Published in final edited form as:

Am J Drug Alcohol Abuse. 2013 January ; 39(1): 8–15. doi:10.3109/00952990.2012.720320.

Correlates of Concurrent Energy Drink and Alcohol Use among Socially Active Adults

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Abstract

Background—Research indicates that energy drink consumption and the combined use of energy drinks and alcohol are popular among young adults, although this research has typically focused on college students. Because of the potential for harms associated with this combination, it is critical to understand use among adults in nightlife scenes who may be most at risk for harms associated with combined energy drink and alcohol consumption.

Objectives—By focusing our sample on individuals in a range of nightlife scenes, we aim to gain a deeper understanding of the demographic factors associated with energy drink use and combined energy drink and alcohol consumption to benefit the targeting of intervention and prevention efforts beyond college campuses.

Methods—Using a field-based survey in New York City to survey adults active in various nightlife scenes, this study reports on the survey results of 1476 venue patrons at venues in five nightlife scenes in addition to college bar scenes

Results—Men, younger individuals, Latinos, and sexual minority individuals reported higher prevalence of recent energy drink consumption. Younger individuals, men, and those recruited in gay venues reported higher prevalence of combining alcohol and energy drinks.

Conclusion—These findings provide information useful to target education and prevention efforts. They also suggest the need for additional research to understand differences in motivations for use and in the behavioral and alcohol-related outcomes associated with consuming energy drinks and combining them with alcohol.

Keywords

energy drink; alcohol

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Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

INTRODUCTION

Since energy drinks were introduced into the market in the late 1990s, their popularity among young adults (18–29-year-olds) has grown exponentially (1). This is not surprising, considering the extent to which these drinks have been marketed toward this age demographic (1–3). The adverse physical health and behavioral effects associated with energy drink consumption, especially when combined with alcohol in such popular nightlife drinks like “Red Bull and vodka” and “Jägerbombs” (4–6), include experiencing higher rates of alcohol-related harm, such as overconsumption, being taken advantage of sexually, taking advantage of others sexually, riding in a car with someone who is under the influence of alcohol, being hurt or injured, or requiring medical treatment (6). In light of these adverse effects, the FDA declared caffeine to be an illegal and unsafe additive to manufactured alcoholic beverages (7). Yet, young people continue to combine them through the use of multiple products.

Currently, most studies focusing on this phenomenon are restricted to college students. Yet, many young adults are not in college settings, particularly those beyond the age of 22. Also, recent research on the energy drink consumption patterns of college students indicates varied and sometimes contradictory findings. While some studies report that around half of those sampled have consumed at least one energy drink within the past month (2), others report that only around a third of their sample reported consumption in the past month (3). Examining the combination of alcohol and energy drinks, one study reported that 54% of their sample had combined alcohol with energy drinks during the past month (2), whereas other studies reported prevalence as low as 23% (8). Additionally, while some studies state that women report the highest rates of energy drink consumption (2), other studies have indicated that men are more likely to consume energy drinks (3,6). Such variation may reflect differences in the local cultures on different campuses. Further, community-based samples have yielded much lower estimates, with one study finding that 25% of respondents reported energy drink use in the last year and only 6% reported combining energy drinks with alcohol in the past year (9).

This article diverges from previous energy drink research that has relied solely on sampling college students (2–6,8) and instead seeks to explore the consumption patterns among adults throughout various urban nightlife scenes. Youth cultures function as key contexts shaping substance use and have been previously associated with other drug trends (10–12). Specifically, gay and lesbian subcultures have been noted as being scenes that encourage binge drinking and other sensation-seeking behaviors (13–16). The electronic dance music (EDM) scene is well known to be associated with illicit substance use like ecstasy and other club drugs (12,17,18). The use of amphetamines has been well documented within the rock scene (19) as has the use of methamphetamine within gay clubs (20,21). As such, these subcultural scenes provide important areas of focus for studying emerging substance use trends. Furthermore, the high-risk traits which are well represented within these scenes (i.e., sensation seeking and heavy drinking) provide conditions that, as per previous research, should be conducive toward combining energy drinks and alcohol (3,6,22). However, little research has been done to highlight the prevalence of energy drink consumption as well as combined alcohol and energy drink consumption among young adults participating within these various nightlife scenes.

