Published in final edited form as:

Addict Behav. 2018 July ; 82: 105–108. doi:10.1016/j.addbeh.2018.02.027.

Alcohol Use and Alcohol/Marijuana Use during the Most Recent Sexual Experience Differentially Predict Characteristics of the Sexual Experience among Sexually Active Young Adult Drinkers

Anne M. Fairlie, Ph.D,

Department of Psychiatry and Behavioral Sciences, Box 354944, University of Washington, Seattle WA 98195

Tracey A. Garcia, Ph.D,

Department of Psychiatry and Behavioral Sciences, Box 354944, University of Washington, Seattle WA 98195

Christine M. Lee, Ph.D, and

Department of Psychiatry and Behavioral Sciences, Box 354944, University of Washington, Seattle WA 98195

Melissa A. Lewis, Ph.D

Department of Health Behavior and Health Systems, University of North Texas Health Science Center

Abstract

Introduction—Few studies have examined associations between using alcohol only and using both alcohol and marijuana with sexual behavior on specific occasions. The current study examined alcohol and marijuana use during the most recent sexual experience in association with relationship characteristics, psychological issues, and condom use.

Methods—Young adult drinkers aged 18-25 who also reported not using a condom during sex in past month were recruited nationally. An analytic subsample ($N = 378$) was identified based on substance use during the most recent sexual experience [53% female, 70% Caucasian; mean age = 22.42 years ($SD = 1.90$)]. Using logistic regression, two dummy codes compared the alcohol use only group ($n = 197$) and the both alcohol and marijuana group ($n = 95$) to the group who used

Please send correspondence to: Anne M. Fairlie, University of Washington, Box 354944, Seattle, WA, USA 98195. Phone: (206) 221-5896. afairlie@uw.edu.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Contributors

Dr. Fairlie conducted data analysis, wrote portions of the text, and edited the entire manuscript. Dr. Lewis led study design and data collection. Drs. Garcia, Lee, and Lewis assisted in planning analyses, writing, and editing. All authors jointly conceptualized the manuscript and have contributed to and approved the final manuscript.

Conflict of interest

The authors declare no conflicts of interest.

neither substance ($n = 86$). Participant sex, drinking frequency, and number of sexual partners were included as covariates.

Results—The alcohol only group and the both alcohol and marijuana group had greater odds of being with a casual acquaintance and loss of respect compared to the group who used neither substance. The alcohol only group had greater odds of being with someone they just met and embarrassment compared to the group who used neither substance. No associations were found for condom use or emotional difficulties.

Conclusions—Preventative interventions may need to address both alcohol and marijuana to more effectively reduce risky behaviors.

Keywords

alcohol; marijuana; sexual behavior; young adults

1. Introduction

National estimates indicate that 58.3% of young adults (YAs; 18-25 years) used alcohol and 19.8% used marijuana in the past month (Center for Behavioral Health Statistics and Quality, 2016). Adolescents and YAs have reported using alcohol and marijuana at the same time or during the same event (Barrett, Darredeau, & Pihl, 2006; Brière, Fallu, Descheneaux, & Janosz, 2011; Pape, Rossow, & Storvoll, 2009) as well as simultaneous use (i.e., so that their effects overlapped; Terry-McElrath, O'Malley, & Johnston, 2013). National estimates show individuals aged 18-29 are more likely than older adults to use alcohol and marijuana at the same time (Midanik, Tam, & Weisner, 2007). Rates of casual sex encounters among YAs are around 50% (Lewis et al., 2012; Owen et al., 2010), and the number of casual sex partners peaks around age 21 (Lyons et al., 2015). YAs have the highest rates of chlamydia, gonorrhea, and undiagnosed HIV (Center for Disease Control and Prevention, 2014, 2017). It is important to examine whether alcohol and marijuana use among YAs may increase the likelihood of risky sexual behavior (RSB), defined as unprotected sexual activity and multiple or casual partners.

