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Patterns of Media Use and Alcohol Brand Consumption among Underage Drinking Youth in the U.S.

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Alcohol messages frequently appear in current media; content analyses report that pro-drinking messages in programming and brand advertisements are commonly conveyed through print, radio, television, movies, and now the Internet and social media (Dal Cin, Worth, Dalton, & Sargent, 2008; Jernigan, Ostroff, & Ross, 2005; Moreno, Briner, Williams, Brockman, Walter, & Christakis, 2010; Primack, Nuzzo, Rice, & Sargent, 2012; Rhoades & Jernigan, 2013; Russell & Russell, 2009). Research drawing on the Message Interpretation Process (MIP) model suggests a process by which young people are exposed to media messages about alcohol, and then use logic and affect to internalize these messages (Austin, Chen, & Grube, 2006). Responses to alcohol messages are mediated through a person's expectancies and normative beliefs about alcohol. Further, these normative beliefs, which include perceptions of approval, benefits, and social norms are shaped by media exposure (Martin, Snyder, Hamilton, Fleming Milici, Slater, Stacy, Chen & Grube, 2002).

Early studies reported mixed findings regarding the relationship between media exposure and alcohol use. Past research has found that those people who watch more television also drink less alcohol (Hansen, 1989; Signorielli, 1987) while other studies have discovered a small but significant relationship between total media (and presumably advertising)

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exposure and reported alcohol use (Strickland, 1983). When more precise measures are used, however, such as asking about exposure to specific media genres, studies show a significant and positive relationship between media exposure and alcohol use (Anderson, de Bruijn, Angus, Gordon & Hastings, 2009; Smith & Foxcroft, 2009).

For example, with both U.S. and German adolescents, previous exposure to movies that portrayed alcohol use was a significant predictor of both drinking initiation and heavy episodic drinking (Hanewinkel & Sargent, 2009; Sargent, Wills, Stoolmiller, Gibson, & Gibbons, 2006). Importantly, this effect was found when controlling for both personal and social predictors of alcohol use (Hanewinkel & Sargent, 2009). Similarly, a school-based study conducted in South Dakota showed that sixth-graders who frequently watched televised sports programs and read magazines that featured alcohol advertisements were more likely to consume beer and to have increased drinking intentions after advancing to seventh grade (Collins, Ellickson, McCaffrey, & Hambarsoomians, 2007). A national study found that underage youth reporting higher exposure to alcohol advertising, as well as those living in media markets with greater per capita spending on alcohol advertising, drank more and evidenced more hazardous alcohol use trajectories well into young adulthood (Snyder, Milici, Slater, Sun, & Strizhakova, 2006).

After examining these and other longitudinal cohort studies, two teams of reviewers concluded that exposure to alcohol advertising and other promotional activities is associated with subsequent alcohol use (Anderson, de Bruijn, Angus, Gordon & Hastings, 2009; Smith & Foxcroft, 2009).

The purpose of this study was to explore the relationship between media and alcohol use among a national sample of alcohol-consuming U.S. adolescents and young adults. Going beyond previous studies, this work investigated whether underage drinkers' differential use of various popular media was related to their consumption of specific brands of alcohol. Such research sets the stage for determining if there are different groups of media users and if this grouping is associated with drinking behaviors and alcohol brand use.

METHODS

Our sample and data collection procedures, including the calculation of response rates, have been described extensively elsewhere (Siegel, DeJong, Naimi, et al., 2013). Briefly, a sample of 1,032 underage youths between the ages of 13 and 20 years who had consumed at least one drink of alcohol in the past 30 days was drawn from a pre-recruited Internet panel maintained by Knowledge Networks (Palo Alto, CA). Participants ages 18 to 20 were screened to determine their drinking status and then provided with the online survey. The screening completion rate was 46.2; the survey completion rate was 93.8%. Participants, aged 13 to 17 years, were identified through a parental consent procedure, screened to determine their drinking status, and sent the survey. Among this age group, parental consent was 49.2% of households contacted; the screening completion rate was 94.0%; and the survey completion rate was 95.9%.

