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Smokefree Home- and Vehicle Policies among Community College Smokers

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Abstract

Background—Personal smokefree policies (home and vehicle) reduce secondhand smoke exposure, improve health, and increase quitting among smokers. Overall, 83.0% and 78.1% of Americans report smokefree homes and vehicles, respectively. However, little is known about such policies among 2-year community college (CC) students, who represent a large, diverse population with higher smoking rates and less negative attitudes towards smoking than 4-year college students.

Methods—Prevalence of, and factors associated with, personal smokefree policies were examined for 2475 CC smokers enrolled in a national trial of web assisted tobacco intervention.

Results—Few students had smokefree home policies (20.7%), smokefree vehicles (17.0%), both smokefree home and vehicle policy (4.2%), or any policy (home or vehicle; 31.2%). In logistic regression models, having children was associated with a smokefree home or any policy but not with a smokefree vehicle, and among subjects who had children, only 20% reported a smokefree home, and only 15% had a smokefree vehicle. In addition, not living with other smokers, living with parents or roommates/siblings (vs. alone), smoking later than 30 minutes after awakening, believing that smoking affects the health of others, and confidence in quitting were associated with presence of a smokefree home or any policy; no variables were significantly associated with presence of a smokefree vehicle.

Conclusions—CC students represent a priority population for intervention regarding smokefree homes and vehicles. Such intervention can decrease exposure of others, including children, and potentially increase the likelihood of quitting in this high risk population.

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Keywords

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INTRODUCTION

Smokefree home- and car policies significantly reduce secondhand smoke exposure and associated health consequences (USDHHS, 2006). Further, presence of smokefree homes is associated with higher quit rates among tobacco users (Gilpin, White, Farkas & Pierce, 1999; Hyland, et al., 2009; Lee & Kahende, 2007; Mills, Messer, Gilpin & Pierce, 2009) and possibly with decreased use of alternative tobacco products (Zhang, Martinez-Donate, Kuo & Piper, 2016). Prevalence of personal smokefree policies has increased over the past decades (CDC, 2014; Cheng, Okechukwu, McMillen & Glantz, 2015), with recent reports indicating that 83.0 % of United States households have smokefree home policies (CDC, 2014) and 78.1% have smokefree vehicle policies (Kruger, Jama, Homa, Babb & King, 2015).

Despite this progress, disparities exist among various subgroups. Smokers are consistently less likely to have smokefree homes (CDC, 2014; Cheng, Okechukwu, McMillen & Glantz, 2015; Dozier et al., 2014; King, Dube & Homa, 2013; Kruger et al., 2015) and cars (Cheng, et al., 2015; Kruger et al., 2015) relative to nonsmokers. For example, in 2012–2013, among combustible tobacco users, only about half (53.7%) reported smokefree homes and about one-third (34.2%) reported smokefree vehicles Kruger, et al., 2015). Presence of a young child in the home may attenuate this disparity (Berg, Lessard, et al., 2011; Nabi-Burza, et al., 2012; Ossip, et al., 2013), though at least one study found that presence of children was not associated with smokefree vehicles (Cheng, et al., 2015). Lower rates of smokefree home and/or vehicle policies have also been found for younger adults (ages 18–24; King, et al., 2013; Cheng, et al., 2015) relative to older groups, those with lower (vs. higher) education levels (Cheng, et al., 2015; King, et al., 2013; Kruger, et al., 2015), and those of lower (vs. higher) socioeconomic status (King, Hyland, Borland, McNeill & Cummings, 2011).

