Published in final edited form as:

J Am Coll Health. 2016 January ; 64(1): 74–79. doi:10.1080/07448481.2015.1042877.

Who Uses Alcohol Mixed with Energy Drinks? Characteristics of College Student Users

Megan E. Patrick*, Carlos Macuada, and Jennifer L. Maggs

Abstract

Objective—To examine characteristics of alcohol mixed with energy drink (AmED) use in a sample of college students.

Participants—College students ($N=614$, 53% female) in their second year of college participated during the fall of 2008.

Method—Students completed a cross-sectional survey with questions regarding AmED use.

Results—AmED use in the last 30 days was reported by 27% of participants. Logistic regression analyses found that risk factors for AmED included participating in a fraternity/sorority; participating in athletics; living off-campus; having greater fun/social, relax, image motives for alcohol consumption; and binge drinking. Protective factors included early morning classes, Honors Program participation, and greater physical/behavioral motives for not drinking.

Conclusions—Risk factors for AmED use can identify college students most likely to consume AmEDs and thereby inform screening and intervention efforts to reduce negative AmED-related consequences.

Keywords

Alcohol; energy drinks; college; student; characteristics

Underage alcohol use represents a significant and enduring concern for college health. The combination of alcohol with energy drinks raises additional complexities for understanding underage alcohol use and represents an important behavior in its own right. To the extent that alcohol use and heavy drinking are more hazardous when drinkers are underage, any behavior or condition that exacerbates that danger is also of central concern. Recent research highlights the increasing prevalence and risks associated with the use of energy drinks and the combination of energy drinks with alcohol, which are strongly marketed to underage drinkers and college students.^{1–4} Energy drinks contain high levels of caffeine (about 50–500mg), compared to soda (34–54mg in 12 oz) and coffee (77–150mg in 6 oz).^{1, 4} Alcohol mixed with energy drink (AmED) use is associated with increases in harmful alcohol-related consequences and other risk behaviors.^{3, 5–9} On days college students consume AmED, they are more likely to experience acute consequences such as passing out or having a sexual

*Megan E. Patrick (Corresponding Author), Institute for Social Research, University of Michigan, 426 Thompson St., Ann Arbor, MI 48106-1248 USA, 734-763-7107, meganpat@umich.edu.

The content here is solely the responsibility of the authors and does not necessarily represent the official views of the sponsors.

experience they regret, compared to days they use alcohol without energy drinks.¹⁰ The stimulating effects of energy drinks may leave AmED drinkers feeling less intoxicated than they actually are,^{5, 11–14} leading them to drink greater quantities of alcohol and for longer periods of time.^{2, 10, 15}

Although these risks are becoming increasingly well-understood, little information is available about characteristics of AmED users, specifically concerning demographic subgroups (e.g., gender, race/ethnicity¹⁶) and psychosocial characteristics (e.g., activity involvement, living situation, academic demands, motives for drinking). To develop relevant intervention messages for AmED use, we must understand its indicators. This paper will directly address risk factors for AmED use, with the goal of informing universal interventions to increase awareness about AmED among college students in general and indicated interventions to reduce the negative impacts of AmED use among students showing signs of problems.¹⁷

Characteristics Associated with AmED Use

Sociodemographics

Overall, college students who are male and White appear to be more likely to report AmED use,^{8, 18–20} although some studies find no gender differences.^{18, 19} Gender and race/ethnicity variables are included in the current study as correlates of AmED use.

Activity Involvement

Students who are involved in intercollegiate and intramural athletics^{8, 21} and fraternities/sororities⁸ report greater AmED use than students who are not involved. In addition, living on campus has been associated with AmED.¹⁸ We examine activity involvement and living situation as correlates of AmED use.

Academic Demands

Academic demands, including early morning classes and number of credits, may be associated with AmED use but have not been directly tested. The majority of young adults consume AmEDs late at night,²² which suggests that AmED use may be inconsistent with next-day early morning obligations. Although college AmED surveys have not typically addressed academic demands, high school students with higher grades are less likely to consume AmEDs than are students with lower grades,²³ and college students who are in Honors Programs tend to drink less alcohol.²⁴ We test academic demands as correlates of AmED use among college students.