The study protocol was approved by the Institutional Review Board of the Boston University Medical Center.

Measures

Brand Use—The online survey asked respondents to report their use of 898 alcohol brands, grouped by category, including 306 table wines, 132 beers, 86 vodkas, 77 cordials/liqueurs, 62 flavored alcoholic beverages, 54 rums, 33 tequilas, 29 whiskeys, 27 gins, 25 scotches, 23 bourbons, 15 brandies, 10 alcoholic energy drinks, 9 cognacs, 5 low-end fortified wines, and 5 grain alcohols. For each alcohol category, the respondents checked off which specific brands they had consumed during the past 30 days.

For this analysis, we focused on the five most popular alcohol brands consumed by males, which together accounted for 43.6% of the total number of drinks they consumed during the past 30 days, and on the five most popular brands consumed by females, which accounted for 59.1% of the total number of drinks they consumed (Siegel et al., 2013). The top-five brands for males were consumed by more than half of the males in the study; prevalence of consuming any of those brands was 52.0%. Similarly, the top-five brands for females were also consumed by more than half of females in the study; prevalence for consuming any of those brands was 51.0%.

Media Exposure—The respondents indicated which magazines they had read during the past 30 days from a list of 20 magazines with the greatest alcohol advertising dollars in the two-year period 2009–2010. Similarly, they indicated which television programs they had watched in the past 30 days from a list of 20 shows with the highest count of alcohol advertisements in 2009–2010, as reported by Nielsen.¹

Celebrity Recognition—The survey had a challenging multiple-choice quiz with eight questions. For each, the respondents were shown a celebrity's photograph and then asked to select a name, television show, or known achievement associated with that celebrity. Each of these eight items was treated as a separate variable, with the respondent's answer coded as correct or incorrect.

Brand Awareness—Brand awareness was measured with a 16-question multiple-choice quiz that asked respondents to identify common logos and images associated with different alcohol brands. Each respondent's score was the total number of correct responses.

Socio-demographics—The survey asked respondents to report their sex, age, race/ethnicity, household income, and geographic region (see Table 2 for the response categories).

Drinking Behaviors—The survey asked the respondents several questions about their alcohol consumption in order to assess: 1) the number of days they consumed alcohol during

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the past 30 days; 2) the total number of drinks they consumed in the past 30 days (based on the average number of drinks they reported having per drinking day); 3) the number of days they engaged in heavy episodic drinking (defined as having five or more drinks in a row) in the past 30 days; and 4) the total number of drinks they consumed in the past 30 days when engaging in heavy episodic drinking (based on the average number of drinks they reported having per such episode).

Behavioral Risk Factors—The survey asked the respondents to indicate on how many days they smoked cigarettes in the past 30 days; this variable was dichotomized as 0 vs. 1+ cigarettes. The respondents also indicated how frequently they wear a seatbelt when riding in or driving a car (never, rarely, sometimes, most of the time, always).

Age of alcohol initiation was determined by asking respondents how old they were when they had their “first drink of alcohol other than a few sips.” This variable was dichotomized as < 13 years vs. 13 years or older.

Finally, the survey asked respondents whether they have a parent, guardian, or other adult caretaker who drinks alcohol at least once per month. If yes, then the respondents described how often that individual “has perhaps too much alcohol to drink.” If there was more than one adult caretaker in the household who drank, then the respondent described the individual who drinks alcohol most frequently. The response options describing the adult drinker were collapsed into four categories: 1) never; 2) 1–3 times per month; 3) 1–4 times per week; and 4) nearly every day or more (up to and including three or more times a day).

Statistical Analyses

We used principal components analysis to combine the celebrity recognition and media exposure questions into a smaller number of factors. These factors were then used as predictors in a latent class model to create clusters of respondents who were similar in their media use patterns (Magidson & Vermunt, 2004). The number of clusters was chosen by selecting the model with the smallest number of parameters that tested positive using a bootstrap likelihood ratio chi-square test (Magidson & Vermunt, 2004).