Survey and experimental studies show a link between alcohol and RSB; however, findings vary by study methodology and situational factors (e.g., partner type; consumption rate) (Howells & Orcutt, 2014; Kiene, Barta, Tennen, & Armeli, 2009; Parks, Hsieh, Collins, & Levonyan-Radloff, 2011; Patrick & Maggs, 2009; Patrick et al., 2012; Scott-Sheldon et al., 2016). YA marijuana use has been associated with sexual behaviors and sexually transmitted infections (Hendershot, Magnan, & Bryan, 2010; Metrik et al., 2016). Using timeline follow back, Anderson and Stein (2011) found that marijuana use was associated with higher levels of unprotected sex with casual partners and with main partners among YA women. Brodbeck and colleagues (2006) examined the most recent sexual experience and found that marijuana use was associated with more RSB. Cross-sectionally, marijuana use has been positively associated with inconsistent condom use among sexually active YA women (Adefuye et al., 2009). Other studies have not found an association between marijuana and condom use (Kerr et al. 2015; Walsh, Fielder, Carey, & Carey, 2014).

Few studies have examined links between alcohol and marijuana use and sexual behavior. Among weekly marijuana users, Metrik et al. (2016) found that same-day heavy drinking and marijuana use decreased the likelihood of using a condom with a main partner; however, same-day alcohol and marijuana use was not predictive for casual partners. Simons and colleagues (2010) and Anderson and Stein (2011) demonstrated a positive relation between marijuana use and an increased likelihood of having unprotected sex; neither study found associations between using both marijuana and alcohol with condom use. Using 12-weeks of daily reports, Parks et al. (2012) found that YA women were more likely to not use a condom on days when they used both alcohol and marijuana compared to days they used neither substance; however, this finding became non-significant when sexual assertiveness was included.

1.1 The current study

By examining substance use for the most recent sexual experience, we could determine whether the likelihood of reporting various characteristics of the experience (e.g., condom use) varied by whether individuals only used alcohol or used both alcohol and marijuana on that occasion (compared to neither substance). Cross-sectional research typically tests whether individuals who use substances are more likely to engage in RSB without considering the extent to which substance use and RSB co-occur. Intervention efforts often do not focus on multiple substances or overlapping use of substances in relation to sexual risk-taking, but it is necessary to determine if there is unique sexual risk-taking when YAs use both alcohol and marijuana and how this information can inform intervention efforts. Using a sample of YA drinkers who also reported not using a condom during vaginal or anal sex after drinking, the current study examined whether or not alcohol use only or alcohol and marijuana use (compared to use of neither substance) during the most recent sexual experience (using retrospective reports) were associated with partner characteristics (e.g., someone just met), psychological issues (e.g., embarrassment), and condom use during the most recent sexual experience. Participants who reported alcohol use only and those who reported both alcohol and marijuana use were compared to those who used neither substance.

2. Methods

2.1 Participants and procedure

Participants were part of a larger intervention study (N=402) focusing on alcohol use and RSB among YAs and were recruited nationally using various methods (e.g., Facebook, Craigslist, flyers). Participants completed a brief online screening survey then, if inclusion criteria were met, participants were contacted by phone to verify eligibility. Eligibility criteria included: (a) age 18-25; (b) not be in a monogamous relationship; (c) not used a condom during vaginal or anal sex after drinking in past month; (d) consumed an alcoholic drink at least once a week on average over past 3 months; and (e) one episode of heavy episodic drinking (4+/5+ drinks for women/men in one sitting) in past month. Participants who met these criteria after screening and phone verification were invited to complete an online baseline survey. A subsample [n=378; 53% female, 70% Caucasian; mean age = 22.42 years ($SD=1.90$)] was identified for the current analyses based on reports of alcohol

and marijuana use during their most recent sexual experience. Four participants with missing data were excluded as were 20 participants who reported only marijuana use.

