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Alcohol Expectancy, Drinking Behavior, and Sexual Victimization Among Female and Male College Students

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Abstract

College students have high rates of heavy drinking, and this dangerous behavior is strongly linked to sexual victimization. Although research has examined risk factors for sexual assault, few studies have simultaneously studied the various pathways through which risks may affect sexual assault and how these pathways may be uniquely different among females and males. As such, the current study uses path analyses to examine whether alcohol expectancies mediate the relationship between social factors (e.g., hooking up, amount friends drink) and drinking behavior and experiencing sexual victimization, and whether drinking behavior mediates the relationship between alcohol expectancies and sexual victimization among a college sample of 704 males and females from a large Midwestern university. For both females and males, sexual victimization was positively associated with child sexual abuse, hooking up more often, and heavier drinking, whereas greater alcohol expectancies were associated with sexual victimization only for females. Several mediating pathways were found for both females and males. Gender comparisons

revealed that some of the pathways to sexual victimization such as hooking up, amount friends drink, and housing type operated differently for females and males.

Keywords: sexual victimization, alcohol, alcohol expectancy, college students

DRINKING among college students represents a daunting societal issue: 32% of college females and 43% of college males reported binge drinking in the past 30 days (Johnston, O'Malley, Bachman, & Schulenberg, 2011). In general, college women experience higher rates of sexual victimization compared with college men in the course of an academic year (7% vs. 3%; Hines, Armstrong, Reed, & Cameron, 2012). Moreover, approximately 25% to 30% of college women have experienced some form of sexual victimization that is related to problem drinking behaviors (Brahms, Ahl, Reed, & Amaro, 2011; Lawyer, Resnick, Bakanic, Burkett, & Kilpatrick, 2010; Lindgren, Neighbors, Blayney, Mullins, & Kaysen, 2012). Although the majority of research emphasizes the dichotomy of men as perpetrators (Abbey & McAuslan, 2004; Wells et al., 2014) and women as victims (Fisher, Cullen, & Turner, 2000), as many as 14% of college men have experienced some form of sexual assault as an adult (Aosved, Long, & Voller, 2011). Experiences of sexual assault among college students can range from sexually coercive tactics (e.g., threatening to disclose negative information about the person; Tyler, Hoyt, & Whitbeck, 1998) to attempted and completed rape (Fisher et al., 2000). Sexual victimization has also been linked to numerous adverse consequences, such as depression for college women (Messman-Moore, Long, & Siegfried, 2000) and increased problematic drinking for college men (Turchik, 2012).

Risk factors for sexual assault include heavy alcohol use (Abbey, 2002; Moulso, Fischer, & Calhoun, 2012; Neal & Fromme, 2007; Testa & Hoffman, 2012), as well as a history of childhood victimization (Aosved et al., 2011; Smith, White, & Holland, 2003). Positive alcohol expectancies (Marx, Nichols-Anderson, Messman-Moore, Miranda, & Porter, 2000), perceptions of peers' drinking behavior (Small & Kerns, 1993; Young, Morales, McCabe, Boyd, & d'Arcy, 2005), hooking up (Flack et al., 2007; Paul, McManus, & Hayes, 2000), and place of residence (e.g., Greek housing; Minow & Einolf, 2009) have also been found to be risk factors for sexual assault. Although research exists on the potential risks, few studies have examined the various pathways through which alcohol and other factors may affect sexual assault and even less common are those studies that have simultaneously examined pathways to sexual assault among both females and males (Abbey, 2011). To address these gaps, the current study uses path analyses to examine whether

alcohol expectancies mediate the relationship between social factors (e.g., hooking up, amount friends drink) and drinking behavior and experiencing sexual victimization. In addition, we assess whether drinking behavior mediates the relationship between alcohol expectancies and sexual victimization among a sample of female and male college students.

Associations Between Drinking Behavior, Alcohol Expectancy, and Sexual Assault

The use of alcohol among college students has been consistently linked to experiences of sexual assault (Abbey, 2002; Mouilso et al., 2012; Perkins, 2002), and gender continues to play an integral role in this association (Abbey & McAuslan, 2004; Fisher et al., 2000). Abbey, Ross, McDuffie, and McAuslan (1996) found that alcohol consumption on the part of either the perpetrator or the victim was involved in 46% of the reported cases of sexual assault. Among college men, drinking during sexual activity has been found to significantly increase their likelihood of perpetrating sexual assault (Abbey & McAuslan, 2004) and there is a positive relationship between the quantity of alcohol consumed by men and the increased risk of men's perpetration (Abbey, Clinton-Sherrod, McAuslan, Zawacki, & Buck, 2003). Victims' alcohol consumption is also related to elevated experiences of sexual assault, where increased use of alcohol makes individuals more vulnerable to victimization (Palmer, McMahan, Rounsaville, & Ball, 2010). For example, one study found that 72% of rape victims were intoxicated with alcohol at the time of the assault (Mohler-Kuo, Dowdall, Koss, & Wechsler, 2004). In general, college males (6%) report engaging in more drinking on a daily basis in relation to their female counterparts (2%; Johnston et al., 2011). In addition, 43% of college males reported binge drinking in the past 30 days compared with 32% of college females (Johnston et al., 2011).