Approximately 20.4 million Americans were enrolled in college in 2013 (US Department of Education, 2016), with most (73%) in the 18–24 age range (US Department of Education, 2014), making this an important target population for addressing secondhand smoke exposure and personal smoking rules. Within this group, 2-year college (“community college,” (CC)) students may be a particularly high risk population for not having personal smokefree policies. CC students comprise 42% (approximately 7 million) of all undergraduate students and represent a large population of minority, first-generation, low-income students (Kena, et al. 2015; Ma & Baum, 2016). CC students are about one third to two times (1.36–1.96) more likely to smoke relative to 4-year college students (Berg, An, et

al. 2011; CDC, 2016; Lenk, Rode, Fabian, Bernat, Klein & Forster, 2012; Sanem, Berg, An, Kirch & Lust, 2009; VanKim, Nelson, Ehlinger, Lust & Story, 2012;), report less negative attitudes about smoking (Berg, An, et al., 2011), and are less supportive of smokefree policies (Berg, Lessard, et al., 2011). They typically do not live on campus (VanKim, et al., 2012), and thus their home smoking policies are not directly impacted by smokefree campus residence rules.

Although CC students are an important target population for tobacco use and personal smokefree policies, they are an understudied population (Berg, An, et al., 2011; Hasman, Berryman & McIntosh, 2013; Prokhorov, et al., 2008), and most research has focused on 4-year college students. The current report provides data on prevalence of personal smokefree policies among a large sample of CC student smokers, and examines factors associated with presence of smokefree home and car policies.

METHODS

Participants

Subjects were 2475 CC students who consented to and completed a baseline survey for a trial of web assisted tobacco interventions (WATI). Eligibility criteria for the trial were: ≥ 18 years old, enrolled either part time (1–11 credits) or full time (≥12 credits) in a community college, smoke ≥5 cigarettes per week, and plan to quit within the next 3 months. In addition, as in our prior trials, subjects who quit smoking within 7 days of completing the baseline survey were included if they met all other criteria, as they may have quit either during the enrollment process or in anticipation of joining. Finally, to qualify for the current analyses, subjects were required to have answered the primary outcome survey items on smokefree home and vehicle policies. Subjects with missing observations for vehicle (n=194), indoor smoking, (n=7), home smokers area (n=9), and type of home specified as other (n=11) were excluded (final N=2475/2696).

Procedure

Subjects were recruited through CCs, initially in New York State (75.4% of sample; 74.4% of whom were from outside of New York City area), and later expanded to a total of 23 states nationally (n=1–334 subjects/state). Recruitment channels included CC emails, courseware postings, and other on-campus electronic postings, printed materials (e.g., flyers with tear-offs and QR codes, posters, table tent cards), face to face project presence on campuses (e.g., tables at health fairs), engagement with on-campus project “champions,” and a small number of earned or paid media events. Recruitment details are reported separately (McIntosh, et al., in press).

Potential participants entered the study through a link to an electronic screening, consent and survey application using REDCap®. Those who met eligibility criteria based on the screening were linked to a consent form to digitally record consent, and then entered the baseline survey. Potential participants who did not qualify were referred to other resources. All procedures were approved by the Institutional Review Board (IRB) at the University of Rochester and by individual CC IRBs where required by the CC.

Measures

Demographic, tobacco use and personal smokefree policy data were drawn from the screener and baseline survey, based on prior literature and conceptual relationship with personal smokefree policy outcomes.

Demographic Items—Demographic items included age (18–24 years, ≥25 years), sex (male, female), race (white, other), ethnicity (Hispanic, non-Hispanic), marital status (married/living with domestic partner, other), parental status (have ≥ 1 child, no children), living arrangements (live alone, with own family, with parents, with roommates or siblings), type of home (multi-unit (attached home, apartment, dorm), detached home/mobile home), student status (full time (1–11 credits), part time (≥ 12 credits), and veteran status (yes, no).

Tobacco Use Items—Tobacco use items included daily smoker (yes, no), past 30 day ecigarette use (yes, no), first cigarette of the day (≤30 minutes, >30 minutes), presence of other home smokers (*"Are there smokers living with you?":* yes, no), belief that smoking affects the health of others ("*My smoking can affect the health of others":* agree/strongly agree, disagree/strongly disagree/unsure), and self-efficacy for quitting (*"How confident are you that you will be able to stop smoking completely this time? Rate this on a scale of 1 to 10, with 1 being 'not at all confident' and 10 being 'extremely confident'"*).