2.2 Measures

Characteristics of most recent sexual experience—Participants were asked questions regarding their most recent sexual experience. Items were adapted from Cooper and colleagues (1994), Goldstein and colleagues (2007), Lewis and colleagues (2010), and Temple and Leigh (1992). Participants reported the number of alcoholic beverages consumed directly prior to or during the sexual experience (open-ended response format). Participants reported whether or not they used marijuana or hashish prior to or during the sexual experience. For partner characteristics, participants were asked to describe their relationship with their most recent sexual partner: “someone who is a casual acquaintance” and “someone just met” (0=no, 1=yes). For psychological issues, participants reported if they experienced the following problems associated with this sexual experience: “loss of respect for yourself,” “embarrassment,” and “emotional difficulties” (0=no, 1=yes). Participants reported if they or their partner “used a condom” (0=no, 1=yes, don’t know = missing).

Covariates—Sex was (0=female, 1=male) was a covariate. For drinking frequency, participants indicated how often they had consumed alcohol in the past month (0 = never to 11 = every day). For number of sexual partners, participants reported the total number of partners they had oral, vaginal, or anal sex with in the past month.

2.3 Analysis plan

Participants were categorized into the following three groups based on retrospective reports of substance use during their most recent sexual experience: alcohol only, both alcohol and marijuana, and neither alcohol nor marijuana. In logistic regression, two dummy codes were used to compare the alcohol only group and the alcohol and marijuana group to a comparison group comprised of those who used neither substance. All six outcomes were binary (endorsed versus not endorsed): casual acquaintance, someone just met, loss of respect for self, embarrassment, emotional difficulties, and condom use.

3. Results

3.1 Descriptive information

Half (52.12%, n=197) of the participants reported only using alcohol during their most recent sexual experience, while a quarter (25.13%, n=95) reported both alcohol and marijuana use; roughly a fifth (22.75%, n=86) reported using neither substance. For partner characteristics, 38.53% of the sample reported being with a casual acquaintance and 18.82% reported being with someone they just met during their most recent sexual experience. For psychological issues, 14.59% reported loss of respect for self, 15.96% reported embarrassment, and 22.87% reported emotional difficulties. Finally, 32.61% reported condom use.

3.2 Logistic regression

Logistic regression showed that the alcohol only group had greater odds of endorsing being with a casual acquaintance, being with someone they just met, loss of respect for self, and embarrassment compared to the group who used neither substance during their most recent sexual experience (Table 1). Further, the alcohol and marijuana group had greater odds of endorsing being with a casual acquaintance and loss of respect for self as compared to the group who used neither substance. No significant differences were found for either the alcohol only group or the alcohol and marijuana group on the odds of reporting emotional difficulties or condom use. Having more sexual partners was associated with greater odds of reporting that the partner was a casual acquaintance and also being someone the participant just met. Drinking more frequently was associated with lower odds of reporting embarrassment. Being male was associated with lower odds of reporting emotional difficulties.

4. Discussion

The current findings showed that YA drinkers who used only alcohol during their most recent sexual experience had greater odds of being with casual acquaintance, being with someone they just met, loss of self-respect, and embarrassment compared to those who used neither alcohol nor marijuana. YAs who used alcohol and marijuana had greater odds of being with a casual acquaintance and loss of self-respect compared to those who used neither substance. Findings contribute to a small literature by using a national YA sample to examine alcohol and marijuana use during the same event and associations with RSB. Similar to prior studies, use of both alcohol and marijuana did not predict condom use, although over half of participants in the sample indicated having their most recent sexual experience with a casual acquaintance or someone they just met (Anderson & Stein, 2011; Metrik et al., 2016; Simons et al., 2010). This study extends the literature by showing a link between using both alcohol and marijuana with sexual risk taking outcomes aside from condom use (e.g., loss of respect for self). Prior research found that sex with a casual partner was related to psychological issues (e.g., regret, embarrassment, loss of respect, emotional difficulties) (Esbhaugh & Gute, 2008; Fielder & Carey, 2010; Fisher et al., 2012; Grello et al., 2006; Lewis et al., 2012; Owen & Fincham, 2011). This study indicates that use of alcohol and both alcohol and marijuana during the same event can increase the likelihood of experiencing these psychological phenomena, as compared to occasions during which neither substance was used.

