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Condom Use in Heavy Drinking College Students: The Importance of Always Using Condoms

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Abstract

Objective—The authors examined whether alcohol use decreased condom use.

Participants—The subjects were heavy-drinking students on 5 different college campuses.

Methods—A face-to-face interview, administered between November of 2004 and February of 2007, gathered information about condom use, alcohol use, and other behaviors. Multivariate logistic regression was used to assess predictors of condom use.

Results—Of the 1715 participants, 64% reported that they did not always use condoms. Male students who drank heavily were less likely to always use condoms (adjusted odds ratio (AOR) 0.61). Participants with more sexual partners used condoms less when drinking (AOR 1.93 for men, 1.45 for women).

Conclusions—Many students do not use condoms consistently, especially those who drink heavily or have multiple sexual partners. Clinicians at student health need to encourage all students to use condoms every time they have intercourse.

Introduction

Eighty to ninety percent of college students are sexually active, and many engage in risky sexual behavior including multiple partners and inconsistent condom use.[1-3] People under age 25 account for almost half of the of the 19 million sexually transmitted infections (STIs) that are diagnosed each year.[4] In 2006, the rate of reported infection with Chlamydia, the most common STI, was 2,797 per 100,000 females aged 20-24.[5] STIs are associated with significant morbidity, including pelvic inflammatory disease, infertility, cervical cancer and contraction of HIV/AIDS. In 2005, 14.2% of new HIV infections were diagnosed in people under the age of 25.[6] Women aged 18-24 have the highest rate of unintended pregnancies, and 52 percent of U.S. women who seek an abortion are under the age of 25.[7,8] Both STIs and pregnancy can be prevented by latex condom use. However, only 26.4% of sexually active college students report always using condoms. [2]

In addition, many college students are binge drinkers, with binge drinking defined as 5 or more drinks on one occasion for men and 4 or more drinks on one occasion for women. The most recent Harvard College Alcohol Study (CAS) reported that 43% of college students reported binge drinking in the past 30 days. [9] The 2006 Executive Summary of the American College Health Association found that 21.8% of students reported binge drinking in the past two weeks.

[10] The Harvard CAS also found that 8% of college students reported that they had had unprotected sex due to drinking, and 2% were victims of alcohol related sexual assault.[9,11] Unfortunately, the rate of college students who binge drink, or suffer alcohol related sexual harms, has not decreased. [9] A separate survey found that the influence of alcohol consumption on the decision to have sex was a common reason for sexual regret. [12]

Given the frequency of sexual activity and binge drinking on college campuses, along with the findings of the CAS, it is plausible to think that heavy drinking may correspond with decreased condom use. The findings of the CAS suggest that heavy drinking corresponds with decreased condom use, and there are many reasons why this may be true. For one, the acute effects of alcohol intoxication may decrease judgment or be used as an excuse for risky behavior. [13] Or, perhaps there is a third variable, such as a personality trait, that is associated with both binge drinking and unprotected sex. For example, a "sensation-seeking" personality has been associated with unprotected sex, and one study found that the relationship between alcohol use and either sex with strangers or one-night stands was explained by an "excitement seeking" personality.[14,15] The presence of depression has been associated with substance abuse and harmful sexual behavior, such as unprotected sex.[16-18] Similarly, a lack of social support has been associated with harmful sexual behaviors.[19] Strong social support can promote alcohol abuse if the social network, such as a fraternity, promotes heavy drinking, or it can be protective, if the social network views alcohol as a negative influence.[20]

There have been two large reviews that examined the relationship between alcohol use and condom use. A large review of the relationship between alcohol use and sexual behavior that focused on adolescents and college students found that although alcohol use does correlate with casual sex, there is little evidence that it is associated with decreased condom use. [13] A meta-analysis of event-level studies found that although alcohol use corresponded with lower condom use at first intercourse, it did not correlate with lower condom use in recent sexual encounters. [21]

Therefore, the relationship between condom use and drinking is unclear. Although the CAS has reported alcohol-related sexual harms, two large reviews have not found a consistent relationship between condom use and alcohol use. In addition, few studies have focused on college students or examined multiple levels of alcohol use. Therefore, the purpose of our study is threefold:

1. To estimate the prevalence of condom use in a large sample of heavy-drinking students on multiple campuses.
2. To assess the ability of alcohol use to explain variation in condom use frequency, after adjusting for potential confounders.
3. To explore what, if any, factors differentiate heavy drinkers who report decreased condom use when drinking compared to those who report no change in condom use.