We profiled each of the resulting clusters using bivariate associations between cluster membership and socio-demographic variables, drinking behaviors, and behavioral risk factors, using chi-square (χ^2) tests for proportions and Kruskal-Wallis tests for median differences for continuous variables.

Brand choice may be influenced by sex, and the media clusters revealed by our latent class analysis were also associated with sex. For that reason, we modeled the association between cluster membership and drinking individual brands in the past 30 days for males and females separately, selecting the top five brands for each sex to control for potential confounding by sex. These analyses provided odds ratios estimated with logistic regression models using a propensity score to adjust for age, race/ethnicity, household income, geographic region, frequency of parent’s alcohol overconsumption, cigarette smoking, and seatbelt use (Brookhart, Schneeweiss, Rothman, et al., 2006).

Prior research has established that peers have an influence on drinking behaviors (Chung, Garfield, Elliott, et al., 2010; Donovan, 2004; Engels, Knibbe, Vries, et al., 1999; Mundt, 2011; Wills & Cleary, 1999), but we are not aware of any published research that examines the influence of peer brand choices on adolescent brand selection. Even so, we did consider peer influence as a potential confounder. We asked those participants who had a choice of multiple brands during their last drinking occasion to provide reasons why they chose to drink a specific brand. Among the 17 possible responses were: “A friend or sibling recommended it to me,” “I have seen other people my age drinking this brand,” “My close friends drink this brand,” and “People my age I admire drink this brand.” We reduced the brand choice reasons to four latent factors using exploratory factor analysis, finding that the peer influence responses loaded highly onto one factor. We incorporated this “peer influence” factor into our propensity score and then re-ran all of the models to test for peer influence as a potential confounder. The effect estimates were not changed, leading us to conclude that peer influence was not confounding our results.

RESULTS

Fitting Latent Class Models

We tested the model fit for one to six clusters in the latent class analysis. We found that a four-cluster solution provided the best fit (Table 1). The four-cluster solution had the best Bayesian Information Criterion (BIC) and was the model presenting the fewest parameters that had a non-significant p-value (both chi-square and bootstrap) for the test-of-model fit.

Profiles of Media Use Clusters

The four media clusters were: C1, “General Audience” ($n= 697$, 68.5% of the overall sample); C2, “Celebrity Watchers” ($n= 175$, 17.2%); C3, “Heavy Mainstream Media Users” ($n= 101$, 9.9%); and C4, “Late Night Cable Viewers” ($n= 44$, 4.3%). A description of each cluster appears below and in Table 2.

C1, “General Audience”—This cluster represents the majority of the participating youth. From the lists presented in the survey, this group selected on average 0.3 (SD= 0.7) magazines and 3.4 (SD= 3.0) television shows. This group included more males than females, but its composition was proportional to the overall study sample with regard to race/ethnicity, household income, and U.S. regions. Group members were less likely to report cigarette smoking or not using seat belts.

C2, “Celebrity Watchers”—This cluster was disproportionately female and from upper income households and the Northeast. This group selected on average 2.5 (SD= 1.9) magazines and 4.2 (SD= 2.7) television shows. Significantly higher percentages of these individuals read *Cosmopolitan*, *People Magazine*, and *US Weekly* compared to youth in the other clusters. These youth watched fewer television shows than cluster C3, but did tune into popular shows like *CSI* and *King of Queens* more frequently than did the other clusters. Significantly more of these youth (11.1%), compared to those in other clusters, indicated having a parent, guardian, or other adult caretaker who drank excessively nearly every day or more.

