

Attitudes Toward Prohibiting Tobacco Sales in Pharmacy Stores Among U.S. Adults

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Introduction: Pharmacy stores are positioned to cultivate health and wellness among patrons. This study assessed attitudes toward prohibiting tobacco product sales in pharmacy stores among U.S. adults.

Methods: Data from the 2014 Summer Styles, an Internet survey of U.S. adults aged ≥ 18 years ($n=4,269$), were analyzed in 2015. Respondents were asked: *Do you favor or oppose banning the sale of all tobacco products in retail pharmacy stores?* Responses were: *strongly favor*, *somewhat favor*, *somewhat oppose*, and *strongly oppose*. Prevalence ratios were calculated using multivariate Poisson regression to determine sociodemographic correlates of favorability (*strongly* or *somewhat*).

Results: Among all adults, 66.1% “strongly” or “somewhat” favored prohibiting tobacco product sales in pharmacy stores. Favorability was 46.5% among current cigarette smokers, 66.3% among former smokers, and 71.8% among never smokers. Favorability was 47.8% among current non-cigarette tobacco users, 63.2% among former users, and 71.4% among never users. Following adjustment, favorability was more likely among women compared with men ($p < 0.05$). Conversely, favorability was less likely among the following: adults aged 25–44 years and 45–64 years compared with those aged ≥ 65 years, those with annual household income of \$15,000–\$24,999 compared with $\geq \$60,000$, current cigarette smokers compared with never smokers, and current and former non-cigarette tobacco users compared with never tobacco users ($p < 0.05$).

Conclusions: Most U.S. adults favor prohibiting tobacco sales in retail pharmacy stores. Eliminating tobacco product sales in these settings may reinforce pharmacy stores’ efforts to promote wellness, and further cultivate social climates that reduce the desirability, acceptability, and accessibility of tobacco.

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Introduction

Pharmacy stores are positioned to cultivate health and wellness among patrons. However, many U.S. pharmacies sell and advertise tobacco, the nation’s leading preventable cause of death and disease.¹ This is an

established concern among pharmacists, whose professional obligation is to promote their patients’ health.^{2–4}

Just as pharmacists’ attitudes can shape tobacco-free practices,⁵ public attitudes toward tobacco control interventions can inform policy development, implementation, and sustainment. Previous studies have documented general public favorability toward tobacco-related sales restrictions in pharmacy stores at national and local levels, and variations in favorability by sociodemographic characteristics and cigarette smoking status.^{6,7} However, increasingly more communities across the U.S. have since implemented policies that prohibit the sale of tobacco products in these settings.⁸ Moreover, the tobacco product landscape continues to diversify, and no study has assessed variations in public attitudes

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toward such policies by other forms of tobacco product use beyond cigarettes. Accordingly, this study assessed the prevalence and determinants of favorability toward prohibiting the sale of tobacco products in pharmacy stores among a nationally representative sample of U.S. adults in 2014.

Methods

Data Source

Data came from Summer Styles, a web-based survey conducted by Porter Novelli to explore health behaviors and attitudes among U.S. adults aged ≥ 18 years. Styles respondents are drawn from the nationally representative KnowledgePanel[®], which uses probability-based sampling to recruit online panelists regardless of landline phone or Internet access. As described previously, Summer Styles is sent to a stratified random sample of respondents, and data are weighted to be nationally representative using Current Population Survey distributions.⁹ In 2014 (June–July), 4,269 respondents completed Summer Styles, yielding a 69% response rate. This secondary analysis of de-identified data was exempt from human subjects review.

Measures

Participants were asked: *Do you favor or oppose banning the sale of all tobacco products in retail pharmacy stores?* Adults who responded *strongly favor* or *somewhat favor* were considered to favor a policy prohibiting all tobacco sales in pharmacy stores. Favorability was assessed by cigarette smoking status, non-cigarette tobacco product use (i.e., cigars or big cigars; cigarillos; little cigars; chewing tobacco, snuff, or dip; electronic cigarettes or e-cigarettes; electronic hookahs, hookah pens, or vape pens; some other electronic vapor product such as electronic cigars or electronic pipes; water pipes; roll-your-own cigarettes; flavored cigars; snus; dissolvable tobacco), and sociodemographics (sex, age, race/ethnicity, education, annual household income, and U.S. region).

