8]	10 [8,12]	16 [12,21]	9 [8,10]	167	
Smoking pattern						
Daily	94 [92,96]	82 [79,85]	100	91 [89,92]	1,652	<.001
Non-Daily	6 [4,7]	18 [15,20]	0	9 [8,10]	169	
Quit (no smoking past 6 m) (At 2-year follow-up)						
No	45 [41,48]	62 [58,65]	61 [55,66]	54 [52,56]	982	<.001
Yes	3 [2,5]	10 [8,12]	12 [9,17]	7 [6,9]	133	
Missing	52 [48,55]	28 [25,32]	27 [22,32]	39 [37,41]	706	

Table 2. Complete vs. Missing in Ontario, Canada (*N* = 1821) at Year 2

Characteristics	Missing	Complete	Total	<i>n</i>	<i>p</i> -Value
	<i>n</i> = 1011 (55%)	<i>n</i> = 810 (44%)	<i>N</i> = 1821		
	% (95% CI)	% (95% CI)	% (95% CI)		
Sex					
Female	51 [47,53]	60 [56,63]	55 [52,57]	996	<.001
Male	49 [46,52]	39 [36,42]	45 [42,47]	811	
Other	0.3 [0.1,1]	1 [0.5,2]	0.7 [0.3–1]	12	
Age					
16–29	12 [10,14]	14 [12,17]	13 [11,14]	236	.077
30 and over	88 [86,90]	86 [83,88]	87 [85,88]	1,585	
Education					
≤ High school	44 [41,47]	30 [27,33]	38 [35,40]	686	<.001
> High school	56 [53,59]	70 [66,73]	62 [60,64]	1,133	
Race					
Non-white	17 [15,20]	16 [13,18]	17 [15,18]	301	.311
White	83 [80,85]	84 [82,87]	83 [82,85]	1,518	
Cigarettes per day					
0 to 10	32 [29,35]	38 [35,41]	35 [33,37]	633	.029
11 to 20	40 [37,43]	38 [34,41]	39 [37,41]	710	
21 to 30	19 [16,21]	15 [13,17]	17 [15,19]	311	
Over 30	9 [7,11]	9 [7,11]	9 [8,10]	167	
Smoking pattern					
Daily	93 [91,94]	88 [86,90]	91 [89,92]	1,652	.001
Non-daily	7 [5,9]	12 [10,14]	9 [8,11]	169	
Menthol smoking					
No menthol	57 [54,60]	32 [29,35]	45 [43,47]	825	<.001
Occasional menthol	30 [28,33]	48 [45,51]	39 [36,41]	702	
Daily menthol	13 [11,15]	20 [18,23]	16 [14,18]	294	
Survey source					
Phone random sample	74 [71,77]	40 [37,43]	58 [56,61]	1064	<.001
Smokers panel	26 [23,29]	60 [56,63]	42 [39,44]	757	

Table 3. Associations Between Menthol Smoking Status Prior to Menthol Ban and Quit, Number of Quit Attempts and Post-Ban Relapse in Ontario, Canada, Using Poisson Regression With Robust Variance Estimation, 2016–2019; *N* = 1821

Menthol use	Quit	Number of Quit Attempts		Relapse Among Quit Attempters (<i>n</i> = 546)		
	Crude RR (95% CI)	Adjusted ^a RR (95% CI)	Crude RR (95% CI)	Adjusted ^a RR (95% CI)	Crude RR (95% CI)	Adjusted ^a RR (95% CI)
No menthol	1.00	1.00	1.00	1.00	1.00	1.00
Occasional	2.01** [1.28,3.16]	1.34 [0.78,2.30]	1.41*** [1.19,1.67]	1.27* [1.03,1.56]	3.77** [1.72,8.28]	1.61 [0.69,3.77]
Daily	2.54*** [1.53,4.23]	2.08** [1.20,3.61]	1.50** [1.14,1.96]	1.45** [1.15,1.82]	3.50** [1.38,8.86]	2.02 [0.83,4.95]

RR = risk ratio; 95% CI = 95% confidence interval.

^aAnalyses controlling for age, sex, race, education, survey source, use of any non-cigarette flavor product, use of any non-cigarette non-flavored product, cigarettes smoked per day, daily or non-daily smoking at baseline, and number of days between the menthol ban and the follow-up survey.

p* < .05, *p* < .01, ****p* < .001.

non-menthol smokers). After adjustment for baseline smoking and demographic characteristics, there was no difference in rates of relapse by baseline menthol status (Table 3).

