



HHS Public Access

Author manuscript

Am J Public Health. Author manuscript; available in PMC 2016 October 01.

Published in final edited form as:

Am J Public Health. 2015 October ; 105(10): e60–e67. doi:10.2105/AJPH.2015.302751.

Public Support for Family Smoking Prevention and Tobacco Control Act Point-of-Sale Provisions: Results of a National Study

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Abstract

Objectives—We assessed public and smoker support for enacted and potential point-of-sale (POS) tobacco-control policies under the Family Smoking Prevention and Tobacco Control Act.

Methods—We surveyed a US nationally representative sample of 17 507 respondents (6595 smokers) in January through February 2013, and used linear regression to calculate weighted point estimates and identify factors associated with support for POS policies among adults and smokers.

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Contributors

S. W. Rose designed the study, conducted all analyses, and led the development of the article. All authors provided substantive input and feedback on the study design, data collection instruments, analyses, and interpretation of data, and contributed to the article. S. L. Emery is the principal investigator for the parent study. K. M. Ribisl provided guidance for all aspects of the study.

Note. K. M. Ribisl is a special government employee for the US Food and Drug Administration Center for Tobacco Products and a member of the Tobacco Products Scientific Advisory Committee; the views expressed in this article are those of the authors and not necessarily those of the Food and Drug Administration.

Human Participant Protection

Institutional review boards at the University of Illinois Chicago and the National Cancer Institute approved the parent study. As this study is a secondary data analysis that uses de-identified data, the University of North Carolina at Chapel Hill institutional review board found that this study was not human participant research.

Results—Overall, nonsmokers were more supportive than were smokers. Regardless of smoking status, African Americans, Hispanics, women, and those of older ages were more supportive than White, male, and younger respondents, respectively. Policy support varied by provision. More than 80% of respondents supported minors' access restrictions and more than 45% supported graphic warnings. Support was lowest for plain packaging (23%), black-and-white advertising (26%), and a ban on menthol cigarettes (36%).

Conclusions—Public support for marketing and POS provisions is low relative to other areas of tobacco control. Tobacco-control advocates and the Food and Drug Administration should build on existing levels of public support to promote and maintain evidence-based, but controversial, policy changes in the retail environment.

In 2009, the Family Smoking Prevention and Tobacco Control Act (FSPTCA),¹ enabled the Food and Drug Administration to regulate tobacco products in the United States.² Many provisions affect how tobacco products are sold and marketed in retail stores at the point of sale (POS). Major POS components of the FSPTCA focus on (1) youth access to tobacco, (2) regulating promotion (restricting gifts with purchase, prohibiting free samples), (3) product bans (banning cigarette flavors and a possible menthol ban), (4) advertising and labeling restrictions, and (5) graphic warnings on packs and ads. Some aspects of these regulations are controversial, such as a possible ban on menthol cigarettes.³ Tobacco industry litigation has blocked or delayed implementation of other aspects such as black-and-white text advertising and graphic warnings.⁴

Public policy scholars provide insight into the role of public opinion in shaping tobacco-control policies. First, previous tobacco-control efforts such as efforts to raise federal cigarette excise taxes have met with failure, in part because of lack of public support.⁵ In addition, a recent proposal to ban sales of all tobacco products in Westminster, Massachusetts, generated public backlash and was withdrawn.⁶ Conversely, documenting public support for tobacco-control regulations has helped enact measures such as a tobacco tax increase in Massachusetts,⁷ or initial attempts to assert Food and Drug Administration jurisdiction over tobacco products.⁸ Public support can influence the policy agenda, decision-maker support, policy implementation, and compliance with new policies.^{9–11}

Previous studies have examined public opinions about some POS provisions, notably related to a ban on menthol cigarettes,^{12–14} and graphic warnings.¹⁵ Additional studies have focused on support for potential FSPTCA policies including nicotine reductions^{15,16} and bans on tobacco advertising.¹⁵ Another study examined support among New York City adults for emerging retail strategies such as a tobacco product display ban or limiting retailer licenses.¹⁷ But none, to date, have examined national public support for a wide range of POS provisions proposed or enacted under the FSPTCA. As a consequence, little is known about what characteristics contribute to developing supportive policy attitudes at POS where tobacco is ubiquitous and highly normative.¹⁸