C3, “Heavy Mainstream Media Users”—This cluster was also comprised predominantly of females, but in contrast to the C2 cluster, these youth were from lower income households and Southern states. On average, they said they read 4.1 (SD= 3.0) magazines and watched 6.0 (SD= 3.8) television shows, the most of any cluster. A fifth or more of these youth said they read *Cosmopolitan*, *Vogue*, *People*, *In Style*, *In-Touch*, *Allure*, *Maxim*, and *Sports Illustrated*. Many youth in this cluster said they watched broadcast crime (*Law and Order: SVU*, *NCIS*, and *CSI*) and cable reality shows (*Man v. Food*, *Ghost Adventures*), significantly more than those in other clusters. Around two-fifths (40.6%) said they smoked cigarettes.

C4, “Late Night Cable Viewers”—This smaller cluster was mostly male and from upper-income households and Southern and Western states. Individuals in this group selected on average 1.6 (SD= 1.2) magazines and 5.0 (SD= 2.8) television shows. Around 85% of these youth regularly read *Rolling Stone* magazine, significantly more than youth in other clusters. Around two-thirds indicated that they watched *The Daily Show*, *The Colbert Report*, and *Tosh O*; these percentages were at least twice as high as those observed in the other clusters. A high percentage of these youth were cigarette smokers (57.1%).

Age of alcohol initiation did not differ significantly by cluster. The number of drinking days ($\chi^2 = 13.0$, $df=3$, $p < 0.001$) and the total number of drinks consumed in the past 30 days did differ by cluster ($\chi^2 = 11.2$, $df=3$, $p < 0.05$). Those in the Late Night Cable Viewers cluster were the heaviest drinkers, reporting a median total of 16 drinks (interquartile range 3–50) in the past 30 days.

The percentage of respondents who engaged in one or more episodes of heavy drinking in the past 30 days also differed by cluster ($\chi^2 = 18.2$, $df=3$, $p < 0.001$). The highest reported rate was among youth in the Heavy Mainstream Media Users cluster (64.9%), followed by somewhat similar rates among youth in the Celebrity Watchers (61.9%) and Late Night Cable Viewers (60.8%) clusters. Those in the General Audience (48.4%) cluster had the lowest reported rate. The total number of days with an episode of heavy drinking and the total number of drinks consumed during those episodes were also highest among the Late Night Cable Viewers.

We profiled drinking behaviors, alcoholic beverage types, and brands across the media clusters before modeling the association between media clusters and brands consumed in sex-stratified, adjusted models. The types of alcoholic beverages consumed differed across media clusters. Significantly greater percentages of Late Night Cable Viewers (83.5%) said they had consumed beer in the last 30 days, compared to those in the Celebrity Watchers (77.7%), Heavy Mainstream Media Users (77.4%), and General Audience (64.8%) clusters ($\chi^2 = 19.7$, $df=3$, $p < 0.001$).

The highest consumption of flavored alcoholic beverages (FABs, also known as “alcopops”) was among those in the Heavy Mainstream Media Users (65.1%) and Celebrity Watchers (61.6%) clusters, compared to those in the General Audience (45.4%) and Late Night Cable Viewers (29.6%) clusters ($\chi^2 = 31.7$, $df=3$, $p < 0.001$). Vodka consumption was highest among youth in the Celebrity Watchers (60.5%) and Late Night Cable Viewers (54.8%)

clusters, compared to youth in the General Audience (36.9%) and Heavy Mainstream Media Users (32.2%) clusters ($\chi^2=38.9$, $df=3$, $p<0.001$).

While overall alcohol brand awareness did not differ significantly across the clusters, awareness of specific brands did vary across the groups. Of the 16 brand logos tested, awareness varied by cluster at $p<0.05$ for seven of the brands (Absolut, Smirnoff Ice, Bacardi, Captain Morgan, Seagram's, Corona, and Heineken).

