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Alcohol Use and Perceived Social and Emotional Consequences among Perpetrators of General and Sexual Aggression

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Abstract

This study examined the relation between alcohol use, alcohol-related aggression expectancies, and the perceived negative consequences of perpetrating general and sexual aggression. Participants ($N = 2,941$; 59% female) were incoming college freshmen who reported on the last three months of their senior year of high school. Hierarchical multiple regression analyses for general aggression revealed that heavy alcohol consumption at the time of the aggression and strong alcohol-related aggression expectancies were associated with more frequent social and emotional consequences. For sexual aggression, similar regression analyses found that any alcohol use at the time of the aggression, but not outcome expectancies, was associated with social and emotional consequences. Among individuals who perpetrated general and sexual aggression, consuming alcohol at the time of the aggression was positively associated with perceived negative social and emotional consequences. Results do not support the idea that alcohol is used as an excuse for aggressive behavior.

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Aggressive behavior can be conceptualized as general aggression (verbal arguments and physical fights) or sexual aggression (unwanted sexual advances and forced intercourse). Both generally and sexually aggressive behaviors have high prevalence rates among young adults (Dahlberg, 1998; Leonard, Quigley, & Collins, 2002). The Youth Risk Behavior Survey (YRBS) found that 33% of the total students sampled in grades 9–12 reported being in a physical fight within the past 12 months (25% of females, 41% of males; Centers for Disease Control and Prevention, 2003). In a large survey of Canadian high school students, 42% endorsed being involved in either physical or verbal aggression at least a few times a year (Willoughby, Chalmers, & Busseri, 2004). The prevalence rate for sexual assault among adolescents aged 12 to 17 was approximately 1%, however, up to 57% of college-aged men reported sexual assault perpetration (Abbey, McAuslan, & Ross, 1998; Craig, Kalichman, & Follingstad, 1989; Muehlenhard & Linton, 1987; Rapaport & Burkhart, 1984; Wolitzky-Taylor et al., 2008).

Victims of aggression experience a plethora of negative consequences, such as psychological distress, increased use of psychoactive drugs, and impaired health (Kilpatrick et al., 2003; Romito, Turan, & De Marchi, 2005). Although less frequently studied, perpetrators of aggressive behavior also have an increased potential for social rejection (Coie, Dodge, & Coppotelli, 1982), and may be more likely to experience academic,

physical, social, and emotional problems than individuals who have not perpetrated aggression (Nansel et al., 2001).

Consistent with basic conditioning principals and social learning theory, the consequences of a behavior are important in determining the subsequent frequency with which those behaviors will occur (e.g., Bandura, 1973, 1977). Behavior that is reinforced with positive outcomes has a greater likelihood of persisting, whereas the absence of positive reinforcement and/or punishment should lead to a decrease in the behavior. Thus individuals who act aggressively and experience negative consequences may be less likely to continue their aggressive behavior. The social and emotional consequences of aggressive behavior, however, may vary depending on the perpetrator's perception of the outcome. Whereas some outcomes will be perceived as negative to some individuals, others will not. The extent to which a perpetrator perceives outcomes as negative may influence their decisions regarding future behavior. To better understand how perceived negative social and emotional consequences may influence future behavior, further examination is needed of the circumstances in which perpetrators may or may not experience negative consequences.

Alcohol Use, Expectancies, and Perceived Negative Consequences of Aggression

A link between alcohol consumption and aggression has been well established using both global and situational association studies. Global association studies examine the effects of typical alcohol consumption, and have revealed that heavy drinking and more frequent alcohol consumption are related to the occurrence of general (e.g., Chermack & Blow, 2002; Swahn & Donovan, 2004) and sexual aggression (Koss & Dinero, 1988; Ullman, Karabatsos, & Koss, 1999). Situational investigations involve the simultaneous occurrence of alcohol with aggression and have found that 50% of violent crimes (Pernanen, 1991) and sexual assaults (Abbey et al., 1998; Abbey, Zawacki, Buck, Clinton, & McAuslan, 2004) involve alcohol use. Additionally, interpersonal aggression was more likely to occur on days when alcohol was consumed compared to days when no alcohol was consumed (Fals-Stewart, 2003). In part because of this relation between alcohol and aggression, some individuals hold expectancies regarding the influence of alcohol on aggressive behaviors.