Statistical Analysis

Point estimates and 95% CIs were calculated overall and by sociodemographics, cigarette smoking status, and non-cigarette tobacco product use. Multivariate Poisson regression was used to calculate adjusted prevalence ratios (APRs) of the association between favorability and sociodemographics, cigarette smoking, and non-cigarette tobacco use. Analyses were conducted in 2015 using R, version 3.2.2.

Results

Overall, 66.1% of U.S. adults favored (“strongly” or “somewhat”) prohibiting tobacco product sales in pharmacy stores; 20.1% “somewhat opposed” and 13.8% “strongly opposed” the idea (Table 1). Prevalence of favorability was 62.2% among men and 69.7% among women. Favorability ranged from 63.7% among adults aged 25–44 years to 72.2% among adults aged ≥ 65 years;

from 64.6% among non-Hispanic blacks to 70.4% among non-Hispanic other races; from 61.7% among adults with less than a high school education to 70.1% among those with a college degree; from 48.0% among adults with annual household income $< \$15,000$ to 69.0% among adults with income $\geq \$60,000$; and from 63.9% in the South to 70.2% in the West. Favorability was 46.5% among current cigarette smokers, 66.3% among former smokers, and 71.8% among never smokers. Favorability was 47.8% among current non-cigarette tobacco users, 63.2% among former non-cigarette tobacco users, and 71.4% among never non-cigarette tobacco users.

The adjusted likelihood of favorability was greater among women than men (APR=1.08, 95% CI=1.03, 1.14) (Table 2). The likelihood of favorability was lower among those aged 25–44 years (APR=0.91, 95% CI=0.86, 0.98) and 45–64 years (APR=0.94, 95% CI=0.88, 0.99) than those aged ≥ 65 years; among those with annual household income $< \$15,000$ (APR=0.82, 95% CI=0.71, 0.94) than those with income $\geq \$60,000$; among current cigarette smokers (APR=0.73, 95% CI=0.65, 0.82) than never smokers; and among current (APR=0.80, 95% CI=0.70, 0.92) or former (APR=0.93, 95% CI=0.87, 0.99) non-cigarette tobacco users than never users.

Discussion

This study reveals that two thirds of U.S. adults, including nearly half of cigarette smokers and non-cigarette tobacco users, favor prohibiting the sale of tobacco products in retail pharmacy stores. A majority of all assessed sociodemographic groups favored prohibiting tobacco sales in pharmacies, but the likelihood of favoring such a policy was lower among adults aged 25–44 years and 45–64 years, and among adults with annual income $< \$15,000$. These findings are generally consistent with previous surveys, which indicate cigarette smokers are less likely to have favorable attitudes toward tobacco-related sales restrictions in pharmacies.^{6,7} However, this study is the first to document that current users of non-cigarette tobacco products are also less likely to demonstrate favorability for such policies than never users. Non-cigarette tobacco product users are an important subgroup to consider, as tobacco-free pharmacy policies typically address the diversity of tobacco products available on the market.¹⁰

The sale of tobacco products in retail pharmacies has the potential to undermine the promotion of patient health, especially among combustible tobacco users. More than 16 million Americans currently live with a smoking-related illness,¹ and cigarette smoking can complicate chronic disease management and

Table 1. Favorability Toward Prohibiting Tobacco Product Sales in Retail Pharmacy Stores Among U.S. Adults, 2014^a

