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Smoke-free Policy and Alcohol Use among Undergraduate College Students

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Abstract

Objectives—The purpose of this study was to assess attitudes and behaviors related to smoke-free policy among undergraduate student alcohol drinkers on a campus in a community with smoke-free bars.

Design and Sample—This was a secondary data analysis of a study in which participants completed mailed surveys assessing demographic characteristics, attitudes and behaviors related to alcohol and tobacco use and smoke-free policy ($n=337$). Opinion and behavior items were summarized descriptively; associations were examined using Kruskal Wallis tests and chi-square tests of association. Logistic regression tested for predictors of importance of smoke-free policy.

Results—Respondents were predominantly female and Caucasian; mean age 20.3 years. One-fourth were current smokers. Seventy-nine percent said the community smoke-free law had no effect on frequency of visiting bars. Eighty-seven percent said smoke-free policy in campus buildings was ‘somewhat’ or ‘very important’. Predictors of perceived importance of smoke-free policy included gender and smoking status.

Conclusions—Most smokers in this sample did not experience a change in their motivation to quit smoking or in number of cigarettes smoked daily. Implementation of a community smoke-free law did not reduce the likelihood of visiting bars. Women and nonsmokers were more likely to rate smoke-free campus policy as very important.

Keywords

smoke-free policy; college students; smoking; alcohol

Despite years of prevention and control efforts on US college campuses, alcohol and tobacco use remain common problems among students. National data reveal that only 26.5% reported they had never used alcohol (American College Health Association [ACHA], 2011). The next most commonly used substance is tobacco; only 70.8% report never smoking cigarettes. Concurrent use is common.

Alcohol and tobacco use in this population is a public health concern. Cigarette smoking is the leading cause of preventable morbidity and mortality in the US, contributing to 440,000 deaths annually (Centers for Disease Control and Prevention [CDC], 2009). Exposure to secondhand smoke has immediate adverse health effects (CDC, 2009). Fifty percent of US adults are regular alcohol drinkers (CDC, 2008). Deaths from chronic liver disease significantly increased in 2007 and were the 12th leading cause of death in US adults overall (CDC, 2007b). Excessive drinking can lead to various cancers, unintentional injuries, violence, birth defects, and alcohol dependence (CDC, 2010).

Adults aged 18-24 and 25-44 years have the highest prevalence of smoking (23.7% and 26.0%) (CDC, 2009). After peaking around 30% in the past decade (Johnson, O'Malley, & Bachman, 2002; McKee, Hinson, Rounsaville, & Petrelli, 2004), current smoking prevalence among college students is 18.5% (ACHA, 2008). Of current student smokers, one in four smoke every day. Current alcohol use is reported by over two-thirds of college students, with 54% reporting drinking alcohol on five or fewer days in the past month (ACHA, 2008).

Concurrent use of alcohol and tobacco is highly correlated in clinical and non-clinical samples (Wechsler et al., 2002a). National survey data indicated that 98% of college smokers drink alcohol, and approximately half of those who drink alcohol also smoke cigarettes. College student drinkers are more likely to initiate smoking than non-drinkers (Wechsler et al., 2002a).

College smokers are more likely than non-smokers to engage in high-risk alcohol use, risky driving, relational abuse, depression, less exercise, and utilization of emergency and mental health services (Halperin, Smith, Heiligenstein, Brown, & Fleming, 2010). Approximately one-third of college drinkers report symptoms consistent with diagnosable alcohol abuse (Knight et al., 2002). Cigarette use, even at relatively low levels, is associated with increased binge drinking and illicit substance use (Schorling, Gutgesell, Klas, Smith, & Keller, 1994).

Other sociodemographic factors are associated with college students' smoking and drinking behaviors including gender (Johnson et al., 2002), race (Patterson, Lerman, Kaufmann, Neuner, & Audrain-McGovern, 2004), class standing (Wechsler & Nelson, 2008), fraternity or sorority membership (McCabe et al., 2005), intercollegiate athlete status (Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994), academic problems and grade point average (GPA) (Wechsler et al., 2002a), and place of residence (Wechsler, Lee, Nelson, & Kuo, 2002b).