Motives for Drinking

Motives for alcohol use are key proximal predictors of drinking.²⁵ Identifying motives for alcohol consumption and associating these with AmED use will provide important information regarding what types of alcohol users also consume AmED and why people use, thereby assisting in planning intervention strategies to reduce AmED use and related harms. Previous research on drinking motives has shown consistent patterns: Social motives for alcohol use are most common, enhancement motives for alcohol use are associated most

with heavy alcohol use, and coping motives for alcohol use are most strongly tied to alcohol use disorders.^{25–28} Energy drink marketing campaigns have historically portrayed energy drinks as making social experiences, concerts, parties, and personal images more exciting, as well as decreasing negative alcohol-related consequences. Energy drink advertisements include slogans such as “Gear up for a night to impress” (*Tilt*) and “Say hello to an endless night of fun” (*Bud Extra*).²⁹ Since the FDA banned the sale of pre-mixed AmED drinks in 2010,³⁰ marketing about AmED is now more indirect, but the same type of image is maintained by energy drink companies (e.g., sponsoring college DJ contests around the country; “Monster Energy Outbreak,” 2014). Therefore, we may expect that AmED use is associated with greater fun/social and image motives for drinking and lower physical/behavioral motivations for limiting drinking.

The Current Study

The purpose of this study was to examine characteristics associated with AmED use among college students, with a focus on sociodemographics, activity involvement, academic demands, and motives for drinking. Binge drinking is examined as an additional correlate of AmED use, and it serves as a strict control in order to examine whether other variables explain additional variance once heavy drinking is included in the model.

Methods

Participants

The University Life Study (ULS) was a longitudinal survey of students from a university in the northeastern U.S.^{e.g.,31, 32} Eligible participants were first-year, full-time students; American citizens or permanent residents; under age 21; and residing within 25 miles of the main campus. A stratified sampling procedure obtained a diverse sample of respondents with respect to gender and race/ethnicity. The ULS design included assessments each semester from Fall of 1st year in college through Fall of 4th year. Data used in the current paper are from Fall of 2nd year (2008); thus the current analysis is cross-sectional in regard to the relationship between correlates and outcome measures. Students included in analyses ($N=614$) had valid responses for all predictors and outcomes. Half (53%) of the participants in the analytic sample were women; their mean age was 19.5 years ($SD=0.43$, range=18.00–21.75). Twenty-six percent of the analytic sample self-identified as Hispanic/Latino American. Non-Hispanic/Latino participants were racially diverse; 15% of sample participants self-identified as African American, 24% as Asian American/Pacific Islander American, 27% as White, and 9% as more than one race. The study was approved by the Institutional Review Board and protected by a federal Certificate of Confidentiality.

Measures

Alcohol Mixed with Energy Drink (AmED) Consumption—Respondents were asked how frequently they consumed “high energy drinks with alcohol (e.g., Red Bull + vodka, or a pre-mixed drink)” in the last 30 days, coded as any AmED use (1) vs. no AmED use (0).

Sociodemographics—Participants reported their gender as male (1) or female (0), their ethnicity as Hispanic or Latino (1) or not (0), and their race as (check all that apply) American Indian or Alaskan Native, Asian, Black or African American, Native Hawaiian or Pacific Islander, White, or Other.

Activity Involvement and Living Situation—*Fraternity/Sorority involvement* represented whether respondents participated in a fraternity or sorority (1) or not (0). *Off-campus residence* was coded as off-campus (1) vs. on-campus (0). Off-campus residence was primarily in off-campus apartments or houses; only 2.1% of the sample lived with parents. *Athletics participation* indicated whether students participated in intercollegiate athletics or intramural athletics/club sports (1) or not (0).

Academic Demands—*Number of credits* was specified as low (0–14 credits; coded as 0), average (15–17; coded as 1), and high (18 or more; coded as 2) academic credits. *Early morning classes* ranged from 0 days to 5 days of early morning classes each week, defined as starting before 10 am. *Honors program* was a dichotomous variable coded as enrollment in the University's academic Honors Program (1) or not (0).

Motives for Drinking—The Importance of Consequences of Drinking (ICOD) short form^{31, 33, 34} asked, “How important is it to you to experience each of the following consequences as a result of drinking this semester?” Possible responses ranged from 0 (Not at all important) to 4 (Very important). Items for each of three subscales of motives for drinking were averaged: Fun/Social (5 items, $\alpha=0.90$; e.g., “have a good time”), Relax (5 items, $\alpha=0.90$; e.g., “help you unwind”), and Image (4 items, $\alpha=0.87$; e.g., “look interesting to other people”). Similarly, motives for *not* drinking were assessed with responses to the question, “How important is it to you to avoid experiencing the following consequences as a result of drinking this semester?” Items for each of two subscales of motives for not drinking were averaged: Physical/Behavioral (5 items, $\alpha=0.91$; “pass out”), and Driving (4 items, $\alpha=0.92$; e.g., “have no one sober enough to drive”).