In addition to alcohol use, research has unanimously found that a stronger endorsement of alcohol expectancies is related to higher levels of alcohol consumption (Gilles, Turk, & Fresco, 2006; Zamboanga, 2006) and higher risk of sexual assault (Marx et al., 2000). Moreover, some research finds that alcohol expectancies moderate the relationship between social deficits, such as anxiety and shyness, and problem drinking by interacting with people's individual social issues (Gilles et al., 2006; B. A. Lewis & O'Neill, 2000). In addition, other researchers have found that alcohol expectancies mediate the association between social factors (e.g., being offered drinks, social modeling, number of friends that drink) and alcohol consumption (Lau-Barraco, Braitman,

Leonard, & Padilla, 2012; Wood, Read, Palfai, & Stevenson, 2001). Gender also plays an important role in shaping the association between alcohol expectancies and experiences of sexual assault, though the findings are mixed in terms of whether men (Greenbaum, Del Boca, Darkes, Wang, & Goldman, 2005; Park & Levenson, 2002) or women (Read, Wood, Lejuez, Palfai, & Slack, 2004) endorse greater alcohol expectancies. Specifically, college women with a history of sexual victimization tend to more strongly endorse alcohol expectancies related to their greater vulnerability to sexual assault when drinking (Benson, Gohm, & Gross, 2007). Victims of substance-fueled sexual assault are also much more likely to consume alcohol, as well as subscribe to alcohol expectancies related to social and physical benefits (Corbin, Bernat, Calhoun, McNair, & Seals, 2001; Marx et al., 2000).

Other Risk Factors for Sexual Assault

In addition to the consumption of alcohol, a number of other risk factors have been identified as shaping the likelihood of sexual assault among college students. Early life experiences can pave the way toward future victimization, such that individuals with a history of childhood sexual abuse are at much greater risk of enduring revictimization as an adult (Aosved et al., 2011; Elliott, Mok, & Briere, 2004; Gidycz, Coble, Latham, & Layman, 1993). For example, one study found that approximately 30% of child sexual abuse victims experienced subsequent rape as an adolescent or adult (Messman-Moore, Walsh, & DiLillo, 2010). Moreover, though 9% of children have experienced sexual abuse, the likelihood of being a victim is much greater among girls compared with boys (Synder, 2000). Risk factors for sexual victimization can originate in childhood and extend into later life as young adults establish their own intimate relationships.

“Hooking up” in college, or engaging in spontaneous sexual encounters occurring without the expectation of further involvement, is associated with sexual victimization. For example, one study found that 78% of reported sexual assaults occurred within the context of hook ups at parties where alcohol was being served (Flack et al., 2007). In addition, Testa, Hoffman, and Livingston (2010) reported that both hook up behaviors and heavy alcohol use significantly increased the risk of sexual victimization following these behaviors among college women. Although some studies highlight similar rates of hooking up among male and female college students (Owen, Rhoades, Stanley, & Fincham, 2010), it is more closely associated with alcohol use for college women than college men (Owen, Fincham, & Moore, 2011), which could place women who hook up at greater risk for sexual victimization compared with men.

Other social factors are also important to understanding the relationship between alcohol expectancies and drinking behavior and risk for sexual assault. Research finds, for example, that the presence of friends' drinking is predictive of one's own alcohol consumption (Wood et al., 2001) and can strongly influence individual alcohol consumption patterns in populations of traditional college students (Borsari & Carey, 2001). Similarly, social modeling (i.e., peer drinking behavior, peer pressure) is significantly related to higher alcohol expectancies (Wood et al., 2001). Furthermore, undergraduate students consistently overestimate the amount of alcohol consumed and the frequency of drinking among their peers, and same-sex norms related to drinking more strongly predict increased alcohol use among women compared with men (M. A. Lewis & Neighbors, 2004). Similarly, perceptions of peer pressure that promote drinking are significantly related to increased levels of alcohol use within college samples (Knee & Neighbors, 2002). Moreover, gender differences show that college men emphasize peer pressure and the risk of embarrassment if they refrain from drinking, whereas college women are more concerned with the negative consequences associated with heavy alcohol use (Suls & Green, 2003). Students exposed to environments where alcohol is widely consumed and where increased salience of positive expectations of alcohol outcomes exists (LaBrie, Grant, & Hummer, 2011) are at greater risk for binge drinking (Weitzman, Nelson, & Wechsler, 2003), and heavy drinking is associated with sexual assault (Abbey, 2002; Mouilso et al., 2012; Neal & Fromme, 2007; Testa & Hoffman, 2012).

Finally, place of residence, such as membership in Greek housing, has been found to be associated with higher drinking levels (McCabe et al., 2004), more frequent alcohol consumption (Larimer, Anderson, Baer, & Marlatt, 2000), as well as greater risk for sexual victimization (Minow & Einolf, 2009). Similarly, compared with students living in residence halls, fraternity members experience more negative alcohol-related consequences, such as succumbing to blackouts and involvement in physical fights while drinking (Larimer et al., 2000). Moreover, research finds that both fraternity and sorority members engage in more drinking while partying compared with students living in residence halls or apartments (Page & O'Hegarty, 2006). In an examination of other living arrangements, some research has found that compared with students who lived off campus with their parents, those living on campus in a residence hall reported higher levels of heavy drinking (Wall, BaileyShea, & McIntosh, 2012). In contrast, Velazquez and colleagues (2011) examined several living arrangements including parent's home, residence hall, Greek housing, living with a roommate, and so forth but found that living situation was not significantly associated with drinking behaviors among college students.