Personal Smokefree Policies—A smokefree home policy was defined as no smoking is allowed and no one actually smokes in the home (Ossip, et al. 2013): *"Please tell us which best describes how cigarette smoking is handled in your home (home includes porches and balconies)" = "No one is allowed to smoke anywhere" vs. all other ("Smoking is permitted in some places or at some times," "Smoking is permitted anywhere," "Don't know") + "How often does anyone smoke inside your home?" = "Never" vs. all other ("Daily," "Weekly,", "Monthly,", "Less than monthly," "Don't know"). Smokefree vehicle was defined as have a vehicle + no smoking is allowed: "Please tell us which best describes how cigarette smoking is handled in your car" = "No one is allowed to smoke in my car" vs. all other ("Special guests are allowed to smoke in my car," "People are allowed to smoke in my car only if the windows are open," "People are allowed to smoke in my car at any time," "Don't know").*

In addition, open-ended responses to the question, *"What do you think might make it difficult for you to quit at this time"* were examined for all references to personal smokefree policy content to provide qualitative examples of students' experiences.

Data Analysis

The primary outcomes were student report of having a smokefree home policy (total sample, N=2475), having a smokefree vehicle policy (analyses run only for students who reported having a vehicle; N=2109, 85.2% of sample), and having any personal smokefree policy (smokefree home or smokefree vehicle; total sample, N=2475). Presence of smokefree home and car was reported descriptively but not modeled because of the relatively small sample reporting both (N=89). Univariate analyses were conducted to provide descriptive data for the total sample (%, mean/standard deviation), followed by bivariate analyses (chi squares

and t-tests) to examine the relationship of individual variables to the three outcomes (smokefree home, smokefree vehicle, any personal smokefree policy). Variables that significantly differed between presence or absence of a personal smokefree policy for each of the outcomes at p≤0.10 were considered as candidate variables for multivariable analyses. In addition, the models a priori included parental status (having ≥1 child vs. no children), based on prior work by our group and others (Ossip, et al., 2013; Nabi-Burza, et al., 2012; Berg, Lessard, et al., 2011), and state in which subject attended a CC (defined as either New York State (NYS; N=1875) vs. all other or NYS, two other states with the largest number of subjects (Illinois, N=334, Kentucky, N=108), and all other (n=1–41/state). Multicollinearity was tested by the variance inflation factor (VIF range 1.02–1.5; no multicollinearity observed). Three final multivariable models were run using full model logistic regressions, one for each outcome, entering a uniform set of independent variables for all analyses. To preserve the number of subjects in analyses, a "not applicable" (NA) category was created for variables with ≥10 missing values (for NA, parental status, n=166; living arrangements, n=158; sex, n=36; smoking, n=76). Data were analyzed using SAS® Version 9.3.

RESULTS

Table 1 presents subject characteristics for the entire sample. Overall, subjects were nearly equally split between traditional (<25 years) and nontraditional (≥25 years) college age groups, about two-thirds were women (64.7%), 29.5% were non-white, 11.3% were Hispanic, and 39.7% reported having one or more children. Most smoked daily (92.5%) and within 30 minutes of awakening (64.7%), nearly one-third used eCigarettes (30.9%), about half (51.9%) reported other household smokers, most agreed that smoking affects the health of others (90.8%), and subjects overall were only somewhat confident about quitting (mean = 6.68±2.07/10 rating).

Prevalence of personal smokefree policies was low (see Table 1). Only about one-fifth (20.7%) reported having a smokefree home, 17.0% a smokefree vehicle, and very few (4.2%) reported having both a smokefree home and a smokefree vehicle (among subjects who owned a vehicle). About one-third (31.2%) reported having any personal smokefree policy, defined as reporting a smokefree home *or* a smokefree vehicle.