Binge Drinking—Participants were asked whether they consumed 4 or more alcoholic drinks in a row (for women) or 5 or more alcoholic drinks in a row (for men) in the past two weeks, contrasting binge drinking (1) vs. not (0).

Plan of Analysis

To address the aim of the study, three sets of logistic regression analyses were computed: (1) bivariate models linking each correlate (demographics, activity involvement, living situation, academic demands, and motives for drinking) with AmED use; (2) a multivariable model testing measures with significant bivariate associates as correlates of AmED use; and (3) a multivariable model testing these correlates, plus binge drinking (see Table 1).

Results

Overall, 27% of 2nd year college student participants used AmED in the past 30 days. (Separately, 73% consumed any alcohol and 54% consumed any energy drink in the prior 30 days.) Focusing first on the bivariate associations, gender was not significantly correlated

with AmED use. As a set of dummy variables, race/ethnicity was not significantly associated with AmED use ($\chi^2(4)=7.56, p=.109$), although results for individual dummy variables showed that Asian non-Hispanic students reported lower odds of AmED use. Activity involvement and living situation were significant correlates. Students who were involved in fraternities/sororities or athletics or who resided off-campus had greater odds of AmED use. Academic demands were also significant correlates. Students who had a greater number of early morning classes per week or who were in the Honors Program had lower odds of AmED use than students with fewer early morning classes or who were not in the Honors Program, respectively. Total number of academic credits was not associated with AmED use. Students who endorsed greater fun/social, relax, and image motives for drinking had elevated odds of AmED use, and those who endorsed greater physical/behavioral motives not to drink had lower odds of AmED use.

Constructs showing significant bivariate associations with AmED use were tested in the multivariable models. In the multivariate model without binge drinking, four predictors remained significant. Students who lived off-campus and had greater fun/social motives for drinking had elevated odds of AmED use, and students with more early morning classes and greater physical/behavioral motives not to drink had diminished odds of AmED use. Finally, in the multivariable model including binge drinking, binge drinking emerged as a strong predictor of AmED use. After controlling for binge drinking, only physical/behavioral motives for not drinking remained a significant predictor of AmED use.

Comment

Conclusions

The current results build on and extend the new and growing research area on characteristics of AmED users. Contrary to previous findings in college samples,^{8, 18–20} we observed no differences by race/ethnicity, except lower use by Asian American students in the bivariate model. Work on gender differences has been inconsistent; in our sample males and females did not differ in their likelihood of past 30-day AmED use.^{18, 19} Similar to previous reports, students involved in fraternities/sororities⁸ and athletics^{8, 21} reported greater AmED use, although these effects were no longer significant once other correlates were included in the model. The risk factor of fraternity/sorority participation may reflect the energy drink industry practice of sponsoring fraternities by supplying them with products in exchange for their endorsement.^{35, 36} We also found that students living off-campus (almost exclusively in houses/apartments with roommates and without parents) reported greater AmED use than did on-campus residents.

This paper is the first to document how academic demands and drinking motives are associated with AmED use among college students. Having early morning classes and being an honors student appeared to be protective against AmED consumption, while the number of enrolled credits was not. These effects were independent of other correlates, except for binge drinking. Other studies on motives for AmED use, in particular, suggest AmEDs are used to feel energetic, stay up later at night, and feel less tired, as well as for the taste.^{2, 22} Kensinger et al.³⁷ found that a four-factor model fit motives for AmED use, including social, enhancement, coping, and conformity motives, similar to Cooper's four-factor motivational

model of alcohol use.²⁵ Our study assessed motives for drinking generally, with an eye to potential utility in interventions that include an assessment of alcohol use overall, rather than motives for AmED use in particular. Students who endorsed greater fun/social, relax, and image drinking motives and those who endorsed fewer physical/behavioral motives for *not* drinking had a higher likelihood of AmED use; the effects of motives for drinking were not independent of links with binge drinking. The association with motives for drinking may reflect that mixing energy drinks or other types of caffeine with alcohol could increase the rewarding effects of alcohol.^{38–40} Physical/behavioral motives for not drinking remained a significant predictor even after controlling for binge drinking, suggesting that understanding why students may choose not to drink might be important for understanding AmED use. Future research could assess motives separately for energy drink, alcohol, and AmED use to more precisely describe the underlying purposes for using substances alone and in combination on different occasions.