Little is known about how alcohol drinkers view smoke-free policy on campus or how alcohol and smoking behaviors may be impacted by living in a smoke-free community. Comprehensive smoke-free laws may reduce smoking rates among college students who live, work and play in the larger community, particularly after laws are well-established (Hahn et al., 2010). Changing the social environment through policy and decreasing exposure of nonsmoking college students to those modeling smoking behaviors may decrease initiation of smoking and prevent relapse (Ridner, 2005).

Comprehensive tobacco control policies for US colleges have been adopted in an attempt to reduce tobacco use. As of October 2010, comprehensive (100%) smoke-free campus policies were in effect in at least 420 US colleges. Three states have smoke-free laws covering all college campuses (Americans for Nonsmokers' Rights, 2010).

College students generally support campus tobacco control policies. A national randomized survey of US undergraduates found over three-fourths supported smoke-free policies for all college buildings, residences and dining areas (Rigotti, Regan, Moran, & Wechsler, 2003).

Fifty-one percent supported smoke-free area bars. While all policies had significantly more support among non-smokers than smokers, support for the proposed policies was strong, even among smokers, and consistent across demographic subgroups.

While there is no literature examining the impacts of smoking prevention strategies on alcohol users' drinking and smoking behaviors, community initiatives targeting reduction of alcohol problems among college students have been effective in reducing underage drinking, alcohol-related assaults, emergency department visits, and alcohol-related crashes (Hingson, Heeren, Winter, & Wechsler, 2005). The National Institute on Alcohol Abuse and Alcoholism Task Force on College Drinking recommends prevention occur simultaneously at the individual, campus, and community levels (US Department of Health and Human Services, 2002). Since smoking prevention targets these same levels (CDC, 2007a) and concurrent use is common, it is appropriate to examine how a smoking prevention strategy such as smoke-free policy affects alcohol users' attitudes and behaviors.

Social Cognitive Theory provided the framework for this study because it explains how people acquire and maintain certain behavioral patterns (Bandura, 1997). This theory posits that behaviors result from reciprocal interactions between personal and environmental factors. Beliefs, cognition, and emotions form attitudes, resulting from and influencing one's external environment. Behavior results from shared effects of environment and attitudes. Even when attitudes are stable, different environments and situations can result in very different behaviors in the same individual (Bandura, 1997; Glanz, 2002). By identifying variables that influence college drinkers' attitudes and behaviors related to smoke-free policy, there is potential to develop interventions which may positively impact alcohol use behaviors.

Research Objectives

The purpose of the study was to assess attitudes and behaviors related to smoke-free policy among undergraduate student alcohol drinkers on a campus located in a community with smoke-free bars. The specific aims were to: 1) assess whether the community smoke-free law increased motivation to quit or decreased the number of cigarettes consumed among smokers; 2) determine whether frequency of visiting bars was associated with smoking status and residence type (on- versus off-campus); and 3) determine predictors of perceived importance of smoke-free campus policy. We hypothesized that: a) frequency of visiting bars would be associated with smoking status and type of residence; b) college aged drinkers would report increased motivation to quit smoking and/or decreased cigarettes smoked due to the smoke-free bar law; and c) non-smoking drinkers would be more likely to believe smoke-free campus policies are important, compared to those who smoked.

Methods

Design and Sample

This is a secondary data analysis of a larger study of mental and physical well-being and lifestyle choices among college students ($N=471$) conducted at a public university in the South in 2007. The 337 students in this sample had consumed alcohol at least once in the past 30 days. Participants completed a mailed cross-sectional survey assessing demographic characteristics including tobacco and alcohol use; attitudes toward smoke-free policy in campus buildings; motivation to quit smoking, cigarettes smoked daily, and frequency of visiting bars. At the time of the survey, the community where the university was located had a comprehensive smoke-free law covering all bars that had been in effect for 3.5 years. The campus smoke-free policy, in effect for approximately 1 year at the time of the survey, prohibited smoking inside all owned, operated, leased or controlled university buildings,

parking structures, enclosed bridges and walkways, and vehicles, and within 20 feet of entrances, exits, air intakes and windows.