The use of flavored non-cigarette tobacco products was consistent over time (Table 4). However, exploratory analyses found that among those who reported smoking at year 1, there was an interaction between menthol use at baseline, use of flavored products reported at year 1, and likelihood of not smoking at year 2

(ARR = 0.26 [95% CI: 0.08, 0.90]; See [Supplementary Appendix](#)). That is, people who had smoked menthol at baseline who had not quit smoking by the 1-year follow-up, were less likely to be smoke-free at the 2-year follow-up if they also reported having used other flavored products, suggesting an impact of substitution on being able to quit smoking.

Analysis stratified by age, sex, and race are available in the [Supplementary Appendix](#).

Table 4. Past Year Use of Flavored Other Tobacco Products (E-Cigarettes, Cigars, Smokeless, Hookah, Bidis, Kreteks) and E-cigarettes, Cigars, Smokeless, Hookah, Bidis, Kreteks (Flavored or Unflavored)

	% Use of Flavored Other Tobacco Products (e-Cigarettes, Cigars, Smokeless, Hookah, Bidis, Kreteks [95% CI])		
	Baseline Lifetime Use	Year 1 Past year use	Year 2 Past year use
No Menthol	19 [16,21]	13.9 [9.5,19.9]	18.5 [14.2,23.7]
Occasional	64 [60,67]	26.9 [22.4,32.1]	25.3 [21.1,29.9]
Daily	48 [42,54]	17.6 [12.2,24.8]	18.3 [13.1,25.0]

Discussion

The results of this study support the growing body of literature suggesting a positive population health impact of the menthol ban in Canada. Overall, the study found that 2 years after the ban there continued to be a significantly higher likelihood of reported smoking cessation and number of quit attempts for prior menthol smokers. There continued to be a strong association between having been a menthol smoker and smoking cessation behaviors after controlling for potential covariates.

The results from our study suggest that the ban on the sale of menthol tobacco products increased the number of people quitting or attempting to quit smoking at the 2-year follow-up.¹⁵ Our previous work examined point prevalence smoking status 1 year after the implementation of the ban, and this long-term analysis demonstrates the continued impact of the menthol ban using a more robust outcome measure of cessation.

Considering that menthol smokers may be more nicotine dependent and have reduced cessation success,¹⁷⁻¹⁹ our findings that daily menthol smokers were significantly more likely to report smoking cessation relative to non-menthol smokers after the ban suggest that the menthol ban could have tremendous public health impact at the population level not only in Canada but in other jurisdictions as well, especially for jurisdictions with higher prevalence of menthol smokers. The lack of a difference in relapse rate by prior menthol smoking status after adjustment for covariates suggests that the menthol ban may be leveling the playing field for menthol and non-menthol smokers in terms of ability to quit.

Exploratory analyses suggested that switching to other flavored tobacco or nicotine products may impact the long-term impact of the ban on quitting. Therefore, we would expect that a menthol ban would have an even greater impact in at-risk subpopulations such as youth and young adults in an environment in which there was less availability of any flavored tobacco or nicotine products. More research is needed to understand how alternative flavor products might affect interest in quitting cigarettes.

This study has several strengths, namely it is a large population study with a long follow-up period. As with any cohort study, there is the potential issue of loss-to-follow-up. While some of the study participants were recruited through RDD, given the limitations of RDD, we do not expect that sample to be fully representative of the population.²⁰ Generalizability of this survey may be best assessed

through effect estimates of the stratified subpopulations as available in the [Supplementary Appendix](#) that can be most directly applied to other populations. However, sample size of the stratified sample may be too small to identify interaction effects that previous studies have demonstrated.¹⁷⁻¹⁹ Inclusion of objective biomarkers of cessation (eg, expired air CO; saliva or urine cotinine concentration) would strengthen future studies.

Our findings suggest that Ontario's ban on the sale of menthol tobacco products increased the number of people reporting quitting 2 years after the ban.

Supplementary Material

A Contributorship Form detailing each author's specific involvement with this content, as well as any supplementary data, are available online at <https://academic.oup.com/ntr>.

Funding

This research was supported by the National Institute on Drug Abuse (NIDA) of the U.S. National Institutes of Health (NIH) under Award Number P50DA036105 and the Center for Tobacco Products (CTP) of the U.S. Food and Drug Administration (FDA) and the NIH Office of the Director under award number 1R21DA047358-01. The content is solely the responsibility of the authors and does not necessarily represent the views of the NIH or the FDA. This study was approved by the research ethics board of the University of Toronto.