Previous studies have found that non-smokers are more likely to support traditional tobacco-control regulations (e.g., tobacco taxes, indoor smoke-free laws) than are smokers,^{19–21} African Americans are more supportive than Whites,^{15,20,22} and high socioeconomic status (SES) individuals are more supportive than those of low SES.^{22,23} Studies also have found

that policy support may increase following implementation.^{24–26} Policies that have already been implemented may have greater public support than proposed, but not implemented, policies. In conjunction with this, policies that have been implemented may also be the ones with the most preexisting support (i.e., “low-hanging fruit”). For example, in California, which enacted a statewide first in nation workplace smoking ban in 1995, support for smoking restrictions in public venues increased by 17 percentage points, compared with only 11 points in the rest of the nation, over 7 pre- to postban years.²⁷ This type of finding suggests that policy implementation itself may increase support perhaps by spurring norms changes.

We also identified factors associated with support for POS measures among smokers. Preserving “smokers’ rights” has often been used as an argument against new tobacco-control regulations.²⁸ However, smokers are not a monolithic group; some smokers support regulations including advertising and promotion,¹⁹ smoke-free air restrictions,^{24,29} and youth access restrictions.^{19,30} In previous studies, intention to quit has been associated with support for smoke-free environments^{31–33} and advertising restrictions.^{31,32}

Beyond individual factors, support for tobacco-control regulations may vary by jurisdiction. Studies suggest that those who live in jurisdictions with stronger tobacco-control policies (e.g., higher tobacco taxes and extensive indoor smoke-free restrictions) may have stronger antismoking norms and more support for tobacco-control measures.³⁴ Geographic region may also play a countervailing force; those living in tobacco-producing states may demonstrate less support for tobacco-control policies.^{34,35} As a result, statistical models should include state-level associations when one is examining public opinion nationally.

The purpose of this study was to (1) identify which individual policies have the greatest support, (2) examine the overall level of support for POS policies in the FSPTCA among the general public and among smokers, and (3) identify individual respondent and state-level characteristics associated with support in the general population and among smokers.

METHODS

The research team conducted an online survey in January to February 2013 of a nationally representative sample of US adult tobacco users and nonusers. We sampled respondents from a commercial Internet panel (KnowledgePanel, GfK) covering the US population. The KnowledgePanel consists of a large (approximately 55 000) randomly selected sample of adults aged 18 years and older in the United States, who agree to be contacted to conduct Web surveys. The KnowledgePanel uses address-based sampling to cover non-Internet, unlisted telephone, and cell phone-only households based on a sampling frame that covers 97% of US households. It also provides laptops and Internet access to households without them.³⁶

We randomly sampled respondents in a stratified design from 38 consolidated media markets. We oversampled tobacco users to be 50% of the sample to ensure sufficient sample size for this group for rare outcomes in the parent study.³⁷ All respondents completed a demographic profile and tobacco-use status, which we used for statistical weighting. We

supplemented panel respondents in small geographic areas where there were insufficient numbers of tobacco users on the panel by convenience samples of respondents from online ads. Off-panel respondents were quota-matched to the probability sample on the basis of media market, demographics, and tobacco-use status. For participating in the panel, panel respondents received monthly incentive points valued at approximately \$4 to \$6 of cash or goods. For participating in this survey, respondents were entered into a sweepstakes with an additional cash or prize reward. Off-panel respondents received incentive points worth up to \$2 for completing this survey.

We contacted 34 097 panel respondents, of whom 20 907 completed a screening questionnaire (61.3%). Of these, we identified 13 531 eligible respondents based on being aged 18 years or older, geographic location of residence based on the stratified sampling design, and tobacco-use status; 13 144 completed the survey (97.1% of eligible panel respondents). We included an additional 4363 off-panel respondents for a total sample size of 17 507. For this analysis, we limited respondents to those in the 50 US states and the District of Columbia. Additional details of the sample are reported elsewhere.³⁷

Measures

Support for point-of-sale provisions—We measured support for POS provisions as a 10-item scale, derived from existing surveys. We drew or adapted these items from the Smoking Policy Inventory,²² the Massachusetts Adult Tobacco Survey 2000,³⁸ California Tobacco Retail Policy Survey,³⁹ the Community Intervention Trial for Smoking Cessation,²⁹ Social Climate Survey of Tobacco Control,¹² and the International Tobacco Control Survey 2009.⁴⁰ We examined 5 types of POS provisions each with 2 items:

1. fines for merchants who sell to youths, increased fines for repeat sales (youth access);
2. black-and-white advertising, plain packs (advertising and labeling);
3. graphic warnings on ads and packs (warnings);
4. bans on branded nontobacco products, gifts with purchase (promotion); and
5. bans on flavored and menthol cigarettes (product).