The study was approved by the University Institutional Review Board. A random sample of 1,700 potential respondents in the larger study received a packet containing a questionnaire with a cover letter explaining the purpose of the study and the importance of participating. The potential respondents were randomly selected by the Registrar's Office from among all 18-24 year old full-time undergraduate students who were registered at the university in Fall 2007. A two-dollar bill was included in each packet as an incentive to complete and return the questionnaire. In addition, a postcard with the potential respondent's name was included with the questionnaire. Recipients were asked to complete both the questionnaire and the postcard and return the postcard separately to indicate completion of the questionnaire. This procedure preserved the anonymity of participant responses while allowing the researchers to track who should receive a follow-up questionnaire. Reminder postcards were sent one week after the initial mailing. Completing and returning the survey implied consent to participate in the study.

Approximately three weeks following the initial mailing, follow-up survey packets were mailed to all who had not returned a postcard. After the second questionnaire mailing, those who did not return questionnaires were considered non-respondents; there was no further follow-up (Dillman, Smyth, & Christian, 2009). Of the 1,700 mailed surveys, 112 were undeliverable because of incorrect addresses and 37 of those who completed the surveys were not undergraduate students. The response rate was 30%.

Measures

Demographic characteristics—Survey items included gender, race/ethnicity (with categories combined into two: 'Non-Hispanic white' and 'Other'), GPA, class standing (freshman/sophomore vs. junior/senior), living situation (with categories combined into two: 'live on campus' and 'live off campus'), social fraternity or sorority membership (yes/no), and intercollegiate athlete status (yes/no).

Current cigarette smoking and alcohol use—The survey contained items that assessed current smoking and drinking status. Respondents were asked on how many days they had smoked cigarettes in the last 30, with possible responses ranging from 0 to 30. Alcohol use in the last 30 days was assessed in the same way. Responses were recoded into two categories of '0 days in the last 30' versus '1 or more days in the last 30' to form binary indicators of current cigarette and alcohol use. Only those who had used alcohol in the past 30 days were retained for this study; this subsample comprised 72% of the full sample of the larger study.

Effect of the community smoke-free law—Participants who were current smokers were asked whether: a) their motivation to quit smoking; and b) the number of cigarettes smoked daily had increased, decreased, or was not affected by the community smoke-free law. All participants were asked whether their frequency of visiting bars increased, decreased or was not affected by the community law. The item was 'Has the smoke-free law in [name of community] affected how often you frequent bars? Has the law increased, decreased or not affected how often you visit bars?' and choices included 'increase,' 'no effect,' 'decrease,' and 'I have never gone to a [name of community] bar.' For the purpose of analysis, those who had never gone to a bar in the community were recoded as missing for this item so that only those who had visited bars would be included in the analysis.

Importance of the smoke-free policy in campus buildings—Students were asked “How important is it to you to have a smoke-free environment inside all campus buildings including dormitories?” The responses were on a Likert scale with options “Very important,” “Somewhat important,” “Not too important,” and “Not important at all.”

Analytical Strategy

Data were summarized using descriptive statistics, including means and standard deviations or frequency distributions. The Mann-Whitney *U* test was used to compare degree of importance of smoke-free campus buildings between those living on and off campus and between smokers and nonsmokers, while group comparisons of nominal variables were accomplished using the chi-square test of association. Predictors of importance of smoke-free campus buildings were determined using logistic regression; the Hosmer-Lemeshow test was used to assess the fit of the model to the data. Data analysis was performed using SAS for Windows; an alpha level of .05 was used throughout.

Results

The majority of the sample was female, White non-Hispanic, and upperclassmen (Table 1). Two-thirds lived off campus; most were not a member of a fraternity or sorority or an intercollegiate athlete. About one-quarter had smoked within the past 30 days. Average age was 20.3 (*SD*=1.6); range of 18-26 years. Slightly more than half were under the legal drinking age of 21 (54%). The average GPA was 3.2 (*SD*=0.6), with averages ranging from 1.1- 4.0.

Frequency of visiting bars and the community smoke-free law

Among those in the total sample who ever visited bars (*n*=208), most (79%) said the community smoke-free law had no effect on frequency of visits. Among those who had ever visited a bar in the community, there was a relationship between frequency of visiting bars and smoking status (MW *U*= 10.6, *p*= .001). Among nonsmokers who visited bars, 1% said they decreased the frequency of going to bars, while 24% increased bar-going. Among smokers who visited bars, 6% said they had decreased frequency if visiting, while 8% increased bar-going. Among those who ever visited a community bar, there was no relationship between frequency of visiting bars and residence (on-versus. off-campus) (MW *U*= 1.2, *p*= .3).