Hypotheses

Based on the above literature, we hypothesized that experiencing child sexual abuse, hooking up more often, living in Greek housing, and having friends who drink higher quantities of alcohol would all be positively associated with alcohol expectancies. Next, we hypothesized that alcohol expectancies would be directly and positively associated with drinking behavior and sexual victimization as well as indirectly associated with sexual victimization through drinking behavior. Third, we expected that drinking behavior would be positively correlated with sexual victimization. Fourth, we expected that alcohol expectancies would mediate the relationship between social factors and sexual victimization, and fifth, that drinking behavior would mediate the relationship between alcohol expectancies and sexual victimization. Finally, we hypothesized that the various pathways leading to sexual victimization would operate differently for males and females. Specifically, we hypothesized that the effects of friends' drinking, being in Greek housing, and drinking behavior on sexual victimization would be stronger for males whereas the effects of child sexual abuse, hooking up, and alcohol expectancies on sexual victimization would be greater for females based on previous research.

Method

Participants

Participants for this study were 704 college students, including 282 men and 419 women (3 participants did not respond to the gender question), enrolled in undergraduate courses at a large Midwestern university. The majority of respondents were White (81%), followed by Black/African American (6.5%), Hispanic/Latino (4.6%), Asian (5%), and 3% identified their race as "Other." In terms of living situation, 48% of respondents lived in a residence hall/ dorm/student housing, 10% lived in a fraternity or sorority, and 42% lived off campus either alone or with a nonromantic roommate (28%), with a romantic partner (4.4%), or at home with parents (10%). Fifty-five percent of females and 39% of males had experienced at least one form of sexual victimization at least one time in the previous 12 months.

Procedures

In the fall of 2013 and spring of 2014, undergraduates enrolled in introductory sociology and psychology courses at a large Midwestern university were asked to complete a survey of attitudes and experiences about dating, sexuality, substance use and outcomes, and sexual victimization. There were no screener

questions; thus, every student was eligible to participate. Students were informed that their participation was voluntary, and their responses were anonymous. The students did not place their names on the survey. Students had the option of filling out the survey for course credit. If they did not wish to complete the survey, they were given another option (of equal value) to complete while students were filling out the survey. Students were told that if they chose not to fill out the survey or do the alternative extra credit assignment, it would not affect their course grade. In other words, they were given three options: (a) do not complete either assignment if they did not want extra course credit, (b) complete the survey for extra credit, or (c) complete an alternative assignment for extra course credit. A comparison of the number of returned surveys to each of the individual class sizes revealed an overall average response rate of 97.5% across all classes for those in attendance. The Institutional Review Board at the University of Nebraska-Lincoln approved this study.

Measures

Dependent variable. *Sexual victimization* was assessed using a modified version of the Revised Sexual Experiences Survey (Testa, VanZile-Tamsen, Livingston, & Koss, 2004). Both women and men were asked the following 12 questions: How often has anyone (a) “overwhelmed you with arguments about sex or continual pressure for sex to . . .,” (b) “threatened to physically harm you or used physical force (such as holding you down) to . . .,” and (c) “When you were incapacitated (e.g., by drugs or alcohol) and unable to object or consent how often has anyone ever . . .” within the past 12 months? Within each of these three sections, the following 4 questions were asked: (a) fondle, kiss, or touch you sexually; (b) try to have sexual intercourse with you (but it did not happen); (c) succeed in making you have sexual intercourse; and (d) make you have oral or anal sex or penetrate you with a finger or objects when you indicated you didn’t want to? Response categories ranged from 0 = never to 4 = more than 4 times. The language was gender neutral and thus applicable to both males and females. Because many of the individual items were skewed, they were first dichotomized (i.e., 0 = never happened and 1 = happened at least once) and then summed. Because the measure was still skewed, we did a log transformation, and this transformed variable was used in all analyses.

Table 1 presents sexual victimization by type of coercion for females and males. The numbers in the table indicate that the sexual victimization occurred at least once. For example, 37% of females ($n = 155$) were continually pressured for sex, at least one time, to be fondled, kissed, or touched sexually when they indicated they didn’t want to.

Table 1. Sexual Victimization by Type of Coercion for Females and Males.

Types of Sexual Victimization	Female				Male							
	Continual Pressure for Sex		Used Physical Force		Continual Pressure for Sex		Used Physical Force					
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%				
Fondle, kiss, or touch you sexually	155	37.0	28	6.7	138	33.0	65	23.4	18	6.5	59	21.2
Try to have sexual intercourse with you (but it did not happen)	143	34.2	24	5.7	86	20.6	53	19.1	13	4.7	40	14.4
Succeed in making you have sexual intercourse	71	17.0	13	3.1	46	11.0	38	13.7	12	4.3	24	8.7
Make you have oral or anal sex or penetrate you with a finger or objects	59	14.1	14	3.4	41	9.8	20	7.2	14	5.0	21	7.6

All of the items above ended with the phrase, "when you indicated that you didn't want to."