We hypothesize that students with very high levels of alcohol use will use condoms less frequently than those with lower levels of alcohol use. This study is unique in that it focuses on at-risk drinkers that present to college health services. College health services can be a prime site for health promotion around both safer sexual behaviors and problem drinking.

Methods

Overall Design

This study reports on the results from a face-to-face interview that was completed by students at 5 different campuses in the United States and Canada between November of 2004 and

February of 2007. The institutional review board at each site approved this study, and each study subject signed an informed consent form.

Sample

Participants were students who screened positive for recent heavy drinking behavior on a health screening survey distributed in waiting rooms of student health clinics at four large public universities. Surveys were also distributed in an introductory health class at a fifth large public university. Students were invited to complete the survey as the initial screening tool for a large, randomized-controlled trial (RCT) on brief intervention for heavy drinking. Males were defined as heavy drinkers, and therefore eligible for the RCT, if they consumed more than 14 drinks per week, had 3 or more drinking days per week, had more than 4 binge-drinking episodes in the past 28 days, or had 2 or more positive responses to the CAGE questionnaire. Females were eligible if they consumed greater than 11 drinks per week, had 3 or more drinking days per week, had greater than 5 binge-drinking episodes in the past 28 days, or had 2 or more positive responses to the CAGE questionnaire. Binge drinking was defined as consuming 5 or more drinks on one occasion for men, and 4 or more drinks for women. Students were ineligible if they were under the age of 18.

If the student was assessed as being a heavy drinker on the initial survey, s/he was asked to complete a face-to-face interview of drinking and other health behaviors. This study reports on the results of the face-to-face interview.

A total of 12,900 people were initially screened, and 4,512 people (36%) screened positive for heavy drinking. Of these, 1,888 (40%) did not wish to be included in the study. An additional 534 did not return to complete the interview. A total of 2,090 (45.2%) participants completed the face-to-face interview, of whom 1,715 (82%) had sexual intercourse (not including oral sex) during the 6 months prior to completing the survey.

Measures

The questionnaire consisted of 92 questions that assessed a variety of demographic information, personality traits, health and risk behaviors in addition to levels of recent drinking. General demographic information included age, year of study, and race/ethnicity. Each interviewer was trained to administer the questionnaire, and the responses were recorded in a booklet. For this analysis, the dependent variable was frequency of condom use. The independent variables were number of binge drinking episodes in the past month, and the maximum quantity of alcohol consumed in a single day. The potential confounders included: sex, age, sensation-seeking personality, level of social support, depression, and number of sexual partners. Race/ethnicity was not used due to the low numbers of non-white students.

Each participant was asked: “In the last 6 months, have you had sexual intercourse (not including oral sex)?” If the participant answered “yes,” the interviewer then asked how many sex partners s/he had in the last 6 months. The response to this was open-ended, but was coded as “1,” “2,” “3,” or “4 or more.” Sexually active participants were then asked to rate the frequency of condom use as “seldom,” “about half the time,” “usually,” “always,” “don't know,” “n/a,” or “declined.” Both male and female participants were asked the same question, so we are assuming that both sexes interpreted condom use as either partner using condoms. In addition, participants who reported using condoms less frequently than always were asked if they used condoms less often when they had been drinking. All participants were asked if they had been diagnosed with an STI in the previous 6 months.

The 28-day Timeline Follow-back (TLFB), which asks students, with the help of a calendar and other memory aids, to recall how much they drank on each of the last 28 days, was used

to determine alcohol use. [22-24] Binge drinking was defined as 5 or more drinks in a day for men, and 4 or more drinks per day for women. [25] Using the TLFB data from each participant, we calculated the number of binge drinking days per month and the maximum quantity consumed on a single day. We categorized the maximum quantity consumed in one setting into three levels. We defined low maximum consumption as drinking less than the criterion for heavy drinking (5 for men, 4 for women) in a day, moderate maximum consumption as 5-7 drinks for men or 4-6 drinks for women, and high maximum consumption as 8 or more drinks for men or 7 or more drinks per day for women (Marlon Mundt, personal communication, September 2007). [25] These categories are correlated to a risk of alcohol-related harms (Marlon Mundt, personal communication, September 2007). [26,27]