Smoking behaviors and the community smoke-free law

Among smokers, 9% indicated the community smoke-free law increased their motivation to quit; 3% reported motivation decreased (Table 2). The majority (88%) said the law had no effect on their motivation to quit smoking and most smokers (82%) said the law had no effect on the number of cigarettes they smoked daily.

Importance of the smoke-free policy in campus buildings

Sixty-seven percent of the participants indicated that the smoke-free policy in campus buildings was ‘very important;’ 20% said that it was ‘somewhat important;’ 9% indicated it was ‘not too important;’ and the remaining 4% chose ‘not at all important’. There was a significant difference between those who lived on- vs. off campus in the perceived importance of the smoke-free policy in campus buildings. The majority (77%) of students living on campus rated the policy as ‘very important;’ only 63% of those living off campus did so (Table 3). Similarly, a smaller percentage of current smokers rated the smoke-free campus policy as ‘very important’ (46%), compared with nonsmokers (76%). These differences could be due in part to the fact that a higher percentage of students living off

campus were current smokers (29%), compared to those living on campus (19%; $\chi^2=4.1$, $p=.04$).

The dependent variable of the logistic regression model was coded so those who rated the smoke-free campus policy as 'very important' were compared to those who rated the smoke-free policy as less important. Potential predictors included the demographic characteristics of gender, race, GPA, class standing (upper vs. lower classmen), living situation (on campus vs. off campus), fraternity/sorority membership status, intercollegiate athlete status, in addition to current smoking status. The significant predictors of rating of importance of smoke-free policy were gender, and smoking status (Table 4). Women were 353% more likely to rate the smoke-free campus policy as 'very important' compared to men. Current smokers were 79% less likely to indicate the policy was 'very important,' relative to nonsmokers. Other potential predictors were not significant predictors of rating of importance of smoke-free campus policy. The Hosmer-Lemeshow lack of fit test was not significant ($\chi^2 = 11.2$, $p = .2$), suggesting that the model fit the data well.

Discussion

This study examined attitudes and behaviors related to smoke-free policy among undergraduate student alcohol drinkers on a campus in a community with a smoke-free bar law. The first hypothesis that frequency of visiting bars would be associated with smoking status and type of residence was partially supported. Frequency of visiting bars was associated with smoking status. Compared to smokers, nonsmokers were more likely to report the community smoke-free law had increased frequency of visiting bars. While some smoking drinkers increased bar-going and others decreased frequency of visiting bars, most reported the smoke-free law had no effect. Frequency of visiting bars was not associated with type of residence. This finding is consistent with previous research showing students living on campus were less likely to smoke cigarettes in the community with an established comprehensive smoke-free law, but there was not an effect on alcohol behavior (Hahn et al., 2010).

Almost 19% of the total sample reported the law increased the likelihood that they would visit a bar. This is consistent with previous economic impact studies, which demonstrate no economic harm to businesses following implementation of smoke-free laws (Eriksen & Chaloupka, 2007; Pyles, Mullineaux, Okoli, & Hahn, 2007). Of concern is that most participants were underage. Average age was 20.3 years, with more than half under the legal drinking age of 21 (54%). Prior research shows it is not difficult for students under 21 to obtain alcohol (National Center on Addiction and Substance Abuse, 2007). This finding underscores the need for effective population-based interventions aimed at prevention and treatment of alcohol use in college students.

The second hypothesis that college aged drinkers would report increased motivation to quit smoking and/or decreased cigarettes smoked per day due to the smoke-free bar law was not supported. The majority (88%) of smokers in this sample said the smoke-free law had no effect on their motivation to quit smoking; only 9% indicated the community smoke-free law increased motivation to quit. Among smokers, 82% said the law had no effect on number of daily cigarettes smoked. Only 13% said the number decreased due to the law, while 5% reported an increase. The campus had a smoke-free building policy at the time of the survey, but two-thirds of the participants lived off campus. One potential explanation is that the majority of cigarettes were smoked at home or outside campus buildings; areas not covered by smoke-free policy or the community smoke-free law. Cronk & Piasecki (2010) found that smoking among college students is mostly opportunistic. The strongest predictors of smoking were recently being outside, presence of others smoking, and being where

smoking is permitted, all of which indicate situational control over smoking. Further research is needed to examine the association between existence and type of smoke-free policies and smoking behaviors among college students who drink alcohol.