Table 2 presents results of bivariate analyses of differences between presence and absence of a personal smokefree policy using each of the three outcomes (home, vehicle, any). Higher confidence in quitting was significantly associated with presence of personal smokefree policies across all three outcomes. In addition, younger age, male gender, nonwhite race, Hispanic ethnicity, not living alone, non-daily smoking, eCigarette use, smoking more than 30 minutes after awakening, and absence of other home smokers were associated with presence of a home policy. Non-white race, Hispanic ethnicity, not living alone, non-daily smoking, eCigarette use, smoking more than 30 minutes after awakening, and absence of other home smokers were significantly associated with any personal smokefree policy. No variables other than confidence were significantly associated with presence of a smokefree vehicle policy (p<0.05 or less for all comparisons). This total set of variables, along with those with p<0.10 and state in which subject attended a CC, were entered into the multivariable models.

Table 3 shows results of the multivariable logistic regression models, defining state as New York State vs. Non-New York State (results for the multi-state runs are reported in the text). The Hosmer-Lemeshow chi-square was not significant (p>.23-.53 across models), indicating an adequate fit for the models. Variables associated with greater likelihood of having a smokefree home policy were having children, living with parents or roommates/siblings vs. alone, and not living with other home smokers; smoking within 30 minutes of awakening was associated with lower likelihood of having a smokefree home policy. Variables associated with having any personal smokefree policy (home or car) were having children, living with parents vs. living alone, not living with other home smokers, believing smoking affects the health of others, and confidence in quitting; again, smoking within 30 minutes was associated with lower likelihood of any policy. None of the variables was associated with presence of a smokefree vehicle, though odds ratios were generally in the same direction for variables significantly associated with smokefree home or any policy. To further explore factors associated with smokefree vehicles, a separate logistic regression was run entering only those variables significantly associated with smokefree vehicle policy in bivariate analyses; again, none was significantly related to smokefree vehicle policy in the multivariable analysis. New York State vs. Non-New York State was not associated with personal smokefree policies in any runs. The multi-state model showed the same pattern of significant findings and similar estimates, though “All Other States” had a higher odds of having a smokefree vehicle policy relative to NYS (OR=1.68, 95% CI 1.10, 2.562).

When queried about barriers to quitting in an open-ended question, a total of 18 responses were identified with content relevant to home smoking, and 29 related to smoking in vehicles. Open and axial coding (Strauss & Corbin, 2007) was conducted by a single coder and checked by a second coder for consistency, with 100% agreement. Responses are summarized in Table 4. Themes around home smoking were smoking while watching television, movies, or playing video games at home, being around others smoking in the home, and the fact that smoking was allowed in the home. Themes related to vehicle smoking were the behaviors of smoking while commuting to school and/or work, smoking while driving (in general), addiction, and stress reduction while driving.

DISCUSSION

To our knowledge, no prior study has examined prevalence of and factors associated with personal smokefree policies specifically among CC smokers. In this current large sample of CC smokers motivated to quit, prevalence of such policies was very low. Only about one in five (20.7%) reported a smokefree home, even fewer reported a smokefree vehicle (17.0%), and very few reported a complete smokefree policy (smokefree home *and* vehicle; 4.2%). Just under one-third reported any policy (smokefree home or vehicle; 31.2%). These rates are all considerably lower than the national average overall (83.0 % for smokefree homes and 78.1% for smokefree vehicles) (CDC, 2014; Kruger, et al., 2015), for smokers (53.7% for smokefree homes and 34.2% for smokefree vehicles)(Kruger, et al., 2015), and for young adults ages 18–24 (74.7% for homes and 73.2% for vehicles)(Cheng, et al., 2015). Further, as the current sample reflected smokers already motivated to quit, it is possible that personal smokefree policies would be even lower among CC students not motivated to quit. The combination of higher tobacco use rates in CC students (Berg, An, et al., 2011; CDC, 2016;

Lenk, et al., 2012; Sanem, et al., 2009; VanKim, et al., 2012) and the current findings of markedly lower personal smokefree policies support the call for a focus on CC students as a priority population for intervention (Berg, An, et al., 2011; Hasman, et al., 2013; Prokhorov, et al., 2008).