We assessed agreement on a 5-point scale from strongly disagree to strongly agree. Higher numbers represented stronger support for policy. We conducted a confirmatory factor analysis (root mean square error of approximation=0.031; 90% confidence interval [CI]=0.029, 0.033; comparative fit index=0.98; Tucker–Lewis Index=0.98) to determine that these items formed a unidimensional scale. These fit statistics, comparative fit index and Tucker–Lewis Index of 0.95 or higher and root mean square error of approximation lower than 0.06, showed good model fit based on established cut-off values.⁴¹ The 2 items within each domain covaried. For this analysis, we averaged across the 10 provisions and our scale had high internal consistency ($\alpha=0.91$).

Demographic characteristics—We included 3 demographic characteristics as independent variables in the study: smoking status, race/ethnicity, and education status. Smoking status was a dichotomous variable; current smokers smoked at least 100 cigarettes

in their lifetime and currently smoked every day or some days; all others were nonsmokers (reference). Respondent race/ethnicity included non-Hispanic White (reference), non-Hispanic African American, Hispanic, non-Hispanic other race, and non-Hispanic 2 or more races. Respondents' education level comprised 4 levels: less than high school (reference), high school or equivalent, some college, and bachelor's degree or higher. We anticipated that as with other tobacco policy areas, we would see higher support among nonsmokers than among smokers,^{19–21} among African Americans than among Whites,^{15,20,22} and among respondents with higher education than among those with lower education level.^{22,23}

Individual covariates—Additional covariates included were associated with higher support for tobacco-control policies in earlier studies: older age,²² female gender,²² and higher household income.⁴² In analyses of smokers, we controlled for intention to quit^{31,43} and quit attempts,⁴² which have been associated with increased policy support. Smokers reported an intention to quit smoking in the next 6 months, or not (reference). Smokers reported making a quit attempt in the past year, or not (reference).

State policy covariates—As living with stronger tobacco-control policies could be associated with stronger support for policies³⁴ and living in a tobacco-producing state could be associated with negative attitudes,^{34,35} we additionally controlled for 4 state-level factors: (1) state compliance with youth access sales restrictions, (2) state cigarette tax in cents, (3) strength of state smoke-free policy in 4 venues (bars, restaurants, public workplaces, private workplaces), and (4) tobacco-producing state. We used youth access rates from Synar compliance checks in 2012.⁴⁴ We linked strength of smoke-free air policies in each venue from Americans for Nonsmokers' Rights Foundation ordinance data coded on a scale from 0 (no smoking restriction) to 3 (ban at all times with no exceptions).⁴⁵ We summed items across venues to create a smoke-free air index. All state-level tobacco-control variables were mean centered. We created a dichotomous variable of the 6 top tobacco-producing states (North Carolina, Kentucky, Virginia, Tennessee, South Carolina, and Georgia) accounting for 94% of tobacco-production acreage in the United States.⁴⁶

Data Analysis

We examined weighted frequencies with SAS version 9.3 (SAS Institute, Cary, NC) to generate sample characteristics and point estimates of support for individual POS provisions. In separate analyses of the total sample and current smokers, we conducted linear regression with SAS survey procedures with the dependent variable as policy support measured as the average of 10 items.

We included design-based population weights corresponding to the national US population and accounted for stratification in the sampling design. GfK generated the weights for the complex sampling design accounting for oversampling of tobacco users. We included all demographic characteristics in adjusted analyses regardless of significance in unadjusted analyses. We included control variables at the state level if $P < .25$ in unadjusted analyses.⁴⁷

RESULTS

Table 1 shows the weighted characteristics of the total sample and smokers only. The proportion of smokers in the weighted sample was comparable with the population estimate of 19% of US adults.⁴⁸ Nearly 30% of current smokers intended to quit in the next 6 months and 42% had made a quit attempt in the past year.