By focusing our sample on young adults attending a wide range of nightlife scenes, we aim to gain a deeper understanding of the role of demographic factors and venues in energy drink use and combined energy drink and alcohol consumption so as to benefit the targeting of education and prevention efforts beyond college campuses. As event-level research indicates that bar patrons who had combined energy drinks with alcohol left the bar more

intoxicated than noncombining patrons and were also more likely to report that they intended to drive home from the bar (23), identifying the specific groups, demographics, and venues is key to intervening on the potentially harmful behavioral effects of this combination.

METHODS

This project was designed to examine health-related behaviors among socially active young adults using a field-based survey in New York City (NYC) to assess young adults active in various nightlife scenes. The examination of socially active young adults allows us to focus our sampling methods on social venues inhabited by this population.

Sampling

To generate the sample for this study, we utilized time–space sampling (TSS) in a wide range of urban venues that house nightlife scenes. TSS was originally developed to capture hard-to-reach populations (24–26), but it has also been found constructive for generating estimates of venue-based populations (27). As young adults active in nightlife scenes can be considered a venue-based population, we use venues as our basic unit of sampling in order to systematically generate a sample of socially active young adults involved in urban nightlife. We captured a range of variability among these young adults through randomizing (1) the venues attended and (2) the days/times which we attended them.

We randomized “time” and “space” using a sampling frame of venues and times of operation. To construct the sampling frame, ethnographic fieldwork conducted over the previous 12 months enabled the assessment of “socially viable” venues for each day of the week. We generated lists of socially viable venues for each day of the week across several key youth cultures – e.g., EDM, gay clubs, lesbian parties, indie rock scene, and the Brooklyn warehouse scene. Several of these scenes have previously been identified as distinct subcultures (12,19,21,28,29). Venue categorizations (into the different scenes) were made based on the knowledge gained during the previous year of ethnographic fieldwork in addition to the genre of music (for indie music and EDM venues) or publicized events (lesbian nights, college nights). The venue list consisted of 141 venues, including bars, clubs, lounges, and performance venues. For each day of the week, all socially viable venues were listed and assigned a number. Using a random digit generator, a random number was drawn corresponding to a particular venue on a particular day. Ultimately, this process yielded our schedule of venues for each month; 51 venues were sampled at least once. The research team did not secure permission from the venues prior to recruitment at the venues. Questions about energy drink consumption were asked between October 2011 and February 2012.

Once at the venue, staff attempted to survey as many individuals as possible, aiming to achieve saturation at the venue. Surveyors approached a potential subject, identified themselves, described the study, and requested verbal consent for participation in the anonymous brief survey. If the patron refused, the screener noted the refusal and estimated the individual’s age, gender, and ethnicity, which allowed us to assess differential refusal rates. For those who provided consent to participate, the beginning of the brief surveys was administered by trained staff (consent, age, and NYC residency) and individuals self-reported more sensitive information (race, sexual orientation, gender, and substance use) directly onto an iPod Touch® (Apple, Inc.). Field staff members were trained not to administer surveys to individuals who were visibly impaired by intoxication of any kind to ensure the capacity to consent. Participants were not compensated for completing the survey. Because surveys were conducted anonymously and administered by multiple recruitment staff members, recruitment staff could not ensure that participants did not take

the survey multiple times across different nights. However, since participants were not compensated in any way for survey completion, the desire to complete the survey more than once was likely minimal. For example, typically, those who were approached on another night or at another venue often indicated that they had completed the survey already once the survey was explained to them. Such individuals were not resurveyed.

Measures

Scene Characteristics—As noted above, five nightlife scenes plus college bar scenes were assessed. The five youth cultures were carefully selected to ensure a broad cross section of the major youth cultural scenes in urban locales and validated through extended ethnographic research. EDM scenes, which emerged from rave culture, are now heavily based in night clubs (30). They revolve around a dance culture driven by electronically produced music. While gay club culture relies on similar music, the element of a male sexual culture renders it distinct from the EDM scene (31). The gay club scene tends to cater to younger men than other gay scenes, such as leather bars, and thus, this element of our sampling frame largely included gay dance clubs as well as bars and lounges catering to younger gay men. Indie rock scenes included independent rock clubs ranging from venues that promoted shows via alternative papers to underground Do-It-Yourself (DIY) venues promoted by word of mouth and social networks. The “lesbian” party scene focused on weekly and monthly parties for young women interested in other women. The Brooklyn warehouse scene is comprised of gatherings of alternative or independent youth culture revolving around art and performance.