For example, 93.9% of the Late Night Cable Viewers cluster compared to 79.0% of the Heavy Mainstream Media Users cluster could identify the Heineken logo. Fully 74.7% of the Late Night Cable Viewers cluster compared to 52.8% of the Heavy Mainstream Media Users cluster knew the Smirnoff Ice logo. Significantly more youth in the Celebrity Watchers cluster (93.1%) could identify the Corona logo compared to the other clusters. Higher percentages in the Heavy Mainstream Media Users (42.3%) and Celebrity Watchers (41.6%) clusters were aware of the Seagram's logo compared to General Audience (30.6%) and Late Night Cable Viewers (28.2%) clusters.

Table 2 shows the variation in brand consumption across media clusters. Higher percentages of Celebrity Watchers reported consumption of Smirnoff Malt Beverages, Mike's Beverages, and Absolut vodka compared to youth in other clusters. Similarly, more Heavy Mainstream Media Users consumed Budweiser than youth in other groups. Late Night Cable Viewers (54.8%) were more likely to report drinking Coors Light, with a rate of drinking Smirnoff Vodka similar to Celebrity Watchers, but more than General Audience and Heavy Mainstream Media Users.

Association between Media Clusters and Brand Consumption by Sex

When stratified by sex, multivariate models to predict brand consumption showed that the media clusters were a significant predictor for three of the top five brands consumed by females and three of the top five brands consumed by males, when controlling for age, race/ethnicity, household income, geographic region, frequency of parent's alcohol overconsumption, cigarette smoking, and seatbelt use (see Table 3).

For example, in the last 30 days, females in the Celebrity Watchers cluster were 1.8 and 2.4 times more likely to have consumed Bud Light and Mike's Beverages, respectively, than females in the General Audience cluster. Females in the Heavy Mainstream Media Users cluster were 9.8 times more likely to have consumed Budweiser than those in the General Audience cluster. And males in the Late Night Cable Viewers cluster were 3.1 times more likely to have had Coors Light in the last 30 days, compared to males in the General Audience cluster.

DISCUSSION

Underage youth can be classified into several distinct media use clusters that are associated with the consumption of different alcohol brands, after adjusting for their socio-demographic characteristics and behavioral risk factors. Some of these media clusters are also associated with high-risk drinking behaviors.

The Late Night Cable Viewers and the Heavy Mainstream Media Users reported the highest number of heavy episodic drinking days and the greatest number of drinks per episode. Among males in these two clusters, there were much higher rates of recent Coors Light consumption. Among females in the Heavy Mainstream Media Users cluster, there was a much higher rate of Budweiser consumption. Youth in the Celebrity Watchers cluster appeared to be the highest consumers of popular brands of “alcopops.”

Media clusters represent latent classes of youth ages 13–20 who share similar media profiles, have similar social and lifestyle aspirations, and may have similar levels of exposure to advertising and embedded alcohol messaging. These media clusters do not specify levels of exposure to alcohol advertising and brand-specific promotional messages, but may serve to inform future research focusing on that topic.

Future research that incorporates this cluster-specific information, along with brand-specific consumption data, would help extend and refine several important findings from prior research. For example, one study found that alcohol advertising on cable television increases with the presence of adolescent audiences (Chung et al., 2010), while another found that youth are watching channels and programming where alcohol advertising frequently occurs (Center on Alcohol Marketing and Youth, 2010). Prior research has also established that general pro-drinking messages are commonly featured in youth-oriented magazines and radio (Jernigan, Ostroff, Ross, et al., 2006; Jernigan, Ostroff, Ross, et al., 2007; Rhoades & Jernigan, 2012). Moreover, teenagers who read magazines with alcohol advertisements are more likely to consume alcoholic beverages (Collins et al., 2007; Snyder et al., 2006; Stacy, Zogg, Unger et al., 2004).

Message placement is extremely purposeful, with the intention of reaching particular audiences and building brand loyalty over a lifetime (Aaker, 1991). The current media environment involves product placement within program content as well as interstitial advertisements promoting specific brands (Russell & Russell, 2009). This study demonstrates that groups of underage youth exhibit notable differences in their alcohol consumption patterns and their use of specific brands. A logical next step would be to examine if this differential media use is predictive of varying amounts of brand message exposures, communicated through program content and promoted through advertisements.