Outcome expectancy is an extension of social learning theory, which posits that decisions about whether or not to engage in behaviors (such as aggression) are influenced by the expectancies, or beliefs, about the outcomes associated with engaging in a specific behavior (for review see Patel & Fromme, in press). Individuals who believe that alcohol use will increase aggression, and expect a positive result (e.g., decrease in frustration), may act more aggressively under the influence of alcohol (for review see Quigley & Leonard, 2006; Wilson, Calhoun, & McNair, 2002). Because positive consequences are expected from their aggressive behavior, these individuals may either ignore any negative consequences that occur or perceive negative social and emotional repercussions as no fault of their own. Thus, the perpetrator's perceived negative consequences of aggression may be affected by their expectancies for aggression after consuming alcohol (MacAndrew & Edgerton, 1969).

Consistent with this, anecdotal reports indicate that perpetrators may blame their aggressive behaviors on alcohol consumption (i.e., "It's the drink that is making me act this way;" Critchlow, 1986, p. 754), however, empirical support is scarce. In an alcohol administration study, intoxicated participants anticipated a lower likelihood of experiencing negative consequences from engaging in behavioral risks, including aggression, than did sober individuals (Fromme, Katz, & D'Amico, 1997). Although not a direct assessment of actual consequences experienced, this finding suggests that people expect fewer negative consequences of their behavior when intoxicated than when sober. What is not known, however, is whether individuals who consume alcohol while acting aggressively are actually

less likely to perceive fewer negative consequences, particularly when the consequences are under their own control (e.g., emotional reactions).

Evidence suggests that other people may also hold perpetrators less responsible for aggressive behaviors when they are under the influence of alcohol (Scully, 1991; Zhang, Welte, & Wieczorek, 2002). Although not consistently supported (e.g., Paglia & Room, 1998), individuals depicted in scenarios as acting aggressively when drinking were judged to be less blameworthy and less responsible than individuals in identical scenarios who were not drinking (Critchlow, 1985). Moreover, individuals judged male rapists as less responsible when he had been drinking than when he had not been drinking (Richardson & Campbell, 1982). This tendency for others to excuse alcohol-related aggressive behavior suggests that perpetrators may be less likely to experience negative outcomes when they have been drinking, especially when these outcomes are related to others' views of their behavior (e.g., social consequences).

Alcohol-related aggression expectancies may also affect the perpetrator's perceived negative consequences regardless of whether or not alcohol has been consumed. In a study of marital aggression, husbands who held alcohol-related aggression expectancies engaged in severe aggression towards their wives less frequently than husbands who did not hold those expectancies (Quigley & Leonard, 1999). This may represent an attempt by these men to regulate behavior based on their anticipated negative outcomes of aggression. A direct assessment is needed, however, regarding the relation between alcohol-related aggression expectancies and the experience of perceived negative consequences.

Present Investigation

Little is known about the perceived negative consequences experienced by the perpetrators of aggression. As reflected by social learning theory, negative consequences may serve to break the cycle of reinforcing aggressive behavior, and need to be better understood. In particular, alcohol is often associated with aggressive behaviors; however, it is not known whether negative consequences are perceived differently when alcohol is or is not involved in aggressive incidents, and to what extent alcohol-related aggression expectancies relate to the perception of negative consequences.

The purpose of the present investigation was to examine whether situational alcohol use and expectancies influenced the perceived negative consequences of two types of aggression (i.e., general and sexual). It was hypothesized for both general and sexual aggression that (1) after controlling for average alcohol consumption and overall frequency of aggression, aggression-specific alcohol use at the situational level would be associated with fewer negative consequences than aggression when alcohol was not consumed, and (2) fewer negative consequences would be experienced by participants who held stronger alcohol-related aggression expectancies.

Method

Participants and Procedures

Participants were recent high school graduates (N=2,941) who were invited to participate in a four-year longitudinal study investigating alcohol use and other behavioral risks. All procedures were approved by the institution's human subjects review board. The recruitment methods and randomization procedures were described in detail in a previous manuscript (see Hatzenbuehler, Corbin, & Fromme, 2008). In brief, participants were recruited during the summer before beginning their freshmen year of college at a large southwestern university. All participants graduated high school as well as entered college in 2004, and therefore were first-time college freshmen. Participants also had to be unmarried, and 17 to

19 years old ($N = 6,391$). Of those, 4,022 participants¹ were asked to complete a web-based survey assessing behaviors that occurred during the last three months of their senior year of high school. A total of 2,941 (73%) provided informed consent, completed the survey, and were paid \$30.00.