Individual-level Variables—Respondents were asked to state their age, a continuous variable. They were asked whether they identified as Latino, and then self-reported the racial group they most identified with, selecting from White, Black, Asian/Pacific Islander, Native American, Multiracial, or Other. They self-reported gender as Female, Male, or Transgender. They were also asked to self-identify their sexual orientation – Straight, Gay/Lesbian, Bisexual, Queer, or Other – which was then recoded as either heterosexual or gay/lesbian/bisexual/queer. (Individuals who identified as transgender or reported “Other” sexual orientation were excluded from the present analyses due to low sample sizes.)

To assess the recent use of energy drinks, alcohol, and their combination, participants were asked to report the number of days out of the last 30 in which they had consumed energy drinks. For those who reported consuming energy drinks on at least 1 day in the last 30 days, they were asked on how many of those days they combined energy drinks with alcohol. This combination was not defined in any way so as to permit a range of ways to combine energy drink and alcohol use. These answers were self-reported in a continuous fashion, but were recoded dichotomously for these analyses (No = 0, Yes = 1). As such, the two outcome variables are (1) energy drink consumption in the last 30 days (y/n) and (2) energy drinks combined with alcohol in the last 30 days (y/n).

Data Analysis

Prevalence estimates were computed using SPSS (IBM). Stratified chi-square analyses were conducted to examine differences in prevalence of energy drink use and the combination of energy drinks and alcohol according to demographic characteristics and location of recruitment. *t*-Tests were conducted to examine age differences between energy drink consumers and nonconsumers. Finally, multivariate logistic regression analyses were then utilized to examine all predictors together in a single model for each outcome.

RESULTS

Sample Characteristics

During October 2011–February 2012, 1824 young adults consented to take the survey and were at least 18 years of age (response rate of 78.01%); ages ranged from 18 to 45 years, with 22.6% of the sample indicating that they were 30 or older. Response rates differed by gender, with women being slightly more likely to consent to the survey than men (82% of women consented compared to 75% of men, $\chi^2(1) = 14.71, p = .001$). Lesbian, gay, bisexual, and queer (LGBQ) individuals were also slightly more likely to consent to the survey (83.1%) than straight individuals (79.1%), $\chi^2(1) = 5.13, p = .023$. There was no difference in response rates between White and non-White young adults. Among those who consented to the survey, we exclude those who do not reside in the New York metropolitan area ($n = 212$), those who provided an “other” gender or sexual identity ($n = 74$), those with missing data across various key variables ($n = 67$), and those over the age of 45 ($n = 7$) for a final analytic sample of 1469. See Table 1 for sample characteristics.

Gender and Sexual Orientation Differences

There were basic gender and sexual identity differences in energy drink use, with men reporting higher prevalence of past-month use than women (36.9% of men vs. 29.8% of women, $\chi^2(1) = 8.205, p = .004$) and lesbian, gay, and bisexual (LGB) individuals reporting higher prevalence of recent use than heterosexuals (31.2% of heterosexuals vs. 37.9% of LGB, $\chi^2(1) = 6.26, p = .012$). Men were also more likely to report combining energy drinks with alcohol (19.6% vs. 14.3%, $\chi^2(1) = 7.43, p = .006$). There were no sexual identity differences in the prevalence of combining energy drinks with alcohol. When looking at the intersecting gender and sexual identity groups, heterosexual women reported the lowest prevalence of recent energy drink use in comparison with all other groups, and gay and bisexual men reported higher prevalence of combining energy drinks with alcohol than both groups of women (but not heterosexual men) (see Table 2).

Age Differences

Individuals who reported recent energy drink use were, on average, younger than those who did not report energy drink use in the last 30 days (25.89 vs. 26.69, $t(1083) = 3.27, p = .001$). Participants who reported combining energy drinks and alcohol were, on average, younger than those who did not report this combination in the last 30 days (25.74 vs. 26.56, $t(417) = 2.93, p = .004$).

Race and Ethnicity Differences

When looking at energy drink use across racial and ethnic groups, Latino individuals reported higher prevalence of energy drink use than Whites and Asians. No racial or ethnic differences emerged in the likelihood of combining energy drinks with alcohol (see Table 2).

Scene Analyses

We also conducted nightlife scene comparisons to identify the particular youth cultures in which individuals reported the highest prevalence of energy drink consumption and the combined consumption of energy drinks and alcohol. Individuals sampled at gay and lesbian venues were more likely to report energy drink consumption than those sampled in the indie rock, EDM, or warehouse scenes. Individuals sampled at gay venues were more likely to report combining energy drinks and alcohol than those sampled in the indie rock, EDM, or warehouse scenes (see Table 2).