Limitations

Limitations of the current study include the single university sample, cross-sectional analysis, and dichotomous measurement of AmED use in the past 30 days. Future work should include representative studies of AmED use among adolescents and adults, use longitudinal and intensive designs to model short- and longer-term antecedents and consequences, and obtain in-depth measures of alcoholic and caffeinated beverage consumption patterns and their correlates.

Acknowledgments

The National Institute on Alcohol Abuse and Alcoholism funded the data collection (R01 AA019606 to J. Maggs) and manuscript preparation (R21 AA021426 to M. Patrick).

References

1. Reissig CJ, Strain EC, Griffiths RR. Caffeinated energy drinks--a growing problem. *Drug Alcohol Depend.* 2009; 99(1–3):1–10.10.1016/j.drugalcdep.2008.08.001 [PubMed: 18809264]
2. Marczyński CA. Alcohol mixed with energy drinks: consumption patterns and motivations for use in U.S. college students. *Int J Environ Res Public Health.* Aug; 2011 8(8):3232–3245.10.3390/ijerph8083232 [PubMed: 21909303]
3. Kponee KZ, Siegel M, Jernigan DH. The use of caffeinated alcoholic beverages among underage drinkers: results of a national survey. *Addict Behav.* Jan; 2014 39(1):253–258.10.1016/j.addbeh.2013.10.006 [PubMed: 24161375]
4. Arria AM, Caldeira KM, Kasperski SJ, Vincent KB, Griffiths RR, O'Grady KE. Energy drink consumption and increased risk for alcohol dependence. *Alcohol Clin Exp Res.* Feb; 2011 35(2):365–375.10.1111/j.1530-0277.2010.01352.x [PubMed: 21073486]
5. Arria AM, O'Brien MC. The “high” risk of energy drinks. *JAMA.* Feb 9; 2011 305(6):600–601.10.1001/jama.2011.109 [PubMed: 21266673]
6. Howland J, Rohsenow DJ, Arndt JT, Bliss CA, Hunt SK, Calise TV, Heeren T, Winter M, Littlefield C, Gottlieb DJ. The acute effects of caffeinated versus non-caffeinated alcoholic beverage on driving performance and attention/reaction time. *Addiction.* 2010; 106:335–341.10.1111/j.1360-0443.2010.03219.x [PubMed: 21134017]
7. Malinauskas BM, Aeby VG, Overton RF, Carpenter-Aeby T, Barber-Heidal K. A survey of energy drink consumption patterns among college students. *Nutr J.* 2007; 6:35.10.1186/1475-2891-6-35 [PubMed: 17974021]