4.1 Limitations

Several limitations should be acknowledged. First, the broader study focused on alcohol and eligibility criteria were based on alcohol use and RSB, and frequency of marijuana use was not assessed at baseline. Findings may not generalize to other populations. Second, reports about the most recent sexual experience were retrospective and may not reflect individuals' typical behavior. Third, we could not isolate whether alcohol and marijuana were used simultaneously (i.e., so that effects overlapped) versus being used around the same time. Simultaneous alcohol and marijuana use has been found to place YAs at greater behavioral risk (Terry-McElrath et al., 2014). Finally, number of drinks during the most recent sexual

experience was not included as a covariate; although additional analyses did not find a significant difference in number of drinks consumed for the alcohol only group versus the alcohol and marijuana group.

4.2 Future directions and conclusion

Future research should test for unique influences of alcohol and marijuana as well as both substances in combination, particularly simultaneous use, to ascertain if alcohol and marijuana have synergistic effects that increase the likelihood of RSB (Li et al., 2012; Volkow et al., 2014). Daily survey methodology could be used to examine within-person variations in behavior across multiple occasions using prospective reports. Interventions targeting alcohol-related RSB have been shown to be efficacious (Lewis et al., 2014). To more effectively reduce RSB, preventative interventions may need to incorporate discussions of sexual decision making, alcohol use, and marijuana use, such as the potential for negative psychological effects (e.g., embarrassment, loss of respect) that may develop after a sexual encounter involving alcohol or marijuana use. Our findings suggest that YAs who use alcohol either alone or in combination with marijuana may be at risk for behavioral and intrapersonal outcomes, which may impact longer-term health (Green et al., 2017).

Acknowledgments

Role of funding sources

Data collection and manuscript preparation were supported by R21AA021767 from the National Institute on Alcohol Abuse and Alcoholism awarded to Melissa A. Lewis. Manuscript preparation for Tracey A. Garcia was supported by a grant from the National Institute on Alcohol Abuse and Alcoholism (T32AA007455 to Mary Larimer). Manuscript preparation for Christine M. Lee was supported by a grant from the National Institute on Alcohol Abuse and Alcoholism (R01AA025037 to C. Lee & M. Patrick). The content of this manuscript is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health or the National Institute on Alcohol Abuse and Alcoholism.

References

- Adefuye AS, Abiona TC, Balogun JA, Lukobo-Durrell M. HIV sexual risk behaviors and perception of risk among college students: Implications for planning interventions. *BMC Public Health*. 2009; 9:281–292. [PubMed: 19653901]
- Anderson BJ, Stein MD. A behavioral decision model testing the association of marijuana use and sexual risk in young adult women. *AIDS and Behavior*. 2011; 15:875–884. [PubMed: 20358274]
- Barrett SP, Darredeau C, Pihl RO. Patterns of simultaneous polysubstance use in drug using university students. *Human Psychopharmacology*. 2006; 21:255–263. [PubMed: 16783813]
- Brière FN, Fallu JS, Descheneaux A, Janosz M. Predictors and consequences of simultaneous alcohol and cannabis use in adolescents. *Addictive Behaviors*. 2011; 36:785–788. [PubMed: 21429672]
- Brodbeck J, Matter M, Moggi F. Association between cannabis use and sexual risk behavior among young heterosexual adults. *AIDS and Behavior*. 2006; 10:599–605. DOI: 10.1007/s10461-006-9103-9 [PubMed: 16691461]
- Center for Disease Control and Prevention. Reported STDs in the United States: 2013 national data for chlamydia gonorrhea, and syphilis. 2014. Retrieved from <https://www.cdc.gov/std/stats13/std-trends-508.pdf>
- Center for Disease Control and Prevention. HIV among youth. 2017. Retrieved from <https://www.cdc.gov/hiv/pdf/group/age/youth/cdc-hiv-youth.pdf>
- Center for Behavioral Health Statistics and Quality. Key substance use and mental health indicators in the United States: Results from the 2015 National Survey on Drug Use and Health. 2016. HHS Publication No. SMA 16-4984, NSDUH Series H-51Retrieved from <http://www.samhsa.gov/data/>