Multivariate Analyses

In a logistic regression with demographics entered in the first step and scene entered in the second step, age, gender, gay or bisexual identity, and Latino ethnicity were significant predictors of recent energy drink use in the first step. Specifically, younger individuals, men, LGB-identified individuals, and Latinos had higher odds of energy drink consumption. In a second model that included recruitment scene in the second step, recruitment scene did not add anything to the model nor did any of the individual scene variables significantly predict energy drink use. In a separate model with energy drink combined with alcohol as the outcome and all demographic variables included as predictors, younger individuals and men reported higher odds of recently combining alcohol and energy drinks. In a second model that included recruitment scene in the second step, the step was not significant but being screened at a gay venue significantly predicted the likelihood of combining alcohol and energy drinks; marginal significance was found for the lesbian scene (see Table 3).

DISCUSSION

This report extends our knowledge of patterns and predictors of energy drink consumption and combining energy drinks with alcohol. Our findings enhance our knowledge beyond samples of college students to socially active urban young adults and provide information necessary to tailor and target education and prevention efforts. Understandings of nightlife influences on combined energy drink and alcohol consumption are key for health promotion efforts, especially in light of event-level research, indicating that bar patrons who combined energy drinks with alcohol left the bar more intoxicated than noncombining patrons and were also more likely to report that they intended to drive home from the bar (23). Identification of the specific groups, demographics, and venues is important when considering health promotion efforts that address the potentially harmful behavioral effects of this combination. Interestingly, the prevalence of energy drink consumption found in the NYC nightlife venues does not differ drastically from those found in surveys of college students, although samples of college students range in estimates of use from 39% to 57%. Actually, reported energy drink is slightly lower in our sample (33.6%) than in other samples. Further, the combined use of energy drinks and alcohol in this sample (17.1%) is also lower than that generally found in college student samples, which range from 23% to 54%. The low prevalence in this sample is interesting, considering the characteristics of socially involved individuals. Specifically, individuals in many of these scenes have been identified as engaging in high-risk drinking and illicit substance use, and also scored higher on sensation seeking than those not involved in these scenes (10,17,18,21,32). Perhaps, individuals involved in NYC nightlife venues are less likely to consume energy drinks and to combine them with alcohol because they are using other illicit substances (e.g., cocaine) or recreationally using prescription stimulants (e.g., Adderall) instead of energy drinks. On the other hand, research has indicated that energy drink users are more likely to report the use of other illicit substances and prescription drugs (22), which is counter to this speculation. Future research should examine the concurrent use of energy drinks, alcohol, and other licit and illicit substances and the factors that contribute to decisions to use different stimulants.

Our findings indicate that, in comparison with women, men are more likely to use energy drinks and to combine them with alcohol, which contradicts some findings in the energy drink literature (2) but is consistent with other literature around substance use more generally (33,34). Similarly, LGB individuals were somewhat more likely to report energy drink consumption and combining energy drinks with alcohol, which is also consistent with other literature around substance use generally (35,36). Scene analyses replicated these findings, with individuals in the gay and lesbian nightlife scenes reporting higher prevalence of energy drink consumption and with individuals in the gay nightlife scene reporting higher

prevalence of the combined energy drink and alcohol consumption, even after controlling for other demographic factors. However, much like the literature around substance use distinctions according to gender and sexual identity, these differences deserve further exploration to better understand the motivations behind and social norms surrounding energy drink consumption among men and LGB individuals.

Younger individuals in our sample have higher odds than older individuals to report energy drink consumption and combining energy drinks with alcohol, which is similar to other community-based samples (9). These findings may reflect a cohort difference, in that energy drinks are gaining popularity and may be more readily taken up by younger people in their nightlife routines. The findings may also indicate that younger individuals are using energy drinks in place of alcohol because of the potential for difficulty in obtaining alcohol for underage young adults (18–20-year-olds) in some of these scenes. However, given that the relatively small portion of younger individuals (5.1% of the sample) were just as likely to report recent alcohol consumption, this conclusion may not be fully explanatory. Further, given the global nature of our associations, this hypothesis is not testable in the current data. These findings are of concern because of the potential for energy drinks to be particularly harmful to adolescents and young adults (37). Further, the combination of energy drinks and alcohol may be particularly harmful for young adults who are potentially less experienced with alcohol as consuming energy drinks with alcohol may reduce the ability to correctly estimate one's level of impairment while simultaneously increasing alcohol consumption during that drinking session (6,38).