Regarding state-level characteristics (Table 2), on average, smokers were more likely than nonsmokers to live in states with lower cigarette taxes (marginally significant $P=.05$) and weaker smoke-free indoor air regulations ($P=.04$). Relatively higher proportions of smokers lived in tobacco-producing states ($\chi^2=5.6$; $df=1$; $P=.02$). Synar compliance rates did not differ by smoking status.

Compared with nonsmokers, significantly fewer smokers supported each provision ($P<.001$; Figure 1). Smokers and nonsmokers, however, showed similar patterns of support. The least amount of support was for plain packaging (23% of the total sample) and black- and-white ads (26%), and the most was for youth access provisions (more than 80%). At least 45% of the sample supported graphic warnings on cigarette packs and advertisements. A little more than one third supported a ban on menthol cigarettes (36%). Only 11% of the sample agreed with all 10 provisions (data not shown). Among those who did not agree, a larger proportion reported neutral rather than disapproving views.

In the total sample, the mean level of support for POS policies (3.5) was higher than the “neutral” value of 3. This indicates, on average, a slightly positive opinion toward these policies. In the total sample, shown in Table 3, non-smokers reported significantly higher levels of support for POS policy compared with smokers ($b=0.53$; 95% CI=0.48, 0.58; $P<.001$) and women expressed more support than did men ($b=0.19$; 95% CI=0.15, 0.23; $P<.001$). African Americans ($b=0.09$; 95% CI=0.01, 0.16; $P=.02$) and Hispanics ($b=0.16$; 95% CI=0.09, 0.23; $P<.001$) reported greater support than did Whites. Support also increased with age; for every 10 years of age, level of support increased by 0.07 points ($b=0.07$; 95% CI=0.06, 0.08; $P<.001$). Support did not differ by educational status. Those of high income ($> \$75\,000$), however, had less support than those with income less than \$25 000 ($b=-0.10$; 95% CI=-0.18, -0.03; $P=.004$). No state variable was significant when we accounted for individual factors.

Additional analyses examining only panel respondents found the same relationships, except that in the panel sample, level of support did not differ for African Americans compared with Whites. However, results were in the same direction ($b=0.05$; 95% CI=-0.06, 0.17; $P=.17$). This is likely attributable to lower sample sizes of African American respondents in the panel sample and reduced power to detect a significant difference. In addition, we conducted sensitivity analyses of the full sample with control for panel membership. There were no differences in level of support between convenience sample and panel respondents ($b=-0.01$; 95% CI=-0.07, 0.44; $P=.66$). All other results were the same (analyses not shown).

Demographic patterns of support were similar between smokers and the total sample. Among smokers, age was positively associated with support ($b=0.03$; 95% CI=0.01, 0.05; $P=.005$) and women reported higher support than did men ($b=0.07$; 95% CI=0.01, 0.13; $P=.$

02), as shown in Table 3. In addition, African American smokers ($b=0.21$; 95% CI=0.11, 0.30; $P<.001$), Hispanic smokers ($b=0.25$; 95% CI=0.13, 0.36; $P<.001$), and smokers of other races ($b=0.30$; 95% CI=0.18, 0.43; $P < .001$) reported higher support than did White smokers. Among smokers, neither education nor income was a significant correlate of support. Instead, those with intention to quit smoking in the next 6 months ($b=0.27$; 95% CI=0.20, 0.33; $P<.001$) and those who had made a quit attempt in the past year ($b=0.23$; 95% CI=0.17, 0.30; $P<.001$) reported higher support for POS policy. Among smokers, state policy variables were not significantly associated with POS support.

Additional sensitivity analyses among smokers examined only panel respondents and found the same patterns of results, except that women did not have significantly different levels of support compared with men ($b=0.09$; 95% CI=-0.01, 0.19; $P=.07$). Also, among smokers, convenience sample respondents did not differ from the panel respondents regarding level of support in adjusted analyses ($b=0.02$; 95% CI=-0.04, 0.08; $P=.53$; analyses not shown).