Characteristic	n (%)	% (95% CI)			
		Strongly favor	Somewhat favor	Somewhat oppose	Strongly oppose
Overall	4,198	42.3 (40.5, 44.1)	23.8 (22.2, 25.4)	20.1 (18.7, 21.6)	13.8 (12.6, 15.1)
Sex					
Male	2,061 (49.1)	38.3 (35.8, 40.8)	23.9 (21.6, 26.2)	21.3 (19.2, 23.4)	16.5 (14.6, 18.4)
Female	2,137 (50.9)	46.0 (43.5, 48.5)	23.6 (21.5, 25.8)	19.0 (17.0, 21.0)	11.4 (9.7, 13.0)
Age (years)					
≥ 65	922 (22.0)	48.7 (45.2, 52.3)	23.4 (20.4, 26.5)	17.2 (14.5, 19.8)	10.7 (8.6, 12.7)
45–64	1,845 (43.9)	44.1 (41.4, 46.7)	20.7 (18.7, 22.8)	21.3 (19.1, 23.4)	13.9 (12.1, 15.8)
25–44	1,173 (27.9)	38.7 (35.4, 42.0)	25.0 (22.0, 28.0)	21.1 (18.4, 23.8)	15.2 (12.8, 17.6)
18–24	258 (6.1)	37.5 (31.2, 43.8)	29.3 (23.3, 35.4)	18.5 (13.5, 23.5)	14.7 (9.9, 19.5)
Race/ethnicity					
White, NH	3,169 (75.5)	41.6 (39.6, 43.6)	23.9 (22.2, 25.7)	21.4 (19.7, 23.0)	13.1 (11.7, 14.4)
Black, NH	395 (9.4)	40.3 (34.7, 45.8)	24.3 (19.4, 29.2)	20.5 (15.8, 25.2)	14.9 (10.7, 19.1)
Other, NH	228 (5.4)	49.1 (40.9, 57.4)	21.3 (14.3, 28.2)	14.7 (9.5, 19.9)	14.9 (9.4, 20.5)
Hispanic	406 (9.7)	43.5 (38.0, 49.1)	23.7 (18.8, 28.7)	16.8 (12.7, 20.9)	16.0 (11.8, 20.1)
Education					
College degree	1,386 (33.0)	45.2 (42.1, 48.4)	24.8 (22.1, 27.6)	18.5 (16.1, 20.9)	11.4 (9.5, 13.4)
Some college	1,296 (30.9)	44.8 (42.6, 48.0)	19.4 (16.8, 22.0)	19.4 (16.9, 21.8)	16.4 (14.0, 18.8)
High school	1,228 (29.2)	40.4 (37.2, 43.6)	25.3 (22.4, 28.1)	21.9 (19.3, 24.6)	12.4 (10.3, 14.4)
< High school	288 (6.9)	33.7 (27.7, 39.7)	28.0 (22.0, 34.0)	21.2 (16.0, 26.5)	17.0 (12.0, 22.0)
Annual household income					
≥ \$60,000	2,065 (49.2)	44.5 (41.9, 47.0)	24.6 (22.3, 26.8)	18.3 (16.4, 20.2)	12.6 (10.9, 14.3)
\$40,000–\$59,999	757 (18.0)	45.3 (41.1, 49.6)	22.1 (18.6, 25.6)	20.5 (17.1, 23.9)	12.1 (9.3, 14.9)
\$25,000–\$39,999	700 (16.7)	42.6 (38.2, 47.0)	23.2 (19.5, 27.0)	20.1 (16.6, 23.6)	14.1 (11.0, 17.1)
\$15,000–\$24,999	305 (7.3)	41.4 (35.0, 47.9)	23.6 (17.9, 29.4)	24.6 (19.0, 30.3)	10.3 (6.9, 13.6)
< \$15,000	371 (8.8)	24.6 (19.7, 29.5)	23.4 (18.0, 28.8)	24.8 (19.2, 30.4)	27.2 (21.5, 32.9)
U.S. Census region ^b					
Northeast	747 (17.8)	44.3 (40.1, 48.4)	22.5 (18.8, 26.1)	19.7 (16.4, 23.1)	13.5 (10.7, 16.4)
Midwest	1,058 (25.2)	39.3 (35.8, 42.8)	25.3 (22.2, 28.5)	21.1 (18.2, 24.0)	14.3 (11.7, 16.8)
South	1,494 (35.6)	41.9 (39.0, 44.9)	22.0 (19.5, 24.5)	21.2 (18.8, 23.7)	14.9 (12.6, 17.1)
West	899 (21.4)	44.0 (40.0, 47.9)	26.2 (22.6, 29.8)	17.7 (14.8, 20.6)	12.1 (9.7, 14.5)
Cigarette smoking ^c					
Never smoker	2,241 (55.2)	47.6 (45.1, 50.1)	24.2 (22.1, 26.4)	17.1 (15.2, 18.9)	11.1 (9.5, 12.7)
Former smoker	1,233 (30.4)	44.0 (40.8, 47.2)	22.3 (19.6, 25.0)	19.5 (17.0, 22.0)	14.1 (11.8, 16.4)
Current smoker	582 (14.4)	20.9 (16.8, 25.1)	25.5 (21.2, 29.9)	32.6 (28.0, 37.1)	21.0 (17.3, 24.6)

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Table 1. Favorability Toward Prohibiting Tobacco Product Sales in Retail Pharmacy Stores Among U.S. Adults, 2014^a
(continued)