We assessed sensation seeking using the Brief Sensation Seeking Scale.[28] This scale consists of 8 questions, scored from 1 to 5, that describe dimensions of sensation seeking, with higher scores indicating a more "sensation seeking" personality. The Cronbach alpha for this scale was 0.70. Depression was assessed using the Beck Depression Inventory for Primary Care (BDI-PC), with a score of greater than 3 (range: 0-7) indicating probable depression. [29]

We measured social support using a modified version of the ENRICHD Social Support Instrument. [30-32] The ESSI measures perceptions of social support, particularly emotional support, using five questions scored on a 5-point scale (none, a little, some, most, or all of the time). The item scores were then summed, with higher scores indicative of greater perceived social support. The Cronbach alpha was 0.87.

Statistical analysis

First, general demographic data of the sample was obtained. We then used multivariate logistic regressions to evaluate the ability of alcohol use to explain variation in the frequency of condom use in participants, after controlling for confounders. Based on the initial differences observed in condom use between men and women, each analysis was stratified by sex.

We estimated the adjusted odds ratio of always using condoms compared to using condoms less than always. The independent variables in this model were binge drinking frequency and maximum consumption, and the potential confounders were age, sensation-seeking personality, level of social support, depression, and number of sexual partners. We categorized condom use into always and less than always as always using condoms is the clinical goal.

A second logistic regression then examined differences between usual and always condom users, using the same independent variables and confounders as the first model. We chose to compare usual to always users as many students may assume that usually using condoms is adequate. In addition, the STI rate was highest in the group that reported "usually" using condoms, and lowest in the group that reported "always" using condoms. Therefore, it is important to distinguish between those who usually use condoms and those who always use condoms.

Finally, we evaluated how the risk factors differentiated between condom users who report using condoms less when drinking from those whose condom use does not change. In addition, a chi square statistical test was performed to assess the difference in STI frequency across levels of condom use. Analyses were performed using Stata 8.0 (StataCorp. 2003. Stata Statistical Software: Release 8. College Station, TX: StataCorp LP.) and SPSS 15.0 (SPSS Inc. 2006. SPSS Graduate Pack 15.0 for Windows. Chicago, IL), and we considered p-values $\leq$ 0.05 to be significant for reporting purposes.

Results

In our sample of 1,715 sexually active participants, 58% (n=996) were female (Table 1). The sample was predominantly white (88%; n=1511), with Asians comprising the largest minority group (5%; n=110, results not shown). Four percent (n=78) reported Hispanic ethnicity. The mean age was 21.5 years (SD 2.44). The class distribution was approximately even, with 396 freshmen (19%), 307 sophomores (15%) 396 juniors (19%), 497 seniors (24%), 194 masters students (10%), and 281 doctoral or professional students (13%) (Results not shown).

Approximately 1 in 3 particpants (36%) reported they always used condoms during sex, 20% that they usually used condoms, 9% that they used condoms half the time, and 35% reported that they used condoms seldom (Table 1). For men, 43% reported that they always used condoms, compared to 31% of women. The mean number of sexual partners in the past 6 months was 1.70 for men and 1.55 for women. Of the participants, 84 students (5%) reported an STI in the last 6 months. Only 1,393 (82%) completed the BDI-PC, but, of these, 20% of participants screened positive for potential depression.

In examining alcohol use, the majority of students fell into the high maximum consumption category (n= 1060, 62%), with the moderate maximum consumption (n= 442, 26%) and the low maximum consumption (n=213, 12%) with fewer subjects (Table 1). Of males, 72% were in the high maximum consumption category, compared to 54% of females. The mean number of binge drinking episodes in the last 28 days was 5.45 (SD 4.33) for males and 4.07 (SD 3.59) for females.

The number of subjects reporting an STI in the past 6 months varied by level of condom use (results not shown). Only 11 (1.8%) subjects who always used condoms recounted an STI in the past 6 months. However, thirty-one (9.3 %) usual condom users had an STI, and 42 (5.9%) subjects who used condoms half the time or less reported an STI. Students who always used condoms were significantly less likely to report an STI compared to less frequent users (chi-square statistic 27.33, p value <0.01).

Table 2 shows the logistic regression of students who always used condoms compared to less frequent condom users. Neither frequency of binge drinking nor maximum consumption risk was significantly associated with condom use. For both men and women, older age was associated with using condoms less than always (adjusted odds ratio (AOR) 0.75, 95% confidence interval (CI) 0.69-0.81 for men, AOR 0.87, 95% CI 0.82-0.93 for women). For women, having a sensation seeking personality was associated with being slightly more likely to use condoms (AOR 1.05, 95% CI 1.02-1.09).