Independent variables. *Drinking behavior* included two items (adapted from Testa, Livingston, & Leonard, 2003) which asked respondents, "During the past 12 months, how many times have you gotten drunk on alcohol?" and "During the past 12 months, how many times have you consumed five or more (if you're a man)/four or more (if you're a woman) drinks in a single sitting?" (0 = never to 5 = 5 or more days per week). The two items were averaged (Testa et al., 2003), so a higher score indicated more frequent heavy drinking. The correlation between these two items was .85.

Alcohol expectancy included six items from the Social/Physical Pleasure scale of the Alcohol Expectancy Questionnaire (Brown, Goldman, Inn, & Anderson, 1980). For example, "Alcohol makes me happy" and "Drinking adds a certain warmth to social occasions." Consistent with prior studies (e.g., Greenbaum et al., 2005), the Social/Physical Pleasure scale was used because it has been shown to consistently predict drinking among college samples (Darkes, Greenbaum, & Goldman, 2004). In the current study, an index was created such that the higher the score, the higher the alcohol expectancy. Alpha reliability for this scale in the current study was .72.

Child sexual abuse was measured by asking respondents, "Before you were age 18, did any adult or someone at least 5 years older than you ever touch you sexually or have you touch them sexually?" (0 = no, 1 = yes).

Hooking up was a single item measure, which asked respondents, "How many times in the past 12 months have you hooked up?" (0 = never to 4 = 10 or more times).

Place of residence was measured by asking students where they were living in the current semester. Five dummy coded variables were created for the different housing options whereby respondents were assigned a value of 1 if they were in the housing group and a value of 0 if they were not in that group. The categories included (a) residence hall/dorm/student housing, (b) fraternity/sorority house, (c) off campus alone or with a friend/non-romantic roommate, (d) off campus with a romantic partner/spouse, and (e) at home with parents.

Amount friends drink was a single item which asked respondents "How much do your close friends typically consume when drinking?" Response categories included 0 = they do not drink; 1 = one or two drinks; 2 = three to five drinks; and 3 = six or more drinks. Pearson correlation coefficients for all measures are presented in Table 2 along with the means, standard deviations (*SDs*), and ranges.

Analytical Procedure

To be able to compare males and females simultaneously on the association between social factors, alcohol expectancy, drinking behavior, and sexual

Table 2. Correlation Matrix for All Study Variables.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Female	—											
2. Child sexual abuse	-.070	—										
3. Hooking up	-.189**	.005	—									
4. Residence hall	.102*	-.059	-.087*	—								
5. OC with roommate	-.071	.032	.117**	-.621**	—							
6. OC with romantic partner	.035	.127**	-.169**	-.206**	-.128**	—						
7. At home with parents	-.063	-.004	-.020	-.307**	-.191**	-.064	—					
8. Fraternity/sorority	-.028	-.031	.104**	-.323**	-.201**	-.067	-.099*	—				
9. Amount friends drink	-.169**	.000	.296**	-.070	.155**	.004	-.155**	.030	—			
10. Alcohol expectancy	-.081*	-.019	.243**	.003	-.023	-.040	-.095*	.148**	.299**	—		
11. Drinking behavior	-.188**	-.020	.471**	-.144**	.172**	-.085*	-.159**	.194**	.442**	.395**	—	
12. Sexual victimization	.177**	.142**	.300**	-.016	.052	.028	-.079*	.005	.173**	.220**	.286**	—
<i>M</i>	0.609	0.113	1.121	0.499	0.279	0.041	0.087	0.095	3.139	3.364	1.024	0.278
<i>SD</i>	0.488	0.317	1.278	0.500	0.449	0.198	0.281	0.293	0.852	1.898	0.944	0.328
Range	0-1	0-1	0-4	0-1	0-1	0-1	0-1	0-1	1-4	0-6	0-4	0-1.11

OC = off campus.
* $p < .05$; ** $p < .01$

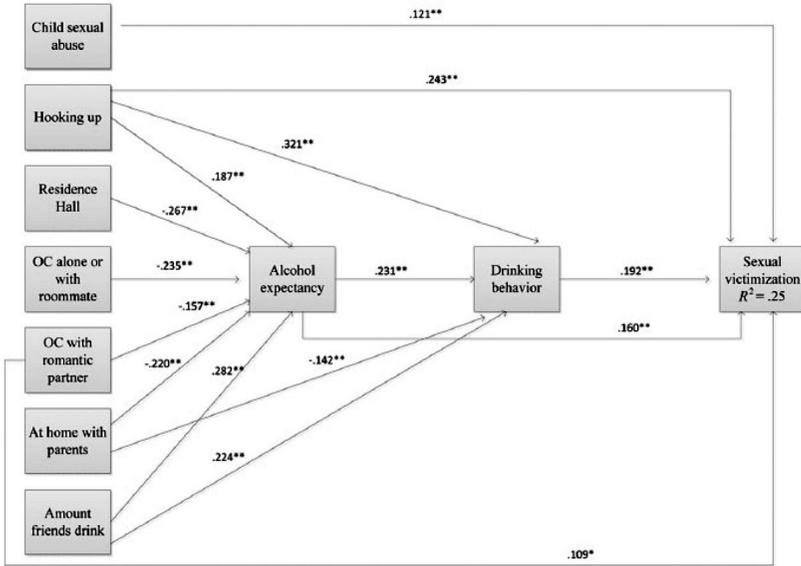


Figure 1. Path model for correlates of sexual victimization for females (only significant paths shown). Greek residence is the omitted housing category. OC = off campus. * $p < .05$; ** $p < .01$