Having children was associated with having a smokefree home or any smokefree policy, which is consistent with at least some prior research (Ossip, et al., 2013), though in contrast to other research with college students (Berg, Lessard, et al., 2011). However, only about 20% of CC students with children reported a smokefree home policy. Further, having children was not associated with a smokefree car policy, and only about 15% of parents had a smokefree car policy. It is possible that some parents may have refrained from smoking while a child was in the vehicle, though this was not assessed, but any smoking produces sustained thirdhand smoke to which children are likely particularly vulnerable (Nabi-Burza, et al., 2012). The lack of a relationship between having children and presence of smokefree vehicle is in contrast to prior research with a combined sample of university and technical college students (Berg, Lessard, et al., 2011) and with smoking parents seen in pediatric practices (Nabi-Burza, et al., 2012). However, these results are consistent with findings from Cheng, et al. (2015) who also reported an association between presence of children and smokefree home – but not smokefree vehicle - policies for a large national sample of adults ages 18+. This inconsistent pattern of findings regarding children and personal smokefree policies may reflect differences in populations studied, and none specifically focused on CC smokers. Overall, these findings indicate the need to specifically target CC students with children for interventions to implement complete personal smokefree policies.

Presence of home smokers increased the risk of not having home or any personal smoking policies, though living alone relative to living with parents or roommates/siblings was also associated with not having personal smoking policies. Prior research indicates that living with parents who implement smokefree policies increases the likelihood of the adult child adopting smokefree home rules once living independently (Albers, Biener, Siegel, Cheng & Rigotti, 2009), suggesting the importance of targeting parents in general for implementation of personal smokefree rules (Winickoff, et al., 2013, 2014). Those who were more addicted were less likely to implement smokefree home or any policies, which may reflect difficulty in refraining from smoking. That higher confidence in quitting was associated with having any policy is consistent with prior research indicating higher quit rates among those living in smokefree environments (Gilpin, et al., 1999; Hyland, et al., 2009; Lee & Kahende, 2007; Mills, Messer, Gilpin & Pierce, 2009). The relation between belief in effects of smoking on others and any policy may indicate the value of awareness raising interventions among CC students who as a group tend to have less negative attitudes about smoking (Berg, et al., 2011).

Notably, none of the variables examined was associated with presence of a smokefree vehicle policy in the multivariable analysis. Fewer studies are available on factors associated with smokefree vehicles relative to homes, particularly in college aged populations and among smokers. Some prior studies found associations between sociodemographic or tobacco use variables (e.g., White race, younger age, female, heavier smoker) and lower likelihood of a smokefree vehicle policy (Cheng et al., 2015; Kruger, et al, 2015; Nabi-

Burza, et al., 2012), though, again, these were based on national samples or parents, who may have differ patterns from CC smokers. In the current study, comments from the small subsample of students who responded to an open-ended item suggest that further research on the importance of habit and stress reduction associated with smoking while driving for CC students, who generally commute rather than living on campus (VanKim et al., 2012), could point to opportunities for intervention.

Smokefree campus housing provided by an increasing number of 4-year colleges and universities may protect students from initiating smoking as well as from secondhand smoke exposure, though few CCs provide on-campus housing (VanKim, et al., 2012). However, presence of broader community clean indoor air laws have been associated with higher likelihood of implementing voluntary smokefree home and car policies overall and especially among those with less than a full college degree (Cheng, et al., 2015; Zhang, Martinez-Donate, & Jones, 2013; Monson & Arsenault, 2016). In addition, media campaigns have been associated with increased likelihood of smokefree home policies across all educational levels (Zhang, et al., 2013). In the current study, believing that smoking affects others was associated with presence of any policy, suggesting potential benefit of awareness raising campaigns. Interventions at the community level to implement and promote such media campaigns, as well as clean indoor air policies, may be particularly relevant to CC students who represent a diverse, community dwelling population. Among the small subsample of students who commented on smokefree homes, responses indicated that presence of smoking in the home was a barrier to quitting.