While Latino individuals in our sample reported higher prevalence of consuming energy drinks than individuals of other racial and ethnic categories, there were no racial or ethnic differences in combining energy drinks with alcohol. These findings somewhat replicate those of Berger et al. (9), who found that non-Black minorities were more likely to report energy drink consumption but that Whites were more likely to report combining energy drinks with alcohol. These findings may indicate the ubiquity of the combination of energy drinks and alcohol across racial and ethnic groups. Future research should more closely examine the demographic distinctions between consuming energy drinks and combining them with alcohol, as these seem to be somewhat distinct behaviors.

Our use of TSS addresses concerns with other research about generalizability. Although our findings do not generalize to all young adults, they strongly represent young adults in NYC who are involved in nightlife scenes. As such, these findings move beyond college student samples to better understand energy drink consumption across a spectrum of socially active young adults. Scene analyses indicated that involvement in the gay and lesbian scenes predicted the combination of energy drinks, even after controlling for demographic factors. This finding may speak to polysubstance use as lesbian and gay venues are venues in which individuals report high levels of substance use (21,31). These distinctions may also reflect varying subcultural norms (39), varying scene or venue characteristics (i.e., later nights or the prevalence of more high-end cocktails), or simply the distinction in the kinds of patrons who frequent particular venues. Again, it is interesting to note that there are slightly different patterns of differences in the two outcomes – energy drink consumption versus combining energy drinks with alcohol. Future research should more closely examine these two outcomes as distinct behaviors and seek to more clearly define the combination of energy drinks and alcohol (i.e., do some consume energy drinks prior to going out while patrons in other scenes combine them in cocktails at the venues?).

Though compelling and informative, the limitations should be noted. First, although subjects were asked to self-report their behaviors on a secure device, the public setting may have introduced a social desirability bias in the reporting of some behaviors – though given the

legality of these behaviors, we have no reason to believe significant underreporting has occurred. Further, as we sampled from NYC nightlife venues, we may have oversampled people who are more frequent nightlife participants. Finally, because of the venue-based assessment, the survey needed to be brief, thus limiting the information that could be collected from individuals. For example, information about education would facilitate comparisons of college and noncollege youth. Additionally, our metrics of energy drink and alcohol consumption did not assess the context of use or the specific way in which alcohol and energy drinks were combined (i.e., in mixed cocktails vs. separately), thus limiting our conclusions about the role of venue or scene participation in these behavioral patterns. Further, our survey did not assess personality factors, such as sensation seeking, which is a known correlate of energy drink consumption (22,40).

Despite these limitations, our findings provide some important information to target young adults with education and prevention efforts. These findings also suggest the need for additional research to understand differences in motivations for use and in the behavioral and alcohol-related outcomes associated with consuming energy drinks and combining them with alcohol.

Acknowledgments

The authors acknowledge the contributions of other members of the project team.

This study was supported by a grant from the National Institute on Drug Abuse (R01 DA025081, Brian C Kelly, P.I.). The views expressed in this article do not expressly reflect the views of the National Institute on Drug Abuse or any other governmental agency.

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TABLE 1

Descriptive statistics of demographics

	<i>n</i>	Value
Average age	1469	26.42 (4.63) ^I
Gender		
Male	781	53.2%
Female	688	46.8%
Sexuality		
Gay/lesbian/bisexual	512	34.9%
Heterosexual	957	65.1%
Race/ethnicity		
White	926	64.4%
Black	79	5.5%
Latino	170	11.8%
Asian/Pacific Islander	104	7.2%
Mixed/other	160	11.1%
Number of drinking days in the last 90 days		39.58 (28.63) ^I
Number of drinking days in the last 30 days (of the 1417 people reporting alcohol use)		13.58 (9.29) ^I
Number of energy drink days in the last 30 days		2.14 (5.09) ^I
Number of energy drink + alcohol days in the last 30 days (of the 490 people reporting energy drink use)		2.16 (4.16) ^I

Note:

^IValue represents mean (SD).

TABLE 2

Past 30-day energy drink prevalence by demographic and scene characteristics.