Another potential explanation for this finding are the criteria college students use to identify themselves as smokers. The way college students define “smoker” and how this definition impacts smoking behavior and attitudes is a critical distinction in this population (Berg et al., 2010). “Smoker” can be described in terms of smoking frequency, contextual factors (i.e. smoking alone vs. smoking at parties, time since initiation of smoking, purchasing vs. borrowing cigarettes, level of addiction [can one quit without great effort]), and whether smoking is a habit. Using these criteria to define one’s self as a “smoker” or nonsmoker influences both motivation to and perception of the need to quit.

The third hypothesis that nonsmoking drinkers would be more likely to believe smoke-free campus policies are important, compared to students who smoked, was supported. Smoking status was a predictor of perceived importance of smoke-free policies; current smokers were 79% less likely to indicate the policy was ‘very important,’ relative to nonsmokers. Gender was also a significant predictor; women were far more likely to view the campus policy as important.

Overall, there was support for smoke-free policy in campus buildings. The difference in support among those living on- versus off-campus was significant. Over three-fourths of students living on campus rated the policy as ‘very important’; slightly less than two-thirds of those living off-campus did so. Students living on campus would be more at risk for exposure to secondhand smoke without the smoke-free policy, which may explain the difference. A higher percentage of those living off campus were smokers; this could also explain the difference in support for smoke-free policy by location of residence. Current smokers were less likely than nonsmokers to rate the smoke-free campus policy as ‘very important’.

These predictors of perceived importance of smoke-free policy have implications for smoking prevention practice among college students who drink alcohol. Women and nonsmokers, the most likely tobacco-free advocates, could be targeted for involvement in prevention and cessation efforts, particularly related to tobacco-free policy. The more vulnerable population of male drinkers who also smoke could be targets for behavior change. The North Carolina Tobacco-free Colleges Initiative is an example of an initiative to encourage tobacco-free college campuses (Lee et al., 2010) that targets at risk populations. Using grants to encourage policy development, compliance and smoking cessation, this project built coalitions to facilitate smoke-free policy adoption. After five years, the number of tobacco-free colleges in North Carolina increased from one to 33.

College student support for smoke-free policy is consistent with the literature. Researchers found students prefer smoke-free housing (Gerson, Allard, & Towvim, 2005). Rigotti et al. (2003) reported support for proposed campus tobacco control policies was strong even among smokers and consistent across demographic subgroups. Support for smoke-free campus policy is particularly important given that smoke-free residences could deter students who were not regular smokers in high school from smoking in college (Patterson et al., 2004; Wechsler, Lee, & Rigotti, 2001). Students living on campus are more likely to be nonsmokers (Hahn et al., 2010). Six months following adoption of a university smoke-free policy, there was a significant decrease in the overall smoking prevalence among students, professionals and staff, and 9.6% quit smoking after the policy was implemented (Ryker & Steele, 2007).

The impact of community smoke-free laws on the attitudes and behaviors of college students is less clear. Although smoke-free laws are effective in reducing community smoking rates, college student drinkers in this study reported that living within the larger smoke-free community did not affect their motivation to quit smoking or alcohol-related social behaviors. Bell and colleagues (2009) found smoke-free laws may have less impact on subpopulations such as low-income groups; others report similar findings about low-income girls and women (Greaves & Hemsing, 2009). College students may represent another subpopulation in which smoke-free laws alone do not influence alcohol- or tobacco-related behaviors.

The primary limitation of this study was the relatively low response rate (30%). This may have been due to a new computer system being installed in the Registrar's office just prior to the selection of the random sample; there was concern that surveys may have been sent to home addresses rather than campus addresses for some of the selected students. An additional limitation was the overrepresentation of women in the full sample and in the subsample of alcohol users; women comprised 66% of the full sample and 68% of the subset of those who were drinkers. Finally, this study would have been strengthened by inclusion of a sample of college drinkers from a community without a smoke-free law.