- Cooper ML, Peirce RS, Huselid RF. Substance use and sexual risk taking among Black adolescents and White adolescents. *Health Psychology*. 1994; 13:251–262. [PubMed: 8055860]
- Eshbaugh EM, Gute G. Hookups and sexual regret among college women. *Journal of Social Psychology*. 2008; 148:77–89. DOI: 10.3200/SOCP.148.1.77-90 [PubMed: 18476484]
- Fielder RL, Carey MP. Predictors and consequences of sexual “hookups” among college students: a short-term prospective study. *Archives of Sexual Behavior*. 2010; 39:1105–1119. DOI: 10.1007/s10508-008-9448-4 [PubMed: 19130207]
- Fisher ML, Worth K, Garcia JR, Meredith T. Feelings of regret following uncommitted sexual encounters in Canadian university students. *Culture, Health & Sexuality*. 2012; 14:45–57. DOI: 10.1080/13691058.2011.619579
- Goldstein AL, Barnett NP, Pedlow CT, Murphy JG. Drinking in conjunction with sexual experiences among at-risk college student drinkers. *Journal of Studies on Alcohol and Drugs*. 2007; 68:697–705. [PubMed: 17690803]
- Green KM, Musci RJ, Matson PA, Johnson RM, Reboussin BA, Ialongo NS. Developmental patterns of adolescent marijuana and alcohol use and their joint association with sexual risk behavior and outcomes in young adulthood. *Journal of Urban Health*. 2017; 94:115–124. [PubMed: 28083726]
- Grello CM, Welsh DP, Harper MS. No strings attached: The nature of casual sex in college students. *Journal of Sex Research*. 2006; 43:255–267. [PubMed: 17599248]
- Hendershot CS, Magnan RE, Bryan AD. Associations of marijuana use and sex-related marijuana expectancies with HIV/STD risk behavior in high-risk adolescents. *Psychology of Addictive Behaviors*. 2010; 24:404–414. [PubMed: 20853925]
- Howells NL, Orcutt HK. Diary study of sexual risk taking, alcohol use, and strategies for reducing negative affect in female college students. *Journal of Studies on Alcohol and Drugs*. 2014; 75:399–403. [PubMed: 24766751]
- Kerr DC, Washburn IJ, Morris MK, Lewis KA, Tiberio SS. Event-level associations of marijuana and heavy alcohol use with intercourse and condom use. *Journal of Studies on Alcohol and Drugs*. 2015; 76:733–737. [PubMed: 26402353]
- Kiene SM, Barta WD, Tennen H, Armeli S. Alcohol, helping young adults to have unprotected sex with casual partners: Findings from a daily diary study of alcohol use and sexual behavior. *Journal of Adolescent Health*. 2009; 44:73–80. [PubMed: 19101461]
- Lewis MA, Granato H, Blayney JA, Lostutter TW, Kilmer JR. Predictors of hooking up sexual behaviors and emotional reactions among U.S. college students. *Archives of Sexual Behavior*. 2012; 41:1219–1229.
- Lewis MA, Kaysen DL, Rees M, Woods BA. The relationship between condom-related protective behavioral strategies and condom use among college students: Global and event-level evaluations. *Journal of Sex Research*. 2010; 47:471–478. DOI: 10.1080/00224490903132069 [PubMed: 19657943]
- Lewis MA, Patrick ME, Litt DM, Atkins DC, Kim T, Blayney JA, Norris J, George WH, Larimer ME. Randomized controlled trial of a web-delivered personalized normative feedback intervention to reduce alcohol-related risky sexual behavior among college students. *Journal of Consulting and Clinical Psychology*. 2014; 82:429–440. [PubMed: 24491076]
- Li MC, Brady JE, DiMaggio CJ, Lusardi AR, Tzong KY, Li G. Marijuana use and motor vehicle crashes. *Epidemiologic Reviews*. 2012; 34:65–72. DOI: 10.1093/epirev/mxr017 [PubMed: 21976636]
- Lyons HA, Manning WD, Longmore MA, Giordano PC. Gender and casual sexual activity from adolescence to emerging adulthood: social and life course correlates. *Journal of Sex Research*. 2015; 52:543–557. DOI: 10.1080/00224499.2014.906032 [PubMed: 24992285]
- Metrik J, Caswell AJ, Magill M, Monti PM, Kahler CW. Sexual risk behavior and heavy drinking among weekly marijuana users. *Journal of Studies on Alcohol and Drugs*. 2016; 77:104–112. [PubMed: 26751360]
- Midanik LT, Tam TW, Weisner C. Concurrent and simultaneous drug and alcohol use: Results of the 2000 National Alcohol Survey. *Drug and Alcohol Dependence*. 2007; 90:72–80. [PubMed: 17446013]