The mean age of the participants was 18.4 ($SD=0.35$), and the sample was comprised of 59% women compared to 54.8% women for the incoming freshman class. The ethnic make-up of the participants was 54% White, 18% Asian, 16% Hispanic, and 12% multiracial or other ethnicity, which closely resembled the ethnic distribution of the entire incoming class.

Measures

Demographics—Participants provided their age, sex, and race and ethnicity.

Aggressive behaviors—A 7-point response scale was used to assess the frequency with which participants got in to a verbal or physical fight, lost their temper, or said/did rude things (0=never; 6=more than 20 times), and an average frequency of general aggression score was computed. These items had adequate internal reliability ($\alpha=.74$).

Sexual aggression was assessed using a modified version of the Sexual Experiences Survey (SES; Koss & Oros, 1982) for which participants indicated the number of times they had perpetrated unwanted sexual advances or forced sex play (e.g., fondling, kissing, or petting), and/or forced someone into having sexual intercourse through arguments, pressure, or physical force. Seven point response scales were used (0=never; 6=more than 20 times). As the items were significantly correlated, $r=.22$, $p<.001$, they were averaged to form an average frequency of sexual aggression score.

Whenever participants endorsed general or sexual aggression, follow-up questions assessed alcohol consumed while acting aggressively and the negative consequences experienced. Separate questions for general and sexual aggression measured the amount of alcohol that was consumed on average at the time aggression occurred, but questions did not assess discrete aggressive events. Responses were provided on a 4-point scale (0=none; 4=6 or more drinks). Also assessed on 5-point Likert scales (0=never; 4=always) were how often social (e.g., was rejected, hurt your reputation), emotional (e.g., had regrets, felt angry, or felt worried), physical (e.g., hurt yourself or someone else), disciplinary (e.g., got caught, arrested, or punished), and financial (e.g., money spent or lost) consequences were experienced as a result of the general or sexual aggression. A principle components analyses (PCA) was conducted to assess the dimensionality of these five types of consequences, and two latent factors resulted: Social and Emotional consequences, and Other (i.e., physical, disciplinary, and financial) consequences. Other consequences, however, will not be used in further analyses due to the low means for general ($M = 0.23$, $SD = 0.43$) and sexual aggression ($M = 0.16$, $SD = 0.41$), suggesting that these consequences (i.e., physical, disciplinary, and financial) were not often experienced. Responses were then averaged to create composite Social and Emotional consequences variables for general and sexual aggression (Cronbach alphas were .64 and .71, respectively). Because reports of social and emotional consequences were only obtained from the participant, this variable reflects the perpetrator's Perceived Social and Emotional consequences of aggression.

Typical Alcohol use—The Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985) was used to assess participants' typical quantity and frequency of drinking.

¹Participants were randomly assigned to one of three conditions: (1) Waves 1–4 ($n = 2,245$), (2) Waves 1 and 4 ($n = 976$), and (3) Wave 4 only ($n = 810$). For this study, all participants randomized to and completing Wave 1 are included.

Alcohol use quantity represents the number of drinks typically consumed on each day of the week (range 0–99), whereas alcohol use frequency represents the number of days per week on which alcohol was consumed (range 0–7) during the same time frame.

Outcome expectancies—Alcohol-related expectancies for general and sexual aggression were assessed using two items generated for this study and modeled after items in the Comprehensive Effects of Alcohol questionnaire (CEOA; Fromme, Stroot & Kaplan, 1993). Items were designed to directly map on to the frequency assessments for general and sexual aggression, and were used to indicate beliefs about the likelihood of engaging in general and sexually aggressive behavior when drinking (e.g., “After a few drinks of alcohol, I would be more likely to act in an aggressive manner [e.g., become angry or engage in verbal/physical fights]”). Five point response scales (1=disagree; 5=agree) were used.