victimization, a fully recursive (i.e., all possible paths are hypothesized with the exception of reciprocal paths) multiple groups path model was estimated using the maximum likelihood estimator in Mplus 6.1 (Muthen & Muthen, 1998-2007). For interpretation purposes, the standardized path coefficients (β) reported represent the effect of a given predictor variable on the dependent variable after accounting for the remaining relationships in the model. Although ordinary least squares regression would also give us the standardized effect (i.e., β), multiple groups models allow us to compare two groups and estimate all of the paths simultaneously. This model takes into account both the direct effects as well as the indirect effects through alcohol expectancy and drinking behavior.

Results

Direct Effects

Results for the path analysis for females (only significant paths given) are shown in Figure 1. The numbers in this figure are standardized beta

coefficients. Among females, higher alcohol expectancy was positively associated with hooking up more times ($\beta = .187$) and having close friends who generally consume higher amounts of alcohol ($\beta = .282$). In terms of place of residence, living on campus in residence halls/dorms ($\beta = -.267$), off campus alone or with a roommate ($\beta = -.235$) or romantic partner ($\beta = -.157$), or at home with parents ($\beta = -.220$) were all significantly and negatively associated with alcohol expectancy meaning that female students living in any of these four types of housing arrangements had significantly lower alcohol expectancies compared with those living in a sorority. Drinking behavior was positively associated with hooking up more often ($\beta = .321$), higher alcohol expectancy ($\beta = .231$), and having close friends who consume more alcohol ($\beta = .224$). Compared with women living in a sorority house, those living at home with parents had significantly lower scores on drinking behavior ($\beta = -.142$). Furthermore, females who hooked up more often ($\beta = .243$), and who had higher alcohol expectancies ($\beta = .160$) and more heavy drinking ($\beta = .192$) were significantly more likely to experience more sexual victimization. Sexual victimization was also positively associated with experiencing child sexual abuse ($\beta = .121$). Finally, females who lived off campus with a romantic partner were more likely to experience greater sexual victimization compared with women living in a sorority ($\beta = .109$). Overall, the model explained 25% of the variance in sexual victimization for females.

Results for the path analysis for males (only significant paths given) are shown in Figure 2. Among males, higher alcohol expectancy was associated with having close friends who consume higher amounts of alcohol ($\beta = .225$). In terms of place of residence, males who lived off campus alone or with a roommate had significantly lower alcohol expectancy compared with those living in a fraternity house ($\beta = -.238$). Drinking behavior was positively linked to hooking up more often ($\beta = .282$), higher alcohol expectancy ($\beta = .222$), and having close friends who consume more alcohol ($\beta = .232$). Males who lived in a resident hall/dorm ($\beta = -.348$), off campus alone or with a roommate ($\beta = -.188$), off campus with romantic partner ($\beta = -.132$), or at home with parents ($\beta = -.278$) had significantly lower rates of heavy drinking compared with males living in a fraternity house. Finally, sexual victimization was positively associated with experiencing child sexual abuse ($\beta = .239$), hooking up more often ($\beta = .250$), and heavier drinking ($\beta = .169$). None of the housing types were significantly associated with sexual victimization for males. Overall, the model explained 18% of the variance in sexual victimization for males.

All of the coefficients for direct paths are statistically similar for females and males at the .05 level with the exception of the direct effect of living in a residence hall/dorm on drinking behavior. Here, the negative association

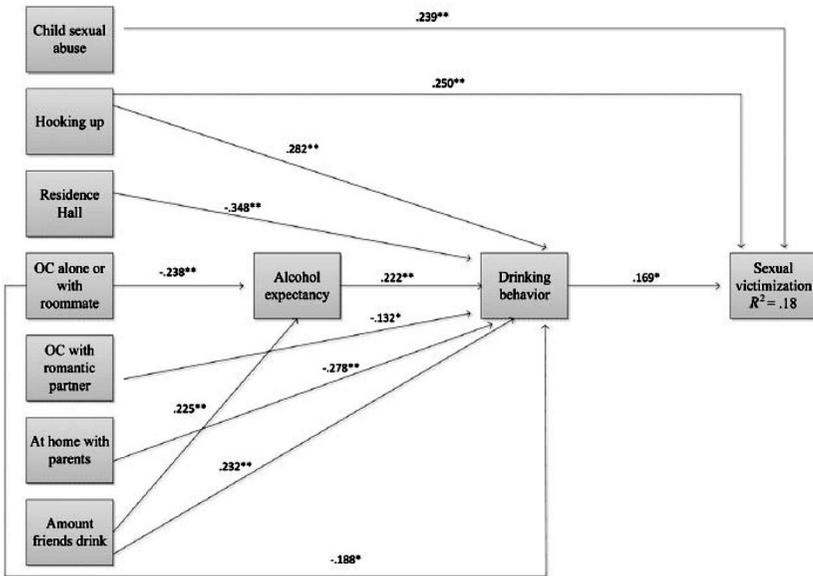


Figure 2. Path model for correlates of sexual victimization for males (only significant paths shown). Greek residence is the omitted housing category. OC = off campus. * $p < .05$; ** $p < .01$

between living in a residence hall/dorm (relative to living in a sorority/fraternity) and drinking behavior is stronger for males ($\beta = -.348$) than females ($\beta = -.144$). It is also worth noting that we observe marginally significant ($p < .10$) gender differences in the direct effects of living off campus alone or with a roommate on drinking behavior and alcohol expectancy on sexual victimization (results not shown).