8. O'Brien MC, McCoy TP, Rhodes SD, Wagoner A, Wolfson M. Caffeinated cocktails: energy drink consumption, high-risk drinking, and alcohol-related consequences among college students. *Acad Emerg Med*. May; 2008 15(5):453–460.10.1111/j.1553-2712.2008.00085.x [PubMed: 18439201]
9. CDC (Centers for Disease Control and Prevention). Fact sheets: caffeine and alcohol. Atlanta, GA: Centers for Disease Control and Prevention; 2014. <http://www.cdc.gov/alcohol/fact-sheets/cab.htm>
10. Patrick ME, Maggs JL. Energy drinks and alcohol: links to alcohol behaviors and consequences across 56 days. *J Adolesc Health*. Apr; 2014 54(4):454–459.10.1016/j.jadohealth.2013.09.013 [PubMed: 24309196]
11. Attila S, Cakir B. Energy-drink consumption in college students and associated factors. *Nutrition*. Mar; 2011 27(3):316–322.10.1016/j.nut.2010.02.008 [PubMed: 20579846]
12. Heinz AJ, de Wit H, Lilje TC, Kassel JD. The combined effects of alcohol, caffeine, and expectancies on subjective experience, impulsivity, and risk-taking. *Exp Clin Psychopharmacol*. Jun; 2013 21(3):222–234.10.1037/a0032337 [PubMed: 23750693]
13. Ferreira SE, de Mello MT, Pompeia S, de Souza-Formigoni ML. Effects of energy drink ingestion on alcohol intoxication. *Alcohol Clin Exp Res*. Apr; 2006 30(4):598–605.10.1111/j.1530-0277.2006.00070.x [PubMed: 16573577]
14. Marczynski CA, Fillmore MT. Clubgoers and their trendy cocktails: implications of mixing caffeine into alcohol on information processing and subjective reports of intoxication. *Exp Clin Psychopharmacol*. Nov; 2006 14(4):450–458.10.1037/1064-1297.14.4.450 [PubMed: 17115872]
15. Thoms DL, O'Mara RJ, Tsukamoto M, Rossheim ME, Weiler RM, Merves ML, Goldberger BA. Event-level analyses of energy drink consumption and alcohol intoxication in bar patrons. *Addict Behav*. Apr; 2010 35(4):325–330.10.1016/j.addbeh.2009.11.004 [PubMed: 19954894]
16. Miller KE. Energy drinks, race, and problem behaviors among college students. *J Adolesc Health*. Nov; 2008 43(5):490–497.10.1016/j.jadohealth.2008.03.003 [PubMed: 18848678]
17. SAMHSA (Substance Abuse and Mental Health Services Administration). Levels of risk, levels of intervention: universal, selective, & indicated prevention. n.d. <http://captus.samhsa.gov/prevention-practice/prevention-and-behavioral-health/levels-risk-levels-intervention/2>
18. Brache K, Stockwell T. Drinking patterns and risk behaviors associated with combined alcohol and energy drink consumption in college drinkers. *Addict Behav*. Dec; 2011 36(12):1133–1140.10.1016/j.addbeh.2011.07.003 [PubMed: 21840130]
19. Snipes DJ, Benotsch EG. High-risk cocktails and high-risk sex: examining the relation between alcohol mixed with energy drink consumption, sexual behavior, and drug use in college students. *Addict Behav*. Jan; 2013 38(1):1418–1423.10.1016/j.addbeh.2012.07.011 [PubMed: 23006245]
20. Velazquez CE, Poulos NS, Latimer LA, Pasch KE. Associations between energy drink consumption and alcohol use behaviors among college students. *Drug Alcohol Depend*. Jun 1; 2012 123(1–3):167–172.10.1016/j.drugalcdep.2011.11.006 [PubMed: 22138539]
21. Woolsey C, Waigandt A, Beck NC. Athletes and energy drinks: reported risk-taking and consequences from the combined use of alcohol and energy drinks. *J Appl Sport Psychol*. 2010; 22(1):65–71.10.1080/10413200903403224
22. Peacock A, Bruno R, Martin FH. Patterns of use and motivations for consuming alcohol mixed with energy drinks. *Psychol Addict Behav*. Mar; 2013 27(1):202–206.10.1037/a0029985 [PubMed: 22985055]
23. Azagba S, Langille D, Asbridge M. The consumption of alcohol mixed with energy drinks: prevalence and key correlates among Canadian high school students. *CMAJ Open*. 2013; 1(1):E19–E26.10.9778/cmajo.20120017
24. Rhoades BL, Maggs JL. Do academic and social goals predict planned alcohol use among college-bound high school graduates? *J Youth Adolesc*. 2006; 35(6):913–923.10.1007/s10964-006-9040-y
25. Cooper ML. Motivations for alcohol use among adolescents: development and validation of a four-factor model. *Psychol Assess*. 1994; 6(2):117–128.10.1037/1040-3590.6.2.117
26. Grekin ER, Sher KJ, Krull JL. College spring break and alcohol use: effects of spring break activity. *J Stud Alcohol Drugs*. Sep; 2007 68(5):681–688. [PubMed: 17690801]
27. Park CL, Levenson MR. Drinking to cope among college students: Prevalence, problems and coping processes. *J Stud Alcohol*. 2002; 63:486–497. [PubMed: 12160108]