Declaration of Interests

TE is a paid consultant in litigation against the tobacco industry and the electronic cigarette industry, and is named on a patent for a device that measures the puffing behavior of electronic cigarette users. There are no other interests to declare.

References

- Yerger VB. Menthol's potential effects on nicotine dependence: a tobacco industry perspective. *Tob Control*. 2011;20(Suppl 2):ii29-36.
- Klausner K. Menthol cigarettes and smoking initiation: a tobacco industry perspective. *Tob Control*. 2011;20(Suppl 2):ii12-19.
- Lee YO, Glantz SA. Menthol: Putting the pieces together. *Tob Control*. 2011;20(Suppl 2):ii1-7.
- Brown J, DeAtley T, Welding K, et al. Tobacco industry response to menthol cigarette bans in Alberta and Nova Scotia, Canada. *Tob Control*. 2017;26(e1):e71-e74.
- Control Legal Consortium T. How other countries regulate flavored tobacco products. <https://publ iche alth lawc enter. org/ sites/ default/ files/ resources/ tcl- fs- global- flavored- regs- 2015. pdf>. Accessed Jan 29, 2019.
- Roehr B. FDA announces crackdown on e-cigarettes in bid to reduce teenage vaping. *BMJ*. 2018;363:k4908.
- Malone RE. It's the 21st century: isn't it past time to ban menthol cigarette sales? *Tob Control*. 2017;26(4):359-369.
- Brock B, Carlson SC, Leizinger A, D'Silva J, Matter CM, Schillo BA. A tale of two cities: Exploring the retail impact of flavoured tobacco restrictions in the twin cities of Minneapolis and Saint Paul, Minnesota. *Tob Control*. 2019;28(2):176-180.
- Lencucha R, Ruckert A, Labonte R, Drope J. Opening windows and closing gaps: a case analysis of Canada's 2009 tobacco additives ban and its policy lessons. *BMC Public Health*. 2018;18(1):1321.
- Chaiton M, Schwartz R, Cohen JE, Soule E, Eisenberg T. Association of Ontario's Ban on Menthol Cigarettes with smoking behavior 1 month after implementation. *JAMA Intern Med*. 2018;178(5):710-711.

11. Trade Commission F. Federal Trade Commission Cigarette Report for 2016. <https://www.ftc.gov/cigarettedata>. Accessed January 24, 2019.
12. Bird Y, May J, Nwankwo C, Mahmood R, Moraros J. Prevalence and characteristics of flavoured tobacco use among students in grades 10 through 12: a national cross-sectional study in Canada, 2012-2013. *Tob Induc Dis*. 2017;15:20.
13. Reid JL, Hammond D, Rynard VL, et al. *Tobacco Use in Canada: Patterns and Trends*. 2017 edition. Waterloo, ON: Propel Centre for Population Health Impact, University of Waterloo.
14. Chaiton MO, Nicolau I, Schwartz R, et al. Ban on menthol-flavoured tobacco products predicts cigarette cessation at 1 year: a population cohort study. *Tob Control*. 2019;0:1-7.
15. Schwartz R, Chaiton M, Borland T, Diemert L. Tobacco industry tactics in preparing for menthol ban. *Tob Control*. 2018;27(5):577.
16. StataCorp. *Stata Statistical Software: Release 14*. College Station, TX: StataCorp LP; 2015.
17. Food and Drug Administration. Preliminary scientific evaluation of the possible public health effects of menthol versus nonmenthol cigarettes. Silver Spring, MD; 2013. <http://www.fda.gov/downloads/ScienceResearch/SpecialTopics/PeerReviewofScientificInformationandAssessments/UCM361598.pdf>. Accessed August 13, 2018.
18. Tobacco Products Scientific Advisory Committee. Menthol Cigarettes and Public Health: Review of the Scientific Evidence and Recommendations, July 21, 2011. <http://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/TobaccoProductsScientificAdvisoryCommittee/UCM269697.pdf>.
19. WHO Study Group on Tobacco Product Regulation (TobReg). Banning menthol in tobacco products, 2016. <http://www.who.int>. Accessed August 13, 2018.
20. Rothman KJ, Gallacher JE, Hatch EE. Why representativeness should be avoided. *Int J Epidemiol*. 2013;42(4):1012-1014.