Indirect Effects

The full indirect effect results for females (see top half of Table 3) revealed that while five variables had significant direct effects on sexual victimization (i.e., child sexual abuse, hooking up, living off campus with romantic partner, alcohol expectancy, and drinking behavior), seven variables also had significant indirect effects. That is, hooking up and amount friends drink had a significant indirect effect on sexual victimization through (a) alcohol expectancy, (b) drinking behavior, and (c) alcohol expectancy then drinking behavior. Specifically, females who hook up more often and those who report

Table 3. Full Model Results for Sexual Victimization.

Variables	Direct Effect		Total Indirect Effect		Total Effect	
	Estimate	SE	Estimate	SE	Estimate	SE
Females						
Child sexual abuse	.121**	.045	-.006	.012	.115**	.047
Hooking up	.243**	.050	.100**	.023	.342**	.046
Residence hall ^a	.104	.081	-.082**	.027	.022	.083
OC with roommate ^a	.116	.077	-.050*	.024	.066	.079
OC romantic partner ^a	.109*	.055	-.044**	.017	.065	.056
At home with parents ^a	.081	.059	-.072**	.021	.009	.060
Amount friends drink	.070	.051	.101**	.022	.171**	.048
Mediating constructs						
Alcohol expectancy	.160**	.050	.044**	.015	.204**	.049
Drinking behavior	.192**	.056				
Males						
Child sexual abuse	.239**	.057	-.003	.009	.236**	.057
Hooking up	.250**	.065	.054*	.024	.305**	.061
Residence hall ^a	.055	.105	-.063*	.030	-.008	.103
OC with roommate ^a	.006	.098	-.045	.025	-.039	.097
OC romantic partner ^a	.077	.067	-.021	.014	.056	.067
At home with parents ^a	-.028	.082	-.051*	.024	-.079	.080
Amount friends drink	-.031	.066	.051*	.024	.021	.063
Mediating constructs						
Alcohol expectancy	.015	.062	.038*	.019	.053	.061
Drinking behavior	.169*	.073				

Standardized coefficients shown. OC = off campus.

a. Greek residence is the omitted category.

* $p < .05$; ** $p < .01$

having close friends who consume larger amounts of alcohol have higher alcohol expectancy, which is related to greater sexual victimization. In addition, young women who hook up more and have friends who drink more are at greater risk for heavy drinking, which, in turn, relates to more sexual victimization. Furthermore, hooking up more often and friends who drink more also relate to greater alcohol expectancy, which then corresponds to heavier drinking, which in turn is associated with greater sexual victimization. Alcohol expectancy not only had a direct effect on sexual victimization, but it also had a significant indirect effect through drinking behavior. With the exception of living off campus with a romantic partner, housing type was not directly associated with sexual victimization but rather was indirectly associated

via alcohol expectancy, and in each case, more sexual victimization was associated with living in a sorority house.

The results for males (bottom half of Table 3) revealed that while three variables had a significant direct effect on sexual victimization (i.e., child sexual abuse, hooking up, and drinking behavior), five variables also had significant indirect effects. That is, both hooking up and amount friends drink had a significant indirect effect on sexual victimization through drinking behavior. Specifically, males who hook up more often and those who report having close friends who consume larger amounts of alcohol are at greater risk for heavy drinking, which, in turn, leads to more sexual victimization. Alcohol expectancy had a significant indirect effect on sexual victimization through drinking behavior. Although none of the housing types were directly associated with sexual victimization, there was an indirect effect for those living in a residence hall/dorm and at home with parents such that these two groups reported less drinking (compared with fraternity men) which, in turn, resulted in less sexual victimization compared with those living in a fraternity house.

Statistically significant ($p < .05$) indirect effect results for sexual victimization for females and males are presented in Table 4. Here, a significant indirect effect coefficient indicates that the corresponding indirect pathway is statistically significant. For example, the coefficient for “Hooking up \rightarrow Alcohol expectancy” ($\beta = .030$) in the female subsample is significant at the .05 level, meaning the effect of hooking up on sexual victimization is mediated, in part, through alcohol expectancy for females. The indirect effect coefficient is given by multiplying the coefficient for the direct effect of the independent variable on the mediating variable by the coefficient for the direct effect of the mediating variable on the dependent variable. Thus, in the example provided above, the standardized indirect effect coefficient of .030 is given by taking the product of “Hooking up \rightarrow Alcohol expectancy” ($\beta = .187$) and “Alcohol expectancy \rightarrow Sexual victimization” ($\beta = .160$).