DISCUSSION

This study suggests that, nationally, other than youth access policies that have large majority support among both nonsmokers and smokers, moderate to poor levels of support—less than 50%—exist for a variety of other POS policies affecting advertising, product bans, promotion restrictions, and graphic warnings. This compares unfavorably with other areas of tobacco control, notably smoke-free air policies,^{49,50} which have capitalized on social norms changes.⁵¹ Evaluations of smoke-free air policies in bars and restaurants show that such efforts have shifted social norms, which further support compliance with the policy over time.^{33,52} For example, from 1992 to 2007, national public support for bans on smoking in restaurants increased nearly 20 percentage points to 64% corresponding to substantial increases in indoor smoking bans and public awareness of harms of secondhand smoke.⁵³

We found the lowest average support for advertising restrictions such as plain packs and black-and-white advertisements. These provisions may be unfamiliar to the US public. As plain packs were implemented in Australia, research found higher support for the policy among smokers using plain packs compared with those still using branded packs.⁵⁴ Black-and-white ads were ruled unconstitutional on First Amendment grounds,⁵⁵ and are unlikely to be implemented in the United States. Unsurprisingly, support for all policies was weaker among smokers than nonsmokers, although some smoker support was found for each provision.

Support for POS policies nationally was also lower than support for emerging retail policy options among New York City adults.¹⁷ In that study, 57% of respondents favored a display ban, 53% favored prohibiting price promotions, and 67% favored raising the minimum age for purchase from 18 to 21 years. New York State has a strong tobacco-control climate with the highest tobacco tax in the nation,⁵⁶ a comprehensive smoke-free law since 2003,⁵⁷ and a statewide media campaign about the dangers of retail tobacco marketing.⁵⁸ Perhaps stronger support for POS policies is possible in the context of an explicit tobacco-control focus on POS.⁵⁹

In addition, overall support for POS policies followed demographic trends found in support for other tobacco-control policies, such as smoke-free indoor air and tobacco tax.^{19,22} Nonsmokers reported greater support for POS policies than did smokers. African Americans and Hispanics in the total and smoker sample were more supportive of POS policies than were Whites. African American smokers have shown awareness of the marketing of menthol cigarettes to the African American community, perhaps raising support for policies that could reduce the impact of tobacco in their community.^{60,61}

However, unlike previous studies that found SES differences,^{22,23} we did not find differences in support by education level. We found differences in income only in the total sample, but those differences were not evident among smokers. In the total sample, only the highest-income respondents were significantly less supportive of POS policies than those of the lowest income levels, perhaps suggesting that retail policies were less salient for the highest-income group who may be more frequent online shoppers.⁶² Among smokers, intention to quit and recent quit attempts had a stronger effect on level of support than did most demographic factors, although in a cross-sectional study design we cannot assess whether interest in quitting promotes support for policy or whether those supporting policy are more interested in quitting.

Tobacco-control state-level variables, particularly state cigarette tax and living in a tobacco-producing state, may have a small influence on support in unadjusted analyses. Dixon et al. found higher support for antitobacco policies including restrictions in public smoking and bans on cigarette advertising in a nontobacco state versus a tobacco-producing state.⁶³ Similarly, a study of African Americans found that those in other regions had more than 2 times the level of support for a tobacco tax increase compared with those in Southern tobacco-growing states.⁶⁴ However, in this study, individual-level factors were more strongly associated with support for POS provisions than were state factors.

Policy scholars suggest that changes in public support are largely congruent with changes in public policy across a variety of policy topics, but that policy enactment is likely more common in policy arenas with at least majority support.⁶⁵ In the tobacco policy arena, previous efforts have found that generating public support is a useful strategy by tobacco-control advocates to create social norms change as a counter to interest group politics practiced by the tobacco industry.^{51,66} Message framing and focus on policy efforts at the local and state level are also valuable approaches to bolster public support.^{67,68} Our findings suggest that tobacco-control advocates seeking to implement new and maintain existing POS policies at federal, state, and local levels may need to enhance the level of public support for these policies through social norms campaigns specifically aimed at POS.⁵⁹ Such an approach can enhance the climate for compliance with tobacco-control regulations at POS nationally.⁵¹

Strengths and Limitations

The strengths of this study included the large sample size of more than 17 000 and high response rate among a nationally representative sample of US adults. It also includes a large number of respondents from subpopulations. For instance, this sample includes more than 1300 African Americans and 1200 Hispanic respondents, including approximately 500

African American and Hispanic smokers. It also covers a broader range of tobacco-control provisions affecting POS than found in other studies.^{12,13,22} Finally, it can provide national estimates of support for POS policies with adjustment for geographic variation and state policy factors.