28. Patrick ME, Schulenberg JE, O'Malley PM, Johnston LD, Bachman JG. Adolescents' reported reasons for alcohol and marijuana use as predictors of substance use and problems in adulthood. *J Stud Alcohol Drugs*. 2011; 72(1):106–116. [PubMed: 21138717]
29. Simon, M.; Mosher, J. Alcohol, energy drinks, and youth: A dangerous mix. San Rafael, CA: Marin Institute; 2007.
30. U.S. Food and Drug Administration. FDA News Release: FDA warning letters issued to four makers of caffeinated alcoholic beverages. U.S. Department of Health and Human Services; Nov 17. 2010 <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm234109.htm>
31. Patrick ME, Maggs JL. College students' evaluations of alcohol consequences as positive and negative. *Addict Behav*. Dec; 2011 36(12):1148–1153.10.1016/j.addbeh.2011.07.011 [PubMed: 21855224]
32. Patrick ME, Maggs JL, Osgood DW. LateNight Penn State Alcohol-Free Programming: Students Drink Less on Days They Participate. *Prev Sci*. Jun; 2010 11(2):155–162.10.1007/s11121-009-0160-y [PubMed: 20020210]
33. Maggs, JL. Unpublished Doctoral dissertation. University of Victoria, British Columbia; 1993. Adolescent alcohol use as a goal-directed behavior.
34. Patrick ME, Maggs JL. Profiles of motivations for alcohol use and sexual behavior among first-year university students. *J Adolesc*. Oct; 2010 33(5):755–765.10.1016/j.adolescence.2009.10.003 [PubMed: 19922994]
35. Kazzaz, K. The Chronicle: The Independent Daily at Duke University. Sep 26. 2006 Monster energy drink pumps up Sigma Nu.
36. Petersen, J. Minnesota Daily. November. 2007 Campus fraternities go for corporate sponsorships.
37. Kensinger W, Woolsey C, Divin A, Tapps T. College student motivational determinants for combining alcohol and energy drinks: early identification could be the key. *Drug-Educ Prev Polic*. 2014; 21(1):50–55.10.3109/09687637.2013.829801
38. Marczinski CA, Fillmore MT, Henges AL, Ramsey MA, Young CR. Mixing an energy drink with an alcoholic beverage increases motivation for more alcohol in college students. *Alcohol Clin Exp Res*. Feb; 2013 37(2):276–283.10.1111/j.1530-0277.2012.01868.x [PubMed: 22724427]
39. Kunin D, Gaskin S, Rogan F, Smith BR, Amit Z. Caffeine promotes ethanol drinking in rats: examination using a limited-access free choice paradigm. *Alcohol*. 2000; 21(3):271–277.10.1016/S0741-8329(00)00101-4 [PubMed: 11091031]
40. Rezvani AH, Sexton HG, Johnson J, Wells C, Gordon K, Levin ED. Effects of caffeine on alcohol consumption and nicotine self-administration in rats. *Alcohol Clin Exp Res*. 2013; 37(9):1609–1617.10.1111/acer.12127 [PubMed: 23895206]

Table 1
Logistic Regressions Predicting Consumption of Alcohol Mixed with Energy Drinks (AmED)

	Bivariate			AmED Use in Past Month		
	O.R.	95% C.I.	O.R.	Multivariable	O.R.	95% C.I.
Gender (Male)	1.32	[0.92, 1.88]				
Race/Ethnicity						
White non-Hispanic	1.32	[0.89, 1.95]				
Hispanic	1.34	[0.90, 1.99]				
Asian non-Hispanic	0.63*	[0.40, 0.99]				
Black non-Hispanic	0.72	[0.42, 1.22]				
Multiple races non-Hispanic	1.07	[0.57, 2.01]				
Fraternity/Sorority Participation	2.48***	[1.53, 4.01]	1.51	[0.89, 2.58]	1.14	[0.66, 1.99]
Athletics Participation	1.61*	[1.11, 2.33]	1.27	[0.85, 1.90]	1.26	[0.82, 1.92]
Off-Campus Residence	2.55***	[1.77, 3.67]	1.67*	[1.11, 2.51]	1.46	[0.95, 2.23]
Number of Credits	0.98	[0.71, 1.35]				
Early Morning Classes	0.78***	[0.70, 0.87]	0.86*	[0.76, 0.97]	0.89	[0.79, 1.01]
Honors Program	0.25**	[0.09, 0.70]	0.39	[0.13, 1.13]	0.40	[0.13, 1.22]
Fun/Social Motives for Drinking	1.74***	[1.46, 2.08]	1.67***	[1.29, 2.15]	1.22	[0.92, 1.62]
Relax Motives for Drinking	1.48***	[1.26, 1.74]	0.95	[0.73, 1.22]	0.96	[0.73, 1.25]
Image Motives for Drinking	1.57***	[1.29, 1.90]	1.03	[0.79, 1.34]	1.17	[0.88, 1.55]
Physical/Behavioral Motives for Not Drinking	0.75**	[0.63, 0.89]	0.77**	[0.63, 0.94]	0.79*	[0.64, 0.98]
Driving Motives for Not Drinking	0.92	[0.79, 1.06]				
Binge Drinking (4+/5+ Drinks), Past 2 Weeks	7.25***	[4.71, 11.16]			4.83***	[2.98, 7.83]

N=614.

* $p < .05$,

** $p < .01$,

*** $p < .001$.