The study has two important limitations. First, the survey is cross-sectional and therefore the analysis is restricted to assessing correlational relationships. We cannot determine whether brand consumption precedes media use patterns or whether the media use patterns precede brand consumption. Second, the survey did not directly measure exposure to alcohol advertising or to embedded alcohol messages in the programs themselves. Therefore, we do not conclude that specific advertising or program content is associated with consumption of specific brands. To assess this association, future research will examine the placement of alcohol advertisements in relation to these media clusters and control for other factors such as advertising cost and audience demographics. This study lays a foundation for future research by defining groups of underage drinkers who are homogeneous with respect to their media use and thereby allowing for simultaneous control of a the myriad of factors that make up today’s complex media landscape.

Among the strengths of this study are the specific measures used, which reflect the media and alcohol brands currently encountered by youth. To date, practically all other studies examining the relationship between media use and alcohol consumption have relied on general and global estimates of media use, and previous studies of underage drinking have not examined alcohol brand use for such an exhaustive list of brands.

This study represents a novel effort to tease out the relationship between youth media habits and youth alcohol consumption. By using more precise measures, the study found clear evidence that distinct youth media use profiles are associated with differential alcohol consumption habits. These findings can be used to inform further research on the development and placement of alcohol counter-messages, the impact of such exposure on actual drinking behaviors, and the implementation of regulatory measures and self-regulatory activities to reduce youth exposure to alcohol marketing messages.

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Abbreviations

LCA	Latent Class Analysis
C1	Cluster 1
C2	Cluster 2
C3	Cluster 3
C4	Cluster 4

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Table 1

Latent Class Model Fit Criteria

Model	Bayesian Information Criterion					
	Log-Likelihood	(BIC)	Number of Parameters	Degrees of Freedom	Chi-square p-value	Bootstrap p-value
1-Cluster	-4,181	8,411	7	247	0.00	0.00
2-Cluster	-3,702	7,514	16	238	0.00	0.00
3-Cluster	-3,638	7,449	25	229	0.00	0.00
4-Cluster	-3,574	7,384	34	220	0.07	0.12
5-Cluster	-3,563	7,425	43	211	0.17	0.29
6-Cluster	-3,537	7,433	52	202	0.90	0.84

Table 2
 Socio-demographic characteristics, behavioral risk factors, and brand consumption by Media Cluster (N=1,017).

Predictor Variables	Total % (N=1017)	Cluster 1 General Audience % (N=697)	Cluster 2 Celebrity Watchers % (N=175)	Cluster 3 Heavy Mainstream Media Users % (N=101)	Cluster 4 Late Night Cable Viewers % (N=44)	Chi-square test (χ^2)
<u>Sex</u>						
Female	48.9	41.0	75.4	72.5	13.8	110.4 (df=3), $p < 0.001$
<u>Race/Ethnicity</u>						
Non-Hispanic White	57.5	57.4	61.9	49.8	59.8	
Black	9.9	10.4	9.7	8.6	7.6	
Hispanic	23.8	24.0	20.4	28.5	22.2	
Other	8.8	8.3	8.1	13.1	10.5	6.67 (df=9), NS
<u>Age</u>						
18 and Older	69.3	69.3	72.6	65.6	63.7	2.21 (df=3), NS
<u>Household Income</u>						
<\$15K	15.0	14.6	8.9	25.9	19.3	
\$15–39K	19.0	20.5	17.2	16.8	7.8	
\$40–99K	41.9	42.6	39.5	45.6	32.7	
\$100 and higher	24.1	22.3	34.3	11.8	40.2	38.2 (df=9), $p < 0.001$
<u>Geographical Region</u>						
Midwest	24.7	24.1	29.3	21.1	22.8	
Northeast	19.3	18.4	27.4	16.9	6.8	
South	31.9	31.6	27.6	38.3	38.7	
West	24.2	25.9	15.7	23.7	31.6	22.3 (df=9), $p < 0.01$
<u>Behavioral Risk Factors</u>						
Seatbelt Use (most of the time/always)	89.7	92.0	89.1	74.0	91.6	31.1 (df=3), $p < 0.001$
Cigarette Smoking (1+ days in the past 30 days)	26.7	23.2	25.2	40.6	57.1	34.6 (df=3), $p < 0.001$
Alcohol Initiation <13 years	18.4	17.6	21.4	21.8	12.6	3.1 (df=3), NS
<u>Frequency of Parent's Alcohol Overconsumption</u>						
Never	65.4	66.5	59.3	66.7	68.7	
1–3 times a month	20.2	21.3	18.9	15.9	19.2	