As an online survey, the sample may not fully represent those of low SES, low literacy, or homeless populations. To overcome these limitations, the KnowledgePanel uses address-based sampling, oversamples cell phone-only households, and provides laptops and Internet access to households without them.

Also, we were unable to control for political ideology, which may influence support for policy.⁶⁹ However, smokers and nonsmokers may have similar party affiliation and ideological profiles.⁷⁰ A study of support for a menthol ban found that, in the total population, ideology from liberal to conservative did not significantly predict support¹³; thus, controlling for this variable may not have substantially changed the results.

Conclusions

These findings suggest that social norms about retail tobacco sales and marketing policies have not changed to the extent they have for other areas of tobacco control. For instance, support for smoke-free indoor laws has increased over time⁴⁹ and commonly generates majority to near-universal support among both smokers and nonsmokers.⁵⁰ This is likely based both on changing norms and personal experience with the benefits of smoke-free environments. In this study, more respondents had neutral, versus disapproving, views even for policies with the lowest levels of support. This study found differences in support among subgroups with higher support among non-smokers, African Americans and Hispanics, women, and those of older age, and among smokers with quit intentions and past quit attempts. Tobacco-control advocates and the Food and Drug Administration should build on existing public support and promote positive attitudes toward these policies to promote and maintain controversial policy changes in the retail environment. Such efforts would also shift social norms and help counteract the effects of tobacco sales and marketing at POS.

Acknowledgments

This project was funded by National Cancer Institute-funded grants U01 CA154254 (Emery, PI); U01 CA154281 (Ribisl multi-PI), and the Cancer Control Education Program R25 CA57726.

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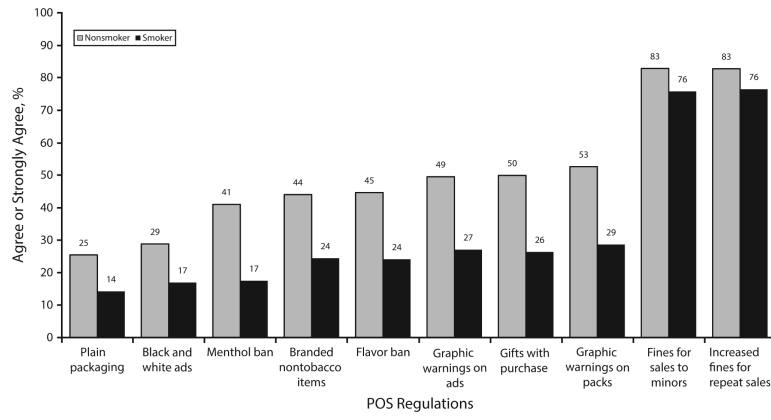


FIGURE 1. Support for point-of-sale (POS) provisions by smoking status: KnowledgePanel Internet survey, United States, 2013

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TABLE 1

Weighted Characteristics of All Survey Respondents and Smokers Only: KnowledgePanel Internet Survey, United States, 2013