Results

Eighty-seven percent of the sample ($n = 2,570$, 61% female) reported perpetrating general aggression (i.e., verbal or physical aggression) during the last three months of their senior year of high school, and 165 participants (5.6%; 52% female) indicated perpetrating sexual aggression (i.e., unwanted sexual advances or forced intercourse) during the same time period. A majority of the participants who perpetrated sexual aggression also reported perpetrating general aggression ($n = 159$; 53% female).

Descriptive statistics for the frequency of general and sexual aggression, alcohol-related expectancies, typical alcohol consumption, aggression-specific alcohol use, and perceived negative consequences are presented in Table 1. Men and women did not differ in their frequency of reported general or sexual aggression, however, women reported more frequent Perceived Social and Emotional consequences of general (but not sexual) aggression than men. Alcohol consumption co-occurred more frequently with sexual aggression (28%) than general aggression (9%). Additionally, Perceived Social and Emotional consequences were reported by a larger percentage of people who engaged in general aggression (79%) than by those who engaged in sexual aggression (59%).

General Aggression

For those individuals who reported perpetrating general aggression, hierarchical multiple regression analyses were conducted to determine whether perceived negative consequences were associated with aggression-specific alcohol use and with alcohol-related aggression expectancies. With frequency of Perceived Social and Emotional consequences as the dependent variable, sex was statistically controlled by entering it in Step 1, along with typical alcohol use quantity and frequency, as well as average frequency of general aggression. The average frequency of general aggression was included in the analysis to control for the opportunity with which consequences of aggression could be experienced. Including typical alcohol use quantity and frequency in Step 1 provides a control of alcohol's global effects so that aggression-specific alcohol use represents the alcohol consumed on average during aggression above and beyond the participant's typical consumption. Aggression-specific alcohol use was added in Step 2 of the equation. To distinguish effects between varying levels of alcohol use, three dummy coded variables were created (light [1–2 drinks], moderate [3–5 drinks], and heavy [6 or more drinks]) with ‘no alcohol’ as the reference category. Finally, in Step 3 of the equation, alcohol-related aggression expectancies were added.²

As shown in Table 2, Step 1 was significant, $F(4, 2432) = 62.50$, $p < .001$, with significant contributions for sex, typical alcohol quantity, and average frequency of general aggression. Therefore, individuals perceived more frequent social and emotional consequences of

general aggression if they were female, were lighter drinkers, and had a greater frequency of perpetrating general aggression. The addition of the aggression-specific alcohol use variables was significant in Step 2, $F(7, 2429) = 40.04, p < .001$, although only heavy drinking, compared to no alcohol, was significant. Step 3 was also significant, $F(8, 2428) = 39.53, p < .001$, for alcohol-related aggression expectancies. Thus, heavy drinking (i.e., consuming 6 or more drinks) associated with general aggression, and expecting alcohol use to increase aggressive behavior, were related to an increase in Perceived Social and Emotional consequences.

Sexual Aggression

Hierarchical multiple regression analyses similar to those used for general aggression were conducted for the 165 individuals who reported perpetrating sexual aggression. Analyses tested whether perceived negative consequences were associated with consumption of alcohol in conjunction with sexual aggression and with alcohol-related sexual aggression expectancies, beyond the effect of the average frequency of perpetrating sexual aggression.

With frequency of Perceived Social and Emotional consequences of sexual aggression as the dependent variable, Step 1 was significant, $F(4, 140) = 2.54, p < .05$, with a significant contribution for typical alcohol use frequency and the average frequency of sexual aggression (see Table 3). Therefore, frequent drinking and infrequent perpetration of sexual aggression were associated with more frequent Perceived Social and Emotional consequences. The addition of all three aggression-specific alcohol use variables in Step 2 were significant, $F(7, 137) = 3.81, p < .001$. After the addition of alcohol-related sexual aggression expectancies in Step 3, the model remained significant, $F(8, 136) = 3.32, p < .01$, although expectancies were not. Therefore, consuming any amount of alcohol in conjunction with acting sexually aggressive was related to an increase in Perceived Social and Emotional consequences, whereas expecting alcohol to increase sexual aggression was not.