In the final step of the analyses, we tested the equality of the indirect effect coefficients by calculating the difference in each unstandardized indirect effect coefficient between females and males. We then tested whether the difference in each indirect effect coefficient was significantly different from zero. A total of 11 indirect effects were tested (see Table 4). Of these, five were found to be significantly different between females and males. First, the path from hooking up to sexual victimization via alcohol expectancy was significantly different by gender, suggesting that alcohol expectancy acts as a mediator in the relationship between hooking up and sexual victimization for females but not for males. Second, the pathway from amount friends drink to sexual victimization via alcohol expectancy was significant for females but not for males indicating that

Table 4. Statistically Significant Indirect Effects for Females and Males.

Indirect Pathway to Sexual Victimization	Female		Male		$b_{\text{female}} - b_{\text{male}}^a$
	<i>b</i>	β	<i>b</i>	β	
Hooking up → Alcohol expectancy	0.009*	0.030*	0.000	0.002	0.008*
Hooking up → Drinking behavior	0.018*	0.062**	0.010*	0.048*	0.007
Residence hall → Alcohol expectancy ^b	-0.029*	-0.043*	-0.001	-0.001	-0.028*
Residence hall → Drinking behavior ^b	-0.019	-0.028	-0.035*	-0.059*	0.017
OC with roommate → Alcohol expectancy ^b	-0.029*	-0.038*	-0.002	-0.004	-0.027
OC with romantic partner → Alcohol expectancy ^b	-0.040*	-0.025*	0.001	0.000	-0.041*
At home with parents → Alcohol expectancy ^b	-0.046*	-0.035*	-0.001	-0.001	-0.045*
At home with parents → Drinking behavior ^b	-0.036*	-0.027*	-0.045*	-0.047*	0.010
Amount friends drink → Alcohol expectancy	0.019**	0.045**	0.001	0.003	0.018*
Amount friends drink → Drinking behavior	0.018**	0.043**	0.013*	0.039*	0.005
Alcohol expectancy → Drinking behavior	0.008**	0.044**	0.006*	0.038*	0.002

Indirect effect is presented if the indirect effect coefficient is statistically significant ($p < .05$) for females and/or males.

"*b*" indicates unstandardized coefficient, and β indicates standardized coefficient. OC = off campus.

a. Difference between unstandardized coefficients for females and males.

b. Greek residence is the omitted category.

* $p < .05$; ** $p < .01$

the effect of alcohol expectancy on sexual victimization operates differently by gender. Type of housing also tended to matter more for females compared with males. That is, living in a residence hall/dorm, living off campus with a romantic partner, and living at home with parents were all indirectly associated with sexual victimization via alcohol expectancy, and these findings were significant for females but not for males. All of the other indirect path coefficients in the model were statistically similar for females and males.

Discussion

The purpose of this article was to examine whether alcohol expectancies mediate the relationship between social factors (e.g., hooking up, amount friends drink) and drinking behavior and experiencing sexual victimization. In addition, this study aimed to explore the mediational role of drinking behavior in

the relationship between alcohol expectancies and sexual victimization and whether the paths vary by gender. Overall, the rates of sexual victimization for both men and women found in this study far exceed those reported elsewhere (Hines et al., 2012), which could be related to our more expansive definition of sexual victimization and the wide range of coercive strategies, as well as the broader time frame of occurrence of sexual victimization in the past 12 months. Although some of the pathways to sexual victimization were similar for males and females (e.g., child sexual abuse and hooking up, described below), other pathways were unique to females. Current study findings highlight the fact that even though male and female college students have high rates of drinking, have friends who consume alcohol at high levels, and have certain expectations related to drinking, the dynamics of these factors and how they affect sexual victimization are uniquely different for females compared with males.

Regarding gender differences, the path from hooking up to sexual victimization via alcohol expectancy and the path from amount friends drink to sexual victimization via alcohol expectancy were both significant for females but not for males. In addition, housing type mattered more for females compared with males. That is, women living in a residence hall/dorm, living off campus with a romantic partner, and living at home with parents experienced significantly less sexual victimization via alcohol expectancy compared with sorority women, which is consistent with prior research (Minow & Einolf, 2009). These gendered differences add nuanced understandings to previous studies showing that women endorse greater alcohol expectancies (Read et al., 2004), and higher endorsement of alcohol expectancies predicts victimization status with regard to risk for sexual assault (Benson et al., 2007).

For both males and females, a history of child sexual abuse is predictive of revictimization, which has been consistently found in prior research (Aosved et al., 2011; Gidycz et al., 1993). Hooking up among both males and females also significantly increases one's chances of being a victim of sexual assault, a finding corroborated by the work of others (Flack et al., 2007; Paul et al., 2000). This behavior is particularly risk-laden as it affects sexual victimization through various avenues. That is, hooking up not only directly increases one's chances for sexual victimization but it also does so indirectly through alcohol expectancy (for females) and through heavy drinking (both males and females). Based on these findings, the risks associated with hooking up are exacerbated in multiple ways through its association with both victimization and drinking beliefs and behaviors.