Predictor Variables	Total % (N=1017)	Cluster 1 General Audience % (N=697)	Cluster 2 Celebrity Watchers % (N=175)	Cluster 3 Heavy Mainstream Media Users % (N=101)	Cluster 4 Late Night Cable Viewers % (N=44)	Chi-square test (χ^2)
1-4 times a week	9.2	8.6	10.8	11.1	7.1	18.8 (df=0), $p < 0.05$
Nearly every day or more	5.3	3.6	11.1	6.3	5.0	
Brand Consumption						
Bud Light	27.9	27.0	29.8	34.1	21.3	3.48 (df=3), NS
Smimoff Malt Beverage	16.7	14.4	27.4	14.4	14.7	17.6 (df=3), $p < 0.001$
Budweiser	14.8	12.5	13.1	38.2	4.6	50.8 (df=3), $p < 0.001$
Smimoff Vodka	12.3	10.5	20.4	8.3	18.9	15.9 (df=3), $p < 0.001$
Coors Light	12.9	10.8	17.6	12.1	27.9	15.0 (df=3), $p < 0.01$
Jack Daniels	11.6	11.2	8.6	16.8	18.0	6.14 (df=3), NS
Mike's Beverage	10.9	8.3	21.1	15.0	2.2	29.1 (df=3), $p < 0.001$
Absolut Vodka	10.2	8.9	18.4	7.6	3.5	17.3 (df=3), $p < 0.001$

Table 3

Multivariate models predicting consumption of the top 5 alcohol brands in the last 30 days, by sex.

Females	Odds Ratio* (95% Confidence Interval)			
	General Audience	Celebrity Watchers	Heavy Mainstream Media Users	Late Night Cable Viewers
Bud Light	1.00	1.75 (1.10,2.79)	1.77 (1.00,3.12)	0.22 (0.01,5.30)
Smirnoff Malt Beverages	1.00	0.93 (0.57,1.54)	0.43 (0.19,0.94)	0.21 (0.01,6.01)
Mike's Beverages	1.00	2.39 (1.34,4.27)	2.73 (1.29,5.78)	0.67 (0.03,15.97)
Budweiser	1.00	1.53 (0.74,3.20)	9.80 (4.87,19.69)	NA
Smirnoff Vodka	1.00	1.58 (0.88,2.86)	0.42 (0.13,1.33)	1.19 (0.11,13.06)
Males				
Bud Light	1.00	0.51 (0.23,1.15)	0.98 (0.39,2.47)	0.85 (0.38,1.93)
Budweiser	1.00	1.42 (0.65,3.11)	4.44 (1.89,10.42)	0.29 (0.07,1.26)
Jack Daniel's	1.00	0.74 (0.27,2.04)	1.84 (0.62,5.43)	1.63 (0.66,4.03)
Coors Light	1.00	0.88 (0.32,2.44)	4.11 (1.54,10.97)	3.07 (1.36,6.94)
Absolut	1.00	0.41 (0.08,1.95)	3.22 (1.12,9.31)	0.40 (0.06,2.73)

* All models adjusted for age, race/ethnicity, household income, U.S. geographic region, frequency of parent's alcohol overconsumption, cigarette smoking, and seatbelt use.

Bold typeface highlights significant odds ratios.