The purpose of this study was to assess attitudes and behaviors related to smoke-free policy among undergraduate student alcohol drinkers on a campus located in a community with a smoke-free bar law. These findings can be used in planning future interventions. Given that community initiatives have been shown to reduce alcohol problems among college-age youth (Hingson et al, 2005), considering the link between smoke-free policies and changing health behaviors of college drinkers may be a promising approach. According to Social Cognitive Theory, behaviors are the result of reciprocal interactions between personal and environmental factors. Future studies are needed to understand individual and environmental factors that drive tobacco and alcohol-related behaviors among college students. Because concurrent use is common, it is prudent to target both behaviors simultaneously when developing tailored interventions. Comprehensive interventions including individual, campus and community strategies could target risky behaviors in an effort to reduce vulnerability in this population.

Improved understanding of the social influences that impact alcohol and tobacco use and the relationship between the two may lead to the development of educational and environmental strategies that could impact risky college student behaviors. Smoke-free laws and tobacco-free campus policies may be an important part of a series of multifaceted interventions which could be designed, implemented and evaluated to protect college students and the community at large from the dangers of alcohol and tobacco use.

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Table 1

Frequency distributions of demographic characteristics for a sample of undergraduate students who had had at least one drink in the previous 30 days (N = 337)

Variable	n (%)
<u>Sex</u>	
Female	225 (67.8)
Male	107 (32.2)
<u>Race/ethnicity</u>	
White – non Hispanic	306 (92.2)
Other race/ethnicity	26 (7.8)
<u>Class standing</u>	
Freshman/Sophomore	141 (42.2)
Junior/Senior	193 (57.8)
<u>Living situation</u>	
On campus	107 (32.1)
Off campus	226 (67.9)
<u>Fraternity or sorority (Greek status)</u>	
Yes	90 (26.9)
No	245 (73.1)
<u>Intercollegiate athlete</u>	
Yes	36 (10.8)
No	298 (89.2)
<u>Current smoker</u>	
Yes	86 (25.8)
No	247 (74.2)

Table 2

Effect of community's smoke-free law on motivation to quit smoking, daily cigarette consumption, and visits to bars among undergraduate students who are current drinkers.

Effect of law	Motivation to quit smoking (among smokers only; <i>n</i> = 86) n (%)	Cigarettes smoked daily (among smokers only; <i>n</i> = 86) n (%)	Frequency of visiting bars (among those who visit bars; <i>n</i> = 208) n (%)
Decrease	2 (2.6)	10 (12.7)	5 (2.4)
No effect	69 (88.4)	65 (82.3)	164 (78.8)
Increase	7 (9.0)	4 (5.0)	39 (18.8)

Association of living situation, smoking and drinking status with degree of importance of smoke-free environment in campus buildings, among undergraduate students who are current drinkers (N = 337)

Table 3

Comparison variable	Importance of smoke-free environment inside all campus buildings				Comparison
	Very Important <i>n</i> (%) [*]	Somewhat important <i>n</i> (%) [*]	Not too important <i>n</i> (%) [*]	Not important at all <i>n</i> (%) [*]	
<u>Live on campus</u>					
Yes	82 (76.7)	18 (16.8)	6 (5.6)	1 (0.9)	Mann-Whitney <i>U</i> = 7.1; p = .008
No	140 (63.1)	47 (21.2)	24 (10.8)	11 (4.9)	
<u>Current smoker</u>					
Yes	39 (45.9)	19 (22.3)	17 (20.0)	10 (11.8)	Mann-Whitney <i>U</i> = 31.6; p < .0001
No	184 (74.5)	48 (19.4)	13 (5.3)	2 (0.8)	

* Percent for each level of importance is the percentage of times that response was chosen from among all respondents within that same category of smoking or drinking.

Table 4

Logistic regression of perceived importance of a smoke-free environment in campus buildings* on demographic and personal characteristics, among current drinkers. (n = 272)

Predictor	Odds Ratio	95% Confidence Interval for Odds Ratio	p-value
Female	4.53	2.41 - 8.52	<.0001
White – non Hispanic	1.55	0.55 - 4.40	.4
Grade point average (GPA)	1.48	0.86 - 2.53	.2
Upperclassman	1.12	0.56 - 2.26	.8
Live on campus	1.35	0.59 - 3.11	.5
Fraternity/sorority (Greek)	1.77	0.84 - 3.70	.1
Intercollegiate athlete	2.28	0.79 - 6.59	.1
Current smoker	0.21	0.11 - 0.40	<.0001

* The dependent variable was coded as: 1='Very important' and 0= 'Somewhat important' or 'Not too important' or 'Not important at all'