Discussion

We were interested in assessing potential differences in the experience of negative consequences when alcohol was or was not involved with aggression, and whether this relation varied based on the type of aggression. It was hypothesized that consuming alcohol at the time of the aggressive behaviors would be associated with fewer perceived consequences. Contrary to this hypothesis, however, aggression-specific alcohol use was associated with an increase in perceived negative consequences for both general and sexual aggression. This is in contrast to the notion that alcohol serves as an excuse for aggressive behavior. Rather, findings suggest that individuals who perpetrated aggression under the influence of alcohol may perceive more negative consequences of their behaviors than those who aggress when sober. Although some individuals may still “blame the booze” (Critchlow, 1983) for their behavior, they may also recognize negative consequences resulting from their aggression.

It was also hypothesized that alcohol-related aggression expectancies would be associated with fewer perceived negative consequences for both general and sexual aggression. Expectancies, however, were significantly associated with perceived negative consequences of general aggression, and were not related to perceived consequences of sexual aggression. Thus, among individuals who perpetrated general aggression, expectancies were positively associated with perceived social and emotional consequences. These results are surprising

²The interactions between the event-specific alcohol use variables and alcohol-related aggression expectancies were entered in Step 4 of each equation for general and sexual aggression. None of the interactions were significant for Social and Emotional consequences and did not alter any of the other findings. Therefore, the interactions were omitted from the final analyses.

given that individuals who hold alcohol-related aggression expectancies anticipate positive outcomes resulting from their aggressive behavior. It may be that individuals who expect positive outcomes are more sensitive to even neutral consequences, thereby perceiving more outcomes as negative. These perceived negative consequences may influence future aggressive behavior by failing to reinforce the aggression.

Additional findings for general aggression suggest that lighter drinking young adults more frequently perceived negative consequences resulting from their aggression. Moreover, perpetrating general aggression after drinking heavily (i.e., consuming six or more drinks) was positively related to perceived negative consequences. Although these findings appear contradictory, there may be differences in the perception of negative consequences among individuals who do not typically drink heavily and those that do, such that lighter drinking individuals may perceive even minor outcomes resulting from their aggressive behavior as negative. In addition, aggression has been shown to be more severe on days when alcohol was consumed than when sober (Chermack & Blow, 2002; Testa, Quigley, & Leonard, 2003), which may also lead to more severe consequences. Thus, as greater amounts of alcohol are consumed and consequences become more severe, the likelihood that these consequences are perceived as negative should increase. The severity of aggression and related consequences were not assessed in the current research, however, future studies should examine this potential relation.

Less frequent perpetration of sexual aggression was associated with an increase in the perceived social and emotional consequences. This suggests that a deviation from typical behavior is related to greater negative consequences. Moreover, a greater frequency of alcohol consumption overall was associated with an increase in the perceived social and emotional consequences after perpetrating sexual aggression, whereas typical alcohol quantity was not related to perceived consequences. Individuals who consume alcohol frequently are likely to be in an environment where sexual aggression is more likely to occur (large parties where alcohol is served; Testa, 2002). Individuals who knowingly put themselves in these situations may experience a range of negative emotional (e.g., self-blame) and social consequences (e.g., accusations from friends) following the perpetration of sexual aggression.

Few sex differences emerged, with men holding stronger alcohol-related aggression expectancies for both general and sexual aggression than women. Despite stronger expectancies, however, men did not report a greater frequency of general or sexual aggression perpetration. This finding is consistent with studies that have shown that compared to men, women engage in verbal and physical aggression towards their romantic partner (Arias, Samios, & O'Leary, 1987; Magdol et al., 1997), and perpetrate sexual coercion (Larimer, Lydum, Anderson, & Turner, 1999), at rates similar to men. Despite these similar rates of perpetration, women perceived greater amounts of social and emotional consequences in response to general aggression than men. Because of women's greater sensitivity to social concerns than men (Briton & Hall, 1995), the consequences women perceived as negative are likely to be less severe than those reported by men. Although this gender difference was not found for sexual aggression, an examination of unwanted sexual advances and forced intercourse separately could yield different results. Sample sizes precluded such analyses in the current study.