When comparing always to usual use groups (n=795, Table 3), frequency of binge drinking was not significantly associated with condom use, but higher maximum consumption significantly and substantially decreased the likelihood of using a condom during sexual intercourse (AOR 0.61, 95% CI 0.43-0.86)) for males. Participants with more sexual partners were less likely to use condoms (AOR 0.75, 95% CI 0.70-0.81 for males, and 0.65, 95% CI 0.61-0.70 for females). In addition, males who screened positive for depression were more likely to use condoms (AOR 1.36, 95% CI 1.05-1.76)

We also considered what differentiated those who responded that they used condoms less after drinking from those who denied changing their condom use after drinking (Table 4). In this analysis, older participants were less likely to report that drinking decreased the frequency of their condoms use (AOR 0.76 for males, 0.89 for females). In contrast, participants with a higher number of sexual partners were less likely to use condoms when drinking (AOR 1.93 for males and 1.45 for females). For male students, alcohol use was not associated with using condoms less when drinking, but, for females, both binge drinking (AOR 1.80), and consuming

large quantities of alcohol (AOR 1.53) were associated with less condom use when drinking. In addition, for females, a higher level of social support was associated with less condom use when drinking (AOR 1.12).

Comment

This paper is unique in that it reports on predictors of condom use in a population of heavy-drinking students who present to student health services. Eighty-two percent of the sample was sexually active in the last 6 months, which is similar to other studies. [1,2] Many students (38%) reported more than one sexual partner in the past six months, and few students reported consistently using condoms, which is also similar to other studies. [2] Given the high rate of STIs and unintended pregnancy in this population, this report highlights the continued importance of counseling patients about consistent condom use.

This paper further examines the relationship between condom use and alcohol use among college students. Previous literature has produced mixed results, and our results are somewhat mixed as well.[33] We did not find that frequent binge drinking or high alcohol consumption was associated with always using condoms, compared to using condoms less frequently than always. However, for male students, we did find differences in alcohol consumption when we compared students who always used condoms to those that only usually used condoms. Male students who drank heavily were more likely to usually use condoms than always use condoms. For female students, we found that, of those who reported using condoms less when they had been drinking, those who drank heavily were less likely to use condoms. Therefore, although we did not find that alcohol use is associated with using condoms always compared to less frequent use, we found that it does distinguish between men who always use condoms compared to usually, and between women who use condoms less after drinking.

In addition, our results suggest that there may be a population of students who have multiple sexual partners and who *usually*, but not *always*, use condoms. When comparing students who always use condoms to those that report less frequent use, there was not an association between the number of sexual partners and condom use. Importantly, though, having more sexual partners is associated with *usually* using condoms, compared to *always* using condoms.

Therefore, it is possible that there is a subset of students who drink heavily, have multiple sexual partners, and who usually, but not always use condoms. This suggests that students may be cognizant that they need to use condoms, but when drinking very heavily they may not use them. However, it should be noted that our findings were mixed, and that the best strategy to increase condom use may be targeting all students, as opposed to those who may be assumed to be at higher risk due to heavy alcohol consumption.

The results of the current study suggest the importance of counseling patients to *always* use condoms. The group who reported that they always used condoms had significantly fewer STIs. In addition, the study found that people with multiple sexual partners are less likely to report always use compared to usual use. Therefore, students may understand that, in general, they need to use condoms if they have multiple sexual partners, but they do not *always* use condoms. However, the group of students that reported that they *usually* use condoms had the highest rate of STIs. It is important for clinicians to counsel patients that condoms only work if they are used with each and every sexual encounter.

Depression was not associated with using condoms always, compared to less frequently, for either gender. However, for men, screening positive for depression was associated with using condoms always, compared to usually. This finding is not expected, and perhaps there is an unmeasured confounder that is causing a spurious result. Or, perhaps the screening tool is less specific for men than for women. Although screening positive for depression was not associated

with less frequent condom use, many students in our sample screened positive for depression. This finding highlights the importance of screening for depression in student health.