- Owen J, Fincham FD. Effects of gender and psychosocial factors on “friends with benefits” relationships among young adults. *Archives of Sexual Behavior*. 2011; 40:311–320. DOI: 10.1007/s10508-010-9611-6 [PubMed: 20349207]
- Owen JJ, Rhoades GK, Stanley SM, Fincham FD. “Hooking up” among college students: demographic and psychosocial correlates. *Archives of Sexual Behavior*. 2010; 39:653–663. DOI: 10.1007/s10508-008-9414-1 [PubMed: 18839300]
- Pape H, Rossow I, Storvoll EE. Under double influence: Assessment of simultaneous alcohol and cannabis use in general youth populations. *Drug and Alcohol Dependence*. 2009; 101:69–73. [PubMed: 19095380]
- Parks KA, Collins RL, Derrick JL. The influence of marijuana and alcohol use on condom use behavior: findings from a sample of young adult female bar drinkers. *Psychology of Addictive Behaviors*. 2012; 26:888–894. [PubMed: 22612253]
- Parks KA, Hsieh YP, Collins RL, Levonyan-Radloff K. Daily assessment of alcohol consumption and condom use with known and casual partners among young female bar drinkers. *AIDS and Behavior*. 2011; 15:1332–1341. [PubMed: 20949313]
- Patrick ME, Maggs JL. Does drinking lead to sex? Daily alcohol-sex behaviors and expectancies among college students. *Psychology of Addictive Behaviors*. 2009; 23:472–481. [PubMed: 19769431]
- Patrick ME, O’Malley PM, Johnston L, Terry-McElrath YM, Schulenberg JE. HIV/AIDS risk behaviors and substance use by young adults in the United States. *Prevention Science*. 2012; 13:532–538. [PubMed: 22886042]
- Scott-Sheldon LA, Carey KB, Cunningham K, Johnson BT, Carey MP, MASH Research Team. Alcohol use predicts sexual decision-making: A systematic review and meta-analysis of the experimental literature. *AIDS and Behavior*. 2016; 20:19–39.
- Simons JS, Maisto SA, Wray TB. Sexual risk taking among young adult dual alcohol and marijuana users. *Addictive Behaviors*. 2010; 35:533–536. [PubMed: 20071102]
- Temple MT, Leigh BC. Alcohol consumption and unsafe sexual behavior in discrete events. *Journal of Sex Research*. 1992; 29:207–219. DOI: 10.1080/00224499209551643
- Terry-McElrath YM, O’Malley PM, Johnston LD. Simultaneous alcohol and marijuana use among US high school seniors from 1976 to 2011: Trends, reasons, and situations. *Drug and Alcohol Dependence*. 2013; 133:71–79. [PubMed: 23806871]
- Terry-McElrath YM, O’Malley PM, Johnston LD. Alcohol and marijuana use patterns associated with unsafe driving among U.S. high school seniors: High use frequency, concurrent use, and simultaneous use. *Journal of Studies on Alcohol and Drugs*. 2014; 75:378–389. [PubMed: 24766749]
- Volkow ND, Baler RD, Compton WM, Weiss SRB. Adverse health effects of marijuana use. *New England Journal of Medicine*. 2014; 370:2219–2227. [PubMed: 24897085]
- Walsh JL, Fielder RL, Carey KB, Carey MP. Do alcohol and marijuana use decrease the probability of condom use for college women? *Journal of Sex Research*. 2014; 51:145–158. [PubMed: 24164105]

Highlights

- We studied alcohol and marijuana use versus non-use for a recent sexual experience.
- Alcohol and marijuana use related to being with a casual acquaintance.
- Alcohol and marijuana use related to self-reported loss of respect for oneself.
- Alcohol use was related to a sexual partner they had just met and embarrassment.
- No associations were found for condom use or emotional difficulties.