Characteristic	Total Sample (n = 17 507), Weighted	Smokers Only (n = 6595), Weighted
Individual		
Smoking status (n = 17 491), % (95% CI)		
Nonsmoker	79.3 (78.5, 80.0)	...
Current smoker	20.7 (20.0, 21.5)	...
Race/ethnicity, % (95% CI)		
Non-Hispanic White	68.1 (66.9, 69.3)	68.7 (66.7, 70.6)
Non-Hispanic African American	11.5 (10.7, 12.4)	12.6 (11.2, 14.1)
Non-Hispanic other	5.5 (4.8, 6.1)	4.6 (3.8, 5.5)
Non-Hispanic 2 races	1.4 (1.2, 1.6)	1.7 (1.3, 2.0)
Hispanic	13.5 (12.6, 14.4)	12.4 (10.9, 14.0)
Education, % (95% CI)		
< high school	6.8 (6.1, 7.5)	9.9 (8.5, 11.2)
High school	36.1 (34.9, 37.3)	42.9 (40.9, 44.8)
Some college	31.2 (30.1, 32.2)	34.0 (32.3, 35.8)
bachelor's degree	25.9 (25.0, 26.9)	13.2 (12.2, 14.2)
Gender, % (95% CI)		
Male	48.0 (46.8, 49.2)	48.8 (46.9, 50.8)
Female	52.0 (50.8, 53.2)	51.2 (49.2, 53.1)
Household income, \$, % (95% CI)		
< 25 000	14.1 (13.3, 15.0)	22.8 (21.2, 24.4)
25 000–49 999	28.2 (27.2, 29.2)	32.8 (31.0, 34.6)
50 000–74 999	19.6 (18.7, 20.5)	19.1 (17.5, 20.6)
75 000	38.0 (36.9, 39.2)	25.4 (23.6, 27.1)
Age, y, mean (95% CI)	46.9 (46.5, 47.3)	44.2 (43.7, 44.8)
Smoker		
Intention to quit, % (95% CI)		
Within 6 mo		29.9 (28.1, 31.6)
Not within 6 mo		70.1 (68.4, 71.9)
Quit attempt in past year, % (95% CI)		
Yes		41.6 (39.7, 43.5)
No		58.4 (56.5, 60.3)

Note. CI = confidence interval.

TABLE 2

State-Level Mean Characteristics of Nonsmoker and Smoker Samples: KnowledgePanel Internet Survey, United States, 2013

State-Level Characteristics	Nonsmoker Only, Weighted	Smoker Only, Weighted	<i>P</i> ^a
Smoke-free air policy index, mean (95% CI)	2.16 (2.13, 2.18)	2.11 (2.07, 2.14)	.04
Youth access, %, mean (95% CI)	9.19 (9.09, 9.28)	9.32 (9.18, 9.46)	.17
State excise tax, \$, mean (95% CI)	1.50 (1.48, 1.53)	1.46 (1.42, 1.49)	.05
Tobacco-producing state, % (95% CI)			
Yes	13.51 (12.68, 14.34)	15.54 (14.24, 16.85)	.02
No	86.49 (85.66, 87.32)	84.46 (83.15, 85.76)	

Note. CI = confidence interval.

^aBased on *t* test or Rao–Scott χ^2 test.

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Point Estimates, Unadjusted, and Adjusted Regression Coefficients for Scale Score of Support for Point of Sale Regulations in Total Sample: KnowledgePanel Internet Survey, United States, 2013