Older age was associated with using condoms less frequently, and this has been found in other studies.[34] This may be due to the fact that older students are more likely to be in monogamous relationships, or be using another form of birth control. However, we did control for the number of sexual partners, and people who reported less condom use were at a higher risk for an STI. Therefore, even though older students could be at a decreased risk for an STI, this may be a dangerous assumption to make. Clinicians and other health professionals should counsel all students to always use condoms, unless they are sure there is no risk for STI or pregnancy.

In general, men reported more consistent condom use than women, which has been found in other studies.[34] Women who are using another form of contraception may not see condom use as important as men do. In addition, for female students, having a sensation-seeking personality was associated with more consistent condom use. Perhaps, because of their personality type, they have more casual partners. Previous literature has suggested that although alcohol use is associated with casual sex, casual sex is associated with increased condom use, and therefore alcohol use does not lead to decreased condom use.[35] Also for females, those with a higher level of social support were less likely to use condoms. This may suggest strong peer influences on condom use for females, as social support among university students is generally more focused on their peer network than family. Therefore, student campaigns to support safer sex practices and strategies to reduce drinking may be needed. In addition, it should be noted that although these two findings were statistically significant, the odds ratios were close to 1 (1.05 and 1.12 respectively), and therefore the results may not be clinically meaningful.

Limitations

This paper had several limitations. Condom use was only assessed using a single global measure of condom use frequency, which does not readily account for varying condom use practices (i.e., no condom use with main partner, more condom use with casual partners). The study was not able to determine the nature of the relationship between the participants and his/her sex partners (i.e. one-night stand versus long-term relationship, or heterosexual versus homosexual) or the specific type of sexual act (i.e vaginal versus anal, receptive versus insertive). In addition, we assumed that female participants answered that they used condoms even if it were the male partner who was actually using condoms. It is also not known whether the subjects, or their partners, were using another form of birth control. If the subject were in a mongamous relationship with one partner, knew that partner was not infected with an STI, and was correctly using another form of birth control for contraception, there would not be a need to use condoms. It is also important to remember that this was prevalence data, and, as we did not know any relationship context, we cannot say that male or younger students are less sexually risky because of their reported increased condom use; it may be that they are in riskier relationships than older or female students. However, given the high rate of STI and unintended pregnancy in young people, even students in long-term, monogamous relationships cannot assume that condom use is unimportant, and should be counseled to use condoms if they have concerns about STI or pregnancy.

This study used a sample of students presenting to student health and in one class, and cannot be generalized to other populations. However, it is helpful for clinicians to know their patient population, and therefore these results are helpful to clinicians at student health services. In addition, the sample is not racially/ethnically diverse, and only surveyed students in two geographic areas. Finally, it relied on self-reported behaviors that were obtained in a face-to-face interview, which could lead to social desirability bias. However, self-report is commonly used to assess for risky or socially undesirable behaviors, and information gleaned from these studies is still useful to apply to daily practice.

Conclusion

Encouraging safer sex practices is a key component of the preventive care that is offered at student health. Sixty percent of students report that they receive health information from student health, and this information is thought to be the most believable.[2] However, only 36% of students have received information about STI prevention from their college, and 23% have received information about pregnancy prevention.[2] Although some clinicians may practice on faith-based campuses that restrict the provision of contraception, sexual health should be addressed with all patients. The current paper highlights that many students do not use condoms unfailingly. In addition, students who drink very heavily or have multiple sexual partners use condoms inconsistently. Those students who did not *always* use condoms reported higher rates of STIs. Treating students for alcohol problems may help decrease their risk for STIs and unintended pregnancy. However, the current study's findings, when taken in conjunction with the known literature, suggest that there are few ways to predict condom use. Therefore, instead of focusing research efforts on ways to predict condom use, more research needs to be done on effective intervention programs for all health behaviors. As practitioners at student health are an important resource for students, they should strive to find ways to counsel their particular population on healthy sexual activity and other health behaviors in general. Given the frequency of sexual activity in the student population, clinicians need to counsel every patient to use condoms with *every* sexual encounter.