Limitations of the current study are the nonrandom sample of CC students, which albeit sizable, may not reflect CC students in general. In addition, the majority of subjects are from New York State, with the remainder from 23 states nationally. Thus, findings may not be representative of community college students nationally, though attending a New York State CC vs. other state CCs was not associated with presence of personal smokefree policies in multivariable analyses in the current sample. In the multistate model, comparing the 3 states with the largest subject enrollment and “all other states” to NYS, “all other states” had a higher odds of having smokefree vehicle policy, indicating that there may be variability across states meriting further study. The small numbers of subjects from each of the “all other states” precludes further analysis in the current sample. Similarly, the current sample was restricted to smokers who were motivated to quit, which may not generalize to nonsmoking CC students (nor to CC smokers not motivated to quit), though smokers are an important target group, as they represent a high risk population for not having personal smokefree policies (CDC, 2014; Cheng, et al., 2015; Dozier, et al., 2014; King, et al., 2013; Kruger, et al., 2015). Finally, presence of smokefree home and vehicle policies was obtained by self-report only, which may have overestimated the prevalence of such policies, though prior research has indicated a high correlation between parental report of smokefree home policies and child cotinine levels, at least suggesting the accuracy of self-report (Spencer, Blackburn, Bonas, Coe & Dolan, 2005).

Overall, the current study found a very low prevalence of smokefree home and vehicle policies among a large sample of CC smokers motivated to quit, indicating that this is a priority population for intervention. Such intervention can decrease exposure of others,

including children, to secondhand smoke, and potentially increase the likelihood of quitting in this large, diverse population that already has higher smoking rates relative to their 4-year college student counterparts.

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Table 1

Subject Characteristics (N=2475)

Variable	n (%)
Age	
<25 years	1224 (49.5)
≥ 25 years	1249 (50.5)
Sex	
Male	862 (35.3)
Female	1577 (64.7)
Race	
White	1744 (70.5)
Other	731 (29.5)
Ethnicity	
Hispanic	279 (11.3)
Other	2196 (88.7)
Marital Status	
Married or living with domestic partner	476 (19.2)
Other	1999 (80.8)
Parental Status	
Have ≥1 Child	917 (39.7)
No Children	1392 (60.3)
Living Arrangements	
Live Alone	320 (13.8)
With own family	902 (38.9)
With parents	738 (31.9)
With roommates/siblings	357 (15.4)
Type of Home	
Multi-unit (attached home, apartment, dorm)	996 (40.2)
Detached Home/Mobile Home	1474 (59.4)
Student Status	
Full Time (12+ credits)	1794 (72.5)
Part Time (1–11 credits)	681 (27.5)
Veteran Status	
Yes	158 (6.9)
No	2132 (93.1)
Smoking	
Daily	2218 (92.5)
Non-Daily	181 (7.5)
eCigarette Use	
Yes	764 (30.9)
No	1710 (69.1)
First Cigarette of the Day	

Variable	n (%)
≤30 minutes	1600 (64.7)
>30 minutes	873 (35.3)
Other Home Smokers	
Yes	1280 (51.9)
No	1188 (48.1)
Believes Smoking Affects the Health of Others	
Agree/Strongly Agree	2241 (90.8)
Disagree/Strongly Disagree/Unsure	227 (9.2)
Smokefree Policy Present	
Strict Smokefree Home	512/2475 (20.7)
Smokefree Vehicle	358/2109 (17.0)
Smokefree Home AND Vehicle	89/2109 (4.2)
Smokefree Home OR Vehicle	773/2475 (31.2)
Confidence in Quitting (1–10; Mean (SD)	6.68 ± 2.07