Prevalence by gender and sexual orientation						
	Total sample (<i>n</i> = 1469)	Heterosexual men (<i>n</i> = 525)	Gay/bisexual men (<i>n</i> = 256)	Heterosexual women (<i>n</i> = 432)	Lesbian/bisexual women (<i>n</i> = 256)	
Recent energy drink use	33.6%	35.0% ³	40.6% ³	26.6% ^{1,2,4}	35.2% ³	
Recent energy drink + alcohol	17.1%	17.8%	23.4% ^{4,3}	14.4% ²	14.1% ²	
Prevalence by race/ethnicity						
	Total sample (<i>n</i> = 1469)	White (<i>n</i> = 926)	Black (<i>n</i> = 78)	Latino (<i>n</i> = 170)	Asian/Pacific Islander (<i>n</i> = 103)	Mixed/other (<i>n</i> = 159)
Recent energy drink use	33.6%	32.5% ⁷	35.4%	42.4% ^{5,8}	25.0% ⁷	35.0%
Recent energy drink + alcohol	17.1%	17.0%	12.8%	22.9%	14.6%	15.7%
Prevalence by scene						
	Total sample (<i>n</i> = 1469)	College bars (<i>n</i> = 37)	Gay scene (<i>n</i> = 155)	Lesbian scene (<i>n</i> = 334)	Indie rock scene (<i>n</i> = 502)	Warehouse scene (<i>n</i> = 110)
Recent energy drink use	33.6%	32.4%	38.1% ^{1,3}	38.3% ^{1,3}	28.7% ^{1,1,12}	33.6%
Recent energy drink + alcohol	17.1%	13.5%	25.6% ^{1,3,14,15}	18.3%	15.5% ^{1,1}	13.6% ^{1,1}

Note: All reported differences at *p* .05.¹ Significant difference from heterosexual men.² Significant difference from gay/bisexual men.³ Significant difference from heterosexual women.⁴ Significant difference from lesbian/bisexual women.⁵ Significant difference from White.⁶ Significant difference from Black.⁷ Significant difference from Latino.

- ⁸ Significant difference from Asian/Pacific Islander.
- ⁹ Significant difference from mixed/other.
- ¹⁰ Significant difference from college bars.
- ¹¹ Significant difference from gay scene.
- ¹² Significant difference from lesbian parties.
- ¹³ Significant difference from indie rock scene.
- ¹⁴ Significant difference from EDM scene.
- ¹⁵ Significant difference from warehouse scene.

TABLE 3
Demographic predictors of past 30-day use (dichotomized) among socially active adults ($N = 1469$).

Recent energy drink use												
Step 1												
Step 2												
Model χ^2	35.27***									40.01***		
df	7									12		
Nagelkerke's R^2	.034									.038		
95% CI												
	β	Exp. B	Lower	Upper	P value	β	Exp. B	Lower	Upper	P value		
Constant	.480	1.62			.179	.511	1.67			.200		
Age	-.042	.959	.935	.983	.001	-.042	.959	.935	.984	.001		
Gender (female = 1)	-.392	.676	.539	.847	.001	-.442	.642	.507	.814	<.001		
Sexual identity (gay = 1)	.263	1.30	1.03	1.64	.026	.151	1.16	.837	1.62	.368		
Race/ethnicity												
White	1	1	-	-	-	1	1	-	-	-		
Black	.097	1.10	.676	1.79	.697	.055	1.06	.644	1.73	.827		
Latino	.350	1.42	1.01	1.99	.043	.346	1.41	1.00	1.99	.046		
Mixed/other	.085	1.09	.762	1.56	.640	.084	1.09	.760	1.56	.646		
API	-.354	.702	.439	1.12	.139	-.344	.709	.443	1.14	.152		
Scenes												
College scene	-	-	-	-	-	-.030	.971	.429	2.20	.943		
Gay scene	-	-	-	-	-	-.014	.986	.542	1.79	.963		
Lesbian scene	-	-	-	-	-	.194	1.21	.726	2.03	.459		
Indie rock scene	-	-	-	-	-	-.157	.854	.540	1.35	.500		
EDM scene	-	-	-	-	-	.099	1.10	.689	1.77	.681		
Warehouse scene	-	-	-	-	-	1	1	-	-	-		
Likelihood ratio χ^2 (7) = 35.27***												
Likelihood ratio χ^2_{sep} (5) = 4.74***												
Likelihood ratio χ^2 model (12) = 40.01***												
Recent energy drink use combined with alcohol												

[illegible]

Note: CI = confidence interval; df = degrees of freedom; β = Beta Coefficient; Exp. B = Exponentiated Beta, also known as the Odds Ratio. API = Asian or Pacific Islander. χ^2 step indicates the chi-square test for the second step of the model.

* p .05;
** p .01;
*** p .001