TABLE 3

Characteristic (n = 17 399)	Total Sample			Smokers Only		
	Weighted Support Mean (95% CI)	Unadjusted b (95% CI)	Adjusted b (95% CI)	Weighted Support, Mean (95% CI)	Unadjusted b (95% CI)	Adjusted b (95% CI)
Smoking status						
Nonsmoker	3.57 (3.55, 3.60)	0.55*** (0.51, 0.58)	0.53*** (0.48, 0.57)			
Current smoker	3.03 (3.00, 3.06)	Ref	Ref			
Race/ethnicity						
Non-Hispanic White	3.43 (3.41, 3.46)	Ref	Ref	2.95 (2.92, 2.99)	Ref	Ref
Non-Hispanic African American	3.52 (3.45, 3.59)	0.09* (0.01, 0.16)	0.09* (0.01, 0.16)	3.21 (3.12, 3.29)	0.25*** (0.16, 0.35)	0.21*** (0.11, 0.30)
Non-Hispanic other	3.46 (3.36, 3.56)	0.03 (-0.08, 0.13)	0.08 (-0.02, 0.19)	3.26 (3.13, 3.39)	0.31*** (0.17, 0.44)	0.30*** (0.18, 0.43)
Non-Hispanic 2 races	3.30 (3.15, 3.45)	-0.13 (-0.28, 0.02)	-0.08 (-0.22, 0.06)	2.90 (2.74, 3.06)	-0.05 (-0.21, 0.11)	-0.01 (-0.17, 0.15)
Hispanic	3.54 (3.48, 3.61)	0.11** (0.04, 0.18)	0.16*** (0.09, 0.23)	3.18 (3.07, 3.29)	0.22*** (0.11, 0.34)	0.25*** (0.13, 0.36)
Education						
< high school	3.45 (3.35, 3.55)	Ref	Ref	3.01 (2.89, 3.13)	Ref	Ref
High school	3.47 (3.43, 3.50)	0.01 (-0.08, 0.11)	-0.01 (-0.11, 0.09)	3.02 (2.98, 3.07)	0.02 (-0.11, 0.14)	0.05 (-0.08, 0.17)
Some college	3.43 (3.39, 3.46)	-0.02 (-0.15, 0.10)	-0.01 (-0.11, 0.09)	3.01 (2.97, 3.06)	0.00 (-0.12, 0.13)	0.02 (-0.11, 0.15)
bachelor's degree	3.48 (3.45, 3.52)	0.03 (-0.06, 0.13)	0.01 (-0.09, 0.12)	3.08 (3.02, 3.14)	0.07 (-0.06, 0.21)	0.07 (-0.07, 0.21)
Gender						
Female	3.56 (3.53, 3.58)	0.21*** (0.16, 0.25)	0.19*** (0.15, 0.23)	3.05 (3.02, 3.09)	0.06 (-0.00, 0.12)	0.07* (0.01, 0.13)
Male	3.35 (3.32, 3.38)	Ref	Ref	3.00 (2.95, 3.05)	Ref	Ref
Household income, \$						
< 25 000	3.43 (3.38, 3.49)	Ref	Ref	3.03 (2.98, 3.09)	Ref	Ref
25 000-49 999	3.46 (3.42, 3.50)	0.03 (-0.04, 0.10)	-0.04 (-0.11, 0.02)	3.00 (2.95, 3.05)	-0.03 (-0.10, 0.04)	-0.02 (-0.09, 0.06)
50 000-74 999	3.51 (3.46, 3.55)	0.07 (-0.00, 0.15)	-0.01 (-0.08, 0.07)	3.06 (2.96, 3.13)	0.03 (-0.07, 0.12)	0.04 (-0.05, 0.13)
75 000	3.43 (3.40, 3.47)	0.00 (-0.07, 0.07)	-0.10*** (-0.18, -0.03)	3.02 (2.96, 3.09)	-0.01 (-0.09, 0.08)	-0.03 (-0.13, 0.06)
Age, 10 y						
Intention to quit						
		0.08*** (0.06, 0.09)	0.07*** (0.06, 0.08)		0.01 (-0.01, 0.03)	0.03** (0.01, 0.05)

Characteristic (n = 17 399)	Total Sample			Smokers Only		
	Weighted Support Mean (95% CI)	Unadjusted b (95% CI)	Adjusted b (95% CI)	Weighted Support Mean (95% CI)	Unadjusted b (95% CI)	Adjusted b (95% CI)
Next 6 mo				3.28 (3.23, 3.34)	0.37*** (0.31, 0.44)	0.27*** (0.20, 0.33)
Not in the next 6 mo				2.91 (2.88, 2.95)	Ref	Ref
Quit attempt in past year						
Yes				3.21 (3.16, 3.26)	0.33*** (0.26, 0.39)	0.23*** (0.17, 0.30)
No				2.89 (2.85, 2.92)	Ref	Ref
			State level			
Smoke-free air policy		0.02 (-0.00, 0.04)	0.01 (-0.02, 0.03)		0.00 (-0.03, 0.03)	0.01 (-0.03, 0.04)
Youth access policy		0.00 (-0.01, 0.00)	0.00 (-0.01, 0.01)		0.00 (-0.01, 0.01)	0.00 (-0.01, 0.01)
Excise tax, \$		0.02* (0.00, 0.04)	0.01 (-0.01, 0.04)		0.01 (-0.01, 0.04)	0.01 (-0.03, 0.04)
Tobacco-producing state						
No	3.47 (3.44, 3.49)	0.07* (0.01, 0.13)	-0.03 (-0.04, 0.10)	3.03 (2.99, 3.07)	0.02 (-0.06, 0.09)	-0.02 (-0.11, 0.06)
Yes	3.40 (3.34, 3.45)	Ref	Ref	3.01 (2.96, 3.07)	Ref	Ref

Note. CI = confidence interval.

* $P < .05$;

** $P < .01$;

*** $P < .001$.