Table 1

Logistic Regression Predicting Characteristics Related to the Most Recent Sexual Experience.

Predictor	Estimate	SE	Wald χ^2	Odds Ratio (95% CI)
Being with a Casual Acquaintance				
Male Sex	-0.02	0.24	0.01	0.98 (0.61, 1.56)
Drinking Frequency	0.13	0.07	3.22	1.14 (0.99, 1.31)
Number of Sexual Partners	0.26	0.10	7.11 **	1.29 (1.07, 1.56)
Alcohol Only (vs. Neither)	0.83	0.32	6.74 **	2.28 (1.22, 4.26)
Alcohol & Marijuana (vs. Neither)	0.85	0.36	5.71 *	2.34 (1.17, 4.71)
Being with Someone Just Met				
Male Sex	0.36	0.30	1.40	1.43 (0.79, 2.59)
Drinking Frequency	-0.03	0.09	0.10	0.97 (0.82, 1.16)
Number of Sexual Partners	0.49	0.12	17.16 ***	1.63 (1.29, 2.06)
Alcohol Only (vs. Neither)	0.95	0.44	4.73 *	2.58 (1.10, 6.05)
Alcohol & Marijuana (vs. Neither)	0.38	0.50	0.58	1.46 (0.55, 3.86)
Loss of Respect for Self				
Male Sex	-0.56	0.31	3.22	0.57 (0.31, 1.05)
Drinking Frequency	0.03	0.09	0.12	1.03 (0.87, 1.23)
Number of Sexual Partners	-0.15	0.13	1.28	0.86 (0.66, 1.12)
Alcohol Only (vs. Neither)	1.19	0.51	5.57 *	3.30 (1.22, 8.90)
Alcohol & Marijuana (vs. Neither)	1.42	0.54	6.99 **	4.13 (1.44, 11.82)
Embarrassment				
Male Sex	-0.08	0.30	0.08	0.92 (0.52, 1.64)
Drinking Frequency	-0.21	0.09	5.18 *	0.81 (0.67, 0.97)
Number of Sexual Partners	-0.15	0.13	1.23	0.86 (0.67, 1.12)
Alcohol Only (vs. Neither)	1.16	0.44	6.86 **	3.18 (1.34, 7.54)
Alcohol & Marijuana (vs. Neither)	0.84	0.50	2.86	2.31 (0.88, 6.12)
Emotional Difficulties				
Male Sex	-0.76	0.27	8.23 **	0.47 (0.28, 0.79)
Drinking Frequency	-0.03	0.08	0.12	0.97 (0.84, 1.13)
Number of Sexual Partners	-0.13	0.11	1.42	0.88 (0.70, 1.09)
Alcohol Only (vs. Neither)	0.63	0.35	3.29	1.87 (0.95, 3.69)
Alcohol & Marijuana (vs. Neither)	0.69	0.39	3.18	1.99 (0.93, 4.23)
Condom Use				
Male Sex	-0.10	0.23	0.18	0.91 (0.58, 1.42)
Drinking Frequency	-0.01	0.07	0.02	0.99 (0.87, 1.13)
Number of Sexual Partners	0.09	0.07	1.46	1.09 (0.95, 1.27)

Predictor	Estimate	SE	Wald χ^2	Odds Ratio (95% CI)
Alcohol Only (vs. Neither)	0.45	0.30	2.36	1.57 (0.88, 2.81)
Alcohol & Marijuana (vs. Neither)	0.27	0.34	0.63	1.31 (0.67, 2.54)

*
 $p < .05$.

**
 $p < .01$.

 $p < .001$.