Table 2

Results of Bivariate Analyses for Smokefree Home, Smokefree Vehicle, Smokefree Home OR Vehicle

Variable	Strict Smokefree Home (N=2475)		Smokefree Vehicle (N=2109)		Either (N=2475)	
	%Yes	p	%Yes	p	%Yes	p
Age		<.01		----		<.10
<25 years	23.0		15.1		33.0	
≥ 25 years	18.4		15.8		29.7	
Sex		<.05		---		<.10
Male	22.9		16.3		33.5	
Female	19.5		14.7		29.9	
Race		<.05		---		<.05
White	19.4		15.1		29.8	
Other	23.8		16.5		34.8	
Ethnicity		<.01		---		.01
Hispanic	27.6		18.4		38.0	
Other	19.8		15.1		30.4	
Marital Status		<.10		----		---
Married/domestic partner	17.9		17.1		30.9	
Other	21.4		15.0		31.3	
Parental Status		---		---		---
Have ≥1 Child	20.0		16.4		31.4	
No Children	20.9		14.9		30.5	
Living Arrangements		<.01		----		<.01
Live Alone	14.7		14.7		24.7	
With own family	18.1		17.0		30.0	
With parents	28.0		15.1		37.0	
With roommates/siblings	16.0		12.8		25.8	
Type of Home		<.10		---		<.10
Multi-unit	18.4		15.5		29.0	
Detached Home	22.3		15.4		32.8	

Variable	Strict Smokefree Home (N=2475)		Smokefree Vehicle (N=2109)		Either (N=2475)	
	% Yes	p	% Yes	p	% Yes	p
Student Status		---		---		---
Full Time (12+ credits)	20.0		15.4		30.8	
Part Time (1–11 credits)	22.5		15.7		32.5	
Veteran Status		---		---		---
Yes	16.5		17.7		30.4	
No	20.6		15.2		30.7	
Smoking		<.01		<.10		<.01
Daily	19.6		15.1		30.3	
Non-Daily	29.3		20.7		39.8	
eCigarette Use		.05		---		<.05
Yes	23.0		16.4		34.2	
No	19.6		15.0		29.9	
First Cigarette of the Day		<.01		---		<.01
≤30 minutes	16.1		15.1		27.1	
> 30 minutes	29.1		16.1		38.9	
Other Home Smokers		<.01		---		<.01
Yes	8.3		14.5		20.6	
No	34.0		16.5		42.8	
Believes Smoking Affects the Health of Others		---		<.10		<.10
Agree/Strongly Agree	20.8		15.9		31.9	
Disagree/Strongly Disagree/Unsure	19.4		11.1		26.0	
Confidence in Quitting		<.01		<.05		<.01
(1–10; Mean (SD)	6.89(2.11)	6.62(2.06)	6.92(2.11)	6.65(2.06)	6.91(2.08)	6.58(2.06)

Table 3

Logistic Regression Analyses of Factors Associated with Personal Smokefree Policies