Characteristic	n (%)	% (95% CI)			
		Strongly favor	Somewhat favor	Somewhat oppose	Strongly oppose
Non-cigarette tobacco products ^d					
Never user	2,263 (54.4)	48.9 (46.4, 51.3)	22.6 (20.5, 24.7)	16.9 (15.0, 18.7)	11.7 (10.0, 13.3)
Former user	1,473 (35.4)	37.2 (34.3, 40.1)	26.0 (23.3, 28.7)	21.8 (19.4, 24.3)	14.9 (12.9, 17.0)
Current user	421 (10.1)	23.9 (18.8, 29.0)	23.9 (18.8, 29.0)	30.2 (24.9, 35.4)	22.0 (17.4, 26.6)

^aRespondents were asked: "Do you favor or oppose banning the sale of all tobacco products in retail pharmacy stores?" Responses were: "strongly favor," "somewhat favor," "somewhat oppose," and "strongly oppose."

^b*Northeast:* Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. *Midwest:* Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. *South:* Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. *West:* Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

^cCurrent cigarette smokers are defined as respondents who smoked ≥ 100 cigarettes in their lifetime and reported smoking "everyday" or "some days" at the time of the survey. Former cigarette smokers are defined as respondents who smoked ≥ 100 cigarettes in their lifetime and reported smoking "not at all" at the time of the survey. Never cigarette smokers are defined as respondents who reported "no" to smoking ≥ 100 cigarettes in their lifetime.

^dRespondents were asked about the ever or current (past 30-day) use of the following non-cigarette tobacco products: cigars or big cigars; cigarillos; little cigars; chewing tobacco, snuff or dip; electronic cigarettes or e-cigarettes; electronic hookahs, hookah pens, or vape pens; some other electronic vapor product such as electronic cigars or electronic pipes; water pipes; roll-your-own cigarettes; flavored cigars; snus; dissolvable tobacco products. NH, non-Hispanic.

increase the risk of adverse drug events.¹¹⁻¹³ Fortunately, approximately seven in ten cigarette smokers want to quit.¹⁴ Although pharmacies can serve as a conduit for patients to obtain evidence-based cessation support and U.S. Food and Drug Administration–approved medications, the concurrent sale and advertisement of tobacco products might counteract these resources by triggering cravings, stimulating impulse purchases,¹⁵ and hindering smokers' quit attempts.

To reduce pharmacy tobacco sales, states and communities can implement policies prohibiting tobacco product sales in this environment. As of January 1, 2016, a total of 134 municipalities in California and Massachusetts had enacted tobacco-free pharmacy laws.⁵ Implementation of comprehensive tobacco sales prohibitions, including cigarettes and other tobacco products, could help reduce access to tobacco products and exposure to tobacco product advertising, as well as denormalize tobacco use. Initiatives to discontinue tobacco sales could also positively reinforce pharmacy stores' commitment to health care. In addition, by eliminating concurrent tobacco product sales, pharmacies may help bring public awareness to the health consequences of smoking, and provide enhanced clinical management of tobacco-related diseases.^{16,17} Moreover, preliminary evaluation findings suggest such policies do not adversely affect business. For example, in 2014, CVS Caremark rebranded as CVS Health, and became the first national retail pharmacy chain to cease tobacco product

sales. Following policy implementation, CVS reported increased year-over-year net revenues, with positive gains in pharmacy services.¹⁸

Limitations

This study is subject to at least three limitations. First, Summer Styles is an Internet-based survey and may have limited generalizability compared with traditional population-based surveys.¹⁹ Second, data were self-reported, which could result in misreporting of measures such as tobacco use. Third, limited sample size prevented analysis of more nuanced tobacco use categories, including polytobacco use.

Conclusions

A majority of U.S. adults favor prohibiting tobacco sales in retail pharmacy stores. Eliminating tobacco product sales in these settings may reinforce pharmacy stores' efforts to promote wellness, and further cultivate social climates that reduce the desirability, acceptability, and accessibility of tobacco. Prohibiting tobacco sales in pharmacies, along with the implementation of proven population-level tobacco control interventions, could help reduce tobacco-related death and disease.