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Table 1

General Demographics. N=1715

	Male		Female		Total	
	n	**%**	**n**	**%**	**n**	**%**
	719	41.9	996	58.1	1715	100
Race						
White	635	88.3	876	88.0	1511	88.1
Non-white	84	11.7	120	12.0	204	11.9
Missing	0	0.0	0	0.0	0	0.0
Hispanic/Latino						
Yes	27	3.8	39	3.9	66	3.8
No	692	96.2	952	95.6	1644	95.9
Missing	0	0.0	5	0.5	5	0.3
Condom Use Frequency						
Seldom	221	30.7	382	38.4	603	35.2
Half the time	55	7.6	93	9.3	148	8.6
Usually	132	18.4	206	20.7	338	19.7
Always	307	42.7	309	31.0	616	35.9
Missing	4	0.6	6	0.6	10	0.6
STI in last 6 months						
Yes	21	2.9	63	6.3	84	4.9
No	688	95.7	922	92.6	1610	93.9
Missing	10	1.4	11	1.1	21	1.2
Beck Depression						
Yes	112	15.6	244	24.5	356	20.8
No	467	65.0	570	57.2	1037	60.5
Missing	140	19.5	182	18.3	322	18.8
Maximum consumption						
Low	76	10.6	137	13.8	213	12.4
Moderate	124	17.2	318	31.9	442	25.8
High	519	72.2	541	54.3	1060	61.8
Missing	0	0.0	0	0.0	0	0.0

	Male		Female		Total	
	mean	SD	mean	SD	mean	SD
Age	21.50	2.42	21.40	3.25	21.53	2.44
Number of sex partners	1.70	0.99	1.55	0.88	1.61	0.93
Frequency of binge drinking	5.45	4.33	4.07	3.59	4.65	3.97

Table 2

Logistic regression of always condom use versus condom use less than always in the last 6 months (n = 1,705) [1]

	Male (n = 570)				Female (n = 805)			
	OR	p-value	95% CI		OR	p-value	95% CI	
Binge frequency	0.96	0.11	0.91	1.01	0.97	0.37	0.92	1.03
Maximum consumption	0.85	0.35	0.61	1.19	1.03	0.85	0.78	1.35
Age	**0.75**	**<0.01**	**0.69**	**0.81**	**0.87**	**<0.01**	**0.82**	**0.93**
Sensation seeking	0.97	0.13	0.93	1.01	**1.05**	**<0.01**	**1.02**	**1.09**
Social support	0.96	0.12	0.90	1.01	1.00	0.93	0.95	1.06
Depression	0.64	0.07	0.39	1.04	0.83	0.34	0.57	1.21
No. of sexual partners	0.97	0.78	0.81	1.17	0.92	0.40	0.77	1.11

[1] 1,705 of the 1,715 sexually active subjects provided complete information

Table 3

Logistic regression of always condom use versus usual condom use in the last 6 months (n = 954)

	Male (n = 439)				Female (n = 515)			
	OR	**p-value**	**95% CI**		**OR**	**p-value**	**95% CI**	
Binge frequency	0.91	0.62	0.63	1.31	1.07	0.64	0.81	1.42
Maximum consumption	**0.61**	**0.01**	**0.43**	**0.86**	0.96	0.81	0.71	1.31
Age	**0.88**	**0.01**	**0.81**	**0.97**	0.99	0.47	0.95	1.03
Sensation seeking	1.00	0.98	0.99	1.01	**1.02**	**<0.01**	**1.01**	**1.03**
Social support	0.99	0.96	0.78	1.26	0.88	0.09	0.77	1.02
Depression	**1.36**	**0.02**	**1.05**	**1.76**	0.89	0.06	0.78	1.00
No. of sexual partners	**0.75**	**<0.01**	**0.70**	**0.81**	**0.65**	**<0.01**	**0.61**	**0.70**

Table 4

Logistic regression of less condom use after alcohol consumption in the last 6 month (n = 881)

	Male (n = 339)				Female (n = 542)			
	OR	**p-value**	**95% CI**		**OR**	**p-value**	**95% CI**	
Binge frequency	1.91	0.23	0.66	5.47	**1.80**	**0.02**	**1.08**	**2.98**
Maximum consumption	1.03	0.88	0.68	1.55	**1.53**	**0.02**	**1.08**	**2.16**
Age	**0.76**	**<0.01**	**0.65**	**0.89**	**0.89**	**<0.01**	**0.85**	**0.94**
Sensation seeking	1.03	0.13	0.99	1.07	0.99	0.44	0.97	1.01
Social support	0.88	0.16	0.74	1.05	**1.12**	**0.01**	**1.04**	**1.22**
Depression	1.05	0.86	0.60	1.84	1.05	0.64	0.86	1.27
No. of sexual partners	**1.93**	**<0.01**	**1.56**	**2.38**	**1.45**	**<0.01**	**1.21**	**1.74**