Characteristic	Smokefree Home (N=2475) aOR (95% CI)	Smokefree Vehicle (n=2109) aOR (95% CI)	Any (Home or Vehicle) (n=2475) aOR (95% CI)
Age			
<25 years	Reference	Reference	Reference
≥25 years	0.83 (0.64, 1.08)	0.99 (0.74, 1.33)	0.87 (0.70, 1.09)
Sex			
Female	Reference	Reference	Reference
Male	1.15 (0.91, 1.45)	1.24 (0.95, 1.62)	1.19 (0.98, 1.45)
Race			
White	Reference	Reference	Reference
Non-White	1.01 (0.76, 1.33)	0.97 (0.69, 1.36)	1.06 (0.84, 1.35)
Ethnicity			
Non-Hispanic	Reference	Reference	Reference
Hispanic	1.21 (0.83, 1.77)	1.20 (0.75, 1.92)	1.10 (0.79, 1.53)
Married			
Unmarried	Reference	Reference	Reference
Married	1.25 (0.90, 1.76)	1.02 (0.72, 1.44)	1.25 (0.95, 1.65)
Children			
No	Reference	Reference	Reference
Yes	1.56 (1.15, 2.12)*	1.05 (0.75, 1.47)	1.37 (1.06, 1.77)*
Living arrangements			
Alone	Reference	Reference	Reference
With own family	1.34 (0.88, 2.04)	1.25 (0.79, 1.98)	1.31 (0.92, 1.86)
With parents	2.62 (1.74, 3.93)*	1.02 (0.66, 1.60)	1.89 (1.35, 2.64)*
With roommates/siblings	1.75 (1.11, 2.76)*	0.88 (0.53, 1.46)	1.40 (0.97, 2.03)
Type of home			
Detached home	Reference	Reference	Reference
Multi-unit	0.83 (0.65, 1.05)	1.00 (0.77, 1.31)	0.87 (0.72, 1.07)
Daily smoking			
Yes	Reference	Reference	Reference
No	1.20 (0.82, 1.74)	0.73 (0.47, 1.14)	0.88 (0.63, 1.23)
eCigarette User			
No	Reference	Reference	Reference
Yes	1.11 (0.88, 1.40)	1.16 (0.89, 1.51)	1.16 (0.95, 1.41)
First cigarette of the day			
>30 minutes	Reference	Reference	Reference
≤30 minutes	0.59 (0.47, 0.73)*	0.97 (0.75, 1.26)	0.69 (0.57, 0.84)*
Other home smokers			

Characteristic	**Smokefree Home (N=2475) aOR (95% CI)**	**Smokefree Vehicle (n=2109) aOR (95% CI)**	**Any (Home or Vehicle) (n=2475) aOR (95% CI)**
Yes	Reference	Reference	Reference
No	6.13 (4.80, 7.82) *	1.12 (0.88, 1.44)	3.03 (2.51, 3.66) *
Believes smoking affects the health of others			
Disagree	Reference	Reference	Reference
Agree	1.30 (0.89, 1.89)	1.55 (0.96, 2.50)	1.52 (1.09, 2.11) *
State of Residence			
Non-New York State	Reference	Reference	Reference
New York State	1.02 (0.80, 1.31)	0.91 (0.69, 1.18)	0.93 (0.75, 1.14)
Confidence in quitting	1.05 (0.99, 1.10)	1.06 (1.00, 1.13)	1.07 (1.02, 1.12) *

aOR=adjusted odds ratio; CI=confidence interval

* p<.05

Table 4

Student Responses Regarding Barriers to Quitting Relevant to Home and Vehicle Smoking

Type	Theme	Sample Responses
Home Smoking (N=18 responses)	Smoke while watching TV, video games, movies at home	*I really enjoy smoking while watching movies/shows at home…in my down time when I am relaxing*
		While watching TV or playing video games I feel that I have to smoke
	Other home smokers/visitors who smoke	*Everyone who lives in this house smokes in this house*
		Boyfriend's family smokes in the house
		My girlfriend smokes and she smokes indoors
		People in my house smoking in my face
		My husband/wife smokes at home
	Smoking is allowed in the home	*That I can smoke in my home*
		My residence has been a smoking environment for over 3 years
Vehicle (N=29 responses)	Habit – commuting	*Habit of smoking in the car on the way to work and school*
		I have long commutes to school and when I am in the car by myself
		I usually only smoke during my drive to and from school or other long distances in the car
	Habit – Other	*Just the habit of having one when driving*
		When I drive is the hardest because that is when I mostly smoke
		Because that is how I started smoking with my friend in her car
	Addiction	*I smoked a lot in my car to hide it from others so now I am addicted to smoking while driving*
		I smoke…whenever I am in the car commuting I constantly smoke…I am so addicted
	Stress reduction	*Smoking for me is…stress relief while driving [Smoking in my car] is a stress reliever for me*