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Table 2. Adjusted Prevalence Ratios of Favorability Toward Prohibiting Tobacco Product Sales in Retail Pharmacy Stores Among U.S. Adults, 2014^a

Characteristic	n (%)	% (95% CI)	APR (95% CI) ^b
Overall	4,198	66.1 (64.3, 67.8)	
Sex			
Male	2,061 (49.1)	62.2 (59.7, 64.7)	ref
Female	2,137 (50.9)	69.7 (67.3, 72.0)	1.08 (1.03, 1.14)
Age (years)			
≥ 65	922 (22.0)	72.2 (69.0, 75.3)	ref
45–64	1,845 (43.9)	64.8 (62.3, 67.3)	0.94 (0.88, 0.99)
25–44	1,173 (27.9)	63.7 (60.5, 66.9)	0.91 (0.86, 0.98)
18–24	258 (6.1)	66.8 (60.7, 73.0)	0.95 (0.86, 1.06)
Race/ethnicity			
White, NH	3,169 (75.5)	65.5 (63.6, 67.5)	ref
Black, NH	395 (9.4)	64.6 (59.1, 70.2)	1.02 (0.93, 1.12)
Other, NH	228 (5.4)	70.4 (63.3, 77.5)	1.09 (0.99, 1.21)
Hispanic	406 (9.7)	67.3 (62.0, 72.5)	1.07 (0.99, 1.17)
Education			
College degree	1,386 (33.0)	70.1 (67.2, 72.9)	ref
Some college	1,296 (30.9)	64.2 (61.2, 67.3)	0.95 (0.89, 1.02)
High school	1,228 (29.2)	65.7 (62.6, 68.7)	0.99 (0.93, 1.05)
< High school	288 (6.9)	61.7 (55.4, 68.1)	1.00 (0.89, 1.12)
Annual household income			
≥ \$60,000	2,065 (49.2)	69.0 (66.7, 71.4)	ref
\$40,000–\$59,999	757 (18.0)	67.4 (63.5, 71.4)	1.00 (0.94, 1.07)
\$25,000–\$39,999	700 (16.7)	65.8 (61.7, 70.0)	1.00 (0.93, 1.07)
\$15,000–\$24,999	305 (7.3)	65.1 (59.0, 71.2)	1.01 (0.92, 1.12)
< \$15,000	371 (8.8)	48.0 (41.8, 54.2)	0.82 (0.71, 0.94)
U.S. Census region ^c			
Northeast	747 (17.8)	66.7 (62.8, 70.7)	ref
Midwest	1,058 (25.2)	64.6 (61.2, 68.1)	0.99 (0.92, 1.07)
South	1,494 (35.6)	63.9 (61.0, 66.8)	0.96 (0.89, 1.04)
West	899 (21.4)	70.2 (66.7, 73.7)	1.02 (0.94, 1.10)
Cigarette smoking ^d			
Never smoker	2,241 (55.2)	71.8 (69.6, 74.1)	ref
Former smoker	1,233 (30.4)	66.3 (63.3, 69.4)	0.96 (0.90, 1.02)
Current smoker	582 (14.4)	46.5 (41.5, 51.4)	0.73 (0.65, 0.82)
Non-cigarette tobacco products ^e			
Never user	2,263 (54.4)	71.4 (69.2, 73.7)	ref

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Table 2. Adjusted Prevalence Ratios of Favorability Toward Prohibiting Tobacco Product Sales in Retail Pharmacy Stores Among U.S. Adults, 2014^a (continued)

Characteristic	n (%)	% (95% CI)	APR (95% CI) ^b
Former user	1,473 (35.4)	63.2 (60.4, 66.1)	0.93 (0.87, 0.99)
Current user	421 (10.1)	47.8 (42.0, 53.6)	0.80 (0.70, 0.92)

Note: Boldface indicates statistical significance ($p < 0.05$).

^aFavorability defined as a report of “strongly favor” or “somewhat favor” to the question, “Do you favor or oppose banning the sale of all tobacco products in retail pharmacy stores?”

^bAdjusted prevalence ratios were obtained using Poisson Regression model adjusted for all covariates listed in the table.

^cNorthwest: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

^dCurrent cigarette smokers are defined as respondents who smoked ≥ 100 cigarettes in their lifetime and reported smoking “everyday” or “some days” at the time of the survey. Former cigarette smokers are defined as respondents who smoked ≥ 100 cigarettes in their lifetime and reported smoking “not at all” at the time of the survey. Never cigarette smokers are defined as respondents who reported “no” to smoking ≥ 100 cigarettes in their lifetime.

^eRespondents were asked about the ever or current (past 30-day) use of the following non-cigarette tobacco products: cigars or big cigars; cigarillos; little cigars; chewing tobacco, snuff or dip; electronic cigarettes or e-cigarettes; electronic hookahs, hookah pens, or vape pens; some other electronic vapor product such as electronic cigars or electronic pipes; water pipes; roll-your-own cigarettes; flavored cigars; snus; dissolvable tobacco products. APR, adjusted prevalence ratio; NH, non-Hispanic.

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