The perception of how much one's peers drink is also highly indicative of the influence of the social context surrounding drinking patterns. Specifically, if one thinks their peers consume large quantities of alcohol, college males and

females have higher alcohol expectancies and thus tend to drink more themselves. This pathway is revealed in the current study whereby having friends who consume more alcohol was directly and positively linked to both alcohol expectancy and the respondent's own drinking behavior for both males and females. Although campus culture in general contributes to widespread drinking behavior regardless of residence type, the social context of Greek housing adds an additional element of risk for sexual victimization, especially for females, as Greek housing is highly conducive to excessive drinking (Page & O'Hegarty, 2006). Regardless of gender, the current study finds that higher alcohol expectancy leads to heavy drinking which, in turn, leads to more sexual victimization.

It is possible that college students have certain social expectations when they drink alcohol (e.g., "alcohol makes me feel happy" and "when I am drinking it is easier to open up and express my feelings"; Brown et al., 1980) and may drink to achieve these desired outcomes. Specifically, when individuals drink alcohol, they believe that certain outcomes are associated with this behavior and if they drink, this behavior will result in the expected effects. Whether or not the outcome expectations are logical is irrelevant; what is important is only that individuals believe that drinking will produce the outcomes they anticipate (Jones, Corbin, & Fromme, 2001). The concept of alcohol-related expectancies, or beliefs regarding the potential outcomes resulting from alcohol consumption, has been found to be a primary predictor of consuming and abusing alcohol (Brown, Christiansen, & Goldman, 1987; Jones et al., 2001; Wells et al., 2014).

However, other expectations of alcohol include "when they drink, women become more sexually relaxed" and "I feel powerful when I drink, as if I can really influence others to do as I want." If college students believe they can achieve these outcomes by drinking, not only will this increase their alcohol consumption, but it also increases the risk that they will become a victim or perpetrator of sexual assault as prior research has unanimously found that a stronger endorsement of alcohol expectancies is related to higher levels of alcohol consumption (Gilles et al., 2006; Zamboanga, 2006) and higher risk of sexual assault (Marx et al., 2000). The current study findings contribute to this larger body of research and further refine understandings of alcohol-related beliefs as our results reveal gender differences in this process whereby sorority women who endorse higher alcohol expectancies are at greater risk for sexual victimization compared with women who live in residence halls/dorms, off campus with a romantic partner, or at home with parents. For all respondents, alcohol expectancies act as a double-edged sword by not only increasing a student's risk of drinking more if they hope to achieve desirable outcomes from alcohol, but greater consumption of alcohol also heightens one's susceptibility to sexual victimization.

Limitations

Some limitations of the current study should be noted. First, all data are based on self-reports. Despite this, participants were informed that their answers would be anonymous so it is less likely that the respondents would be motivated to bias their responses. Another limitation is the retrospective nature of some of the measures (i.e., past 12 months), which may have resulted in some over- or underreporting if respondents misremembered their behavior. Third, this study was cross-sectional; therefore, inferences about causality cannot be made. For example, while we modeled hooking up as an independent variable leading to drinking behavior, the reverse relationship is also plausible. In addition, this study cannot be generalized to the whole college population given that the sample was not randomly selected. The potential existed for students to fill out the survey more than one time if they happened to be in another course we were sampling, despite the fact that we specifically announced to each class that if they had already filled out the survey in another class to please choose the other extra credit assignment. Finally, this study did not ask about the gender of the perpetrator. Characteristics of the perpetrator could distinctively shape experiences of sexual assault, as the perpetrator's gender is more variable among male victims (Breiding et al., 2014; Peterson, Voller, Polusny, & Murdoch, 2011) but it is predominantly men who sexually assault women (Breiding et al., 2014). For example, men's sexual victimization contradicts normative gendered relationship scripts, and men may experience greater adverse effects if the perpetrator is another man (Struckman-Johnson & Struckman-Johnson, 1994), as this could challenge men's sense of heterosexuality (Mezey & King, 1989).

Conclusion

Our results offer some unique insights into the various pathways through which social factors, alcohol expectancy, and drinking affect sexual victimization. Specifically, our results indicate that hooking up and the amount that close friends drink are tied to higher alcohol expectancies for both men and women, and these expectancies lead to higher levels of drinking, which, in turn, increases one's risk for sexual assault. Our findings also reveal that place of residence uniquely affects sexual victimization with sorority women being at the greatest risk, especially when they endorse higher alcohol expectancies. These findings suggest the need for future research to further examine the multiple pathways through which social factors, alcohol expectancy, and individual drinking behavior can potentially lead to sexual victimization.

Because the current study found unique gender effects for the role of alcohol expectancy as a mediator in this process, this suggests the need for further exploration of this important variable among both male and female college students. Future research on college populations are needed to see whether these gendered findings in the role of alcohol expectancy can be replicated. Gender should be taken into consideration for campus-based interventions that highlight the unique risks that female and male undergraduates face when engaging in drinking in social contexts (Kelly-Weeder, 2008). It is also important to develop alcohol-focused reduction interventions for both male and female heavy drinkers that can be implemented even when they do not seek traditional alcohol treatment. In addition, widespread dissemination of alcohol-focused reduction efforts would also benefit the college student population more broadly because it may reduce the risk for future revictimization even among light drinkers as well as among one's peers. Because the impact of peer drinking is so influential, an intervention effort aimed at the broadest level may have the most impact overall in reducing harmful drinking and, subsequently, sexual victimization among college females and males.

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