Additional limitations should also be considered when interpreting findings from this study. Although an examination of the situational effects of alcohol was provided, it was not event-based in that participants reported their alcohol use and consequences for any aggressive events that had occurred during the assessment period. Also, due to the wording of the general aggression items, it was not possible to distinguish verbal from physical general

aggression, and the extent to which negative consequences are experienced may differ for these forms of aggression. Future studies should consider verbal and physical general aggression separately. Additionally, the frequency of occurrence of social and emotional consequences were low for both general and sexual aggression, suggesting that few negative consequences were experienced as a result of perpetrating these behaviors. Although perpetrators may have under-reported the extent to which they experienced negative consequences, web-based assessments have yielded an increase in responding to sensitive topics compared to other modes of data collection (Parks, Pardi, & Bradizza, 2006). Alternatively, these low rates may be an artifact of the way in which these consequences were assessed. That is, we relied on participant's self reports of their perceived negative consequences. There is likely to be substantial individual variability in the extent to which negative outcomes are perceived and thus reported, and we were unable to account for this variability in the current analyses. In addition, this study only included college freshmen, thereby limiting the extent to which the results can be generalized to non-college populations. The demographics of the current sample had greater ethnic and racial diversity than most college samples, however, lending increased confidence that the current findings are relevant to ethnically and racially diverse groups.

Alcohol-related aggression expectancies were associated with perceived negative consequences of general aggression, but it should be noted that these assessments were cross-sectional. It is therefore possible that the alcohol-related aggression expectancies were formed after experiencing the negative consequences of aggression. Expectancies in late adolescents, however, may be relatively stable given that children possess them as young as 6 to 14 years of age (El-Sheikh & Elmore-Staton, 2007). This potentially long-standing set of alcohol-related aggression expectancies may therefore be resistant to change based on the most recent aggressive incidents. Furthermore, if the alcohol-related aggression expectancies assessed were formed after experiencing negative consequences of aggression, then the expectancies should be significantly associated with negative consequences. This was not the case for sexual aggression, suggesting that these expectancies were not simply a reaction to the negative consequences of sexual aggression experienced during the time frame of the current assessment. Rather, these expectancies were likely formed through earlier experiences. Future studies should employ a longitudinal examination of alcohol, aggression, expectancies, and negative consequences to assess for possible reactivity effects of expectancies and changes over time.

The present findings suggest several implications for intervention and prevention efforts for perpetrators of aggression. Intervention efforts aimed at reducing interpersonal aggression will be more successful if they are able to break the cycle of continued aggression, which means the perpetrators must be a primary target. Consistent with basic principles of conditioning and social learning theory, interventions that help perpetrators identify negative consequences of their aggressive behaviors such as regret and lost friendships, may facilitate behavior changes in order to decrease the occurrence of emotional distress. Potential perpetrators might also be identified through an assessment of their alcohol and aggression expectancies, with subsequent prevention efforts focused on education about the likely increase in negative consequences when alcohol is associated with aggression. Effective coping strategies for managing anger (especially under the influence of alcohol) may not only prevent aggressive behaviors from occurring, but also decrease the possibility of harmful consequences for both the perpetrator and the victim. Prevention efforts should also target individuals in early adolescence, which may provide an opportunity to intervene before alcohol-related aggression expectancies are fully developed. Programs, therefore, should be implemented in schools and community settings that will likely reach these emerging adults.

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Biographies

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Table 1

Average general and sexual aggression means (and standard deviations) and sex differences for average frequency of aggression, alcohol-related aggression expectancies, typical average weekly drinking, event-specific alcohol use and perceived negative consequences.

	General Aggression		Sexual Aggression		<i>t</i>
	Men (<i>n</i> = 1,000)	Women (<i>n</i> = 1,570)	Men (<i>n</i> = 80)	Women (<i>n</i> = 85)	
Average frequency of aggression	2.14 (1.22)	2.19 (1.30)	1.09 (0.82)	1.02 (0.65)	-0.66
Alcohol-related aggression expectancies	2.40 (1.30)	2.08 (1.25)	3.18 (1.39)	2.71 (1.45)	-5.96***
Typical alcohol quantity	1.64 (2.62)	1.23 (1.92)	2.78 (3.16)	2.40 (2.44)	-4.26***
Typical alcohol frequency	0.90 (1.37)	0.81 (1.18)	1.59 (1.74)	1.62 (1.62)	-1.75
Aggression-specific alcohol use	0.19 (0.64)	0.15 (0.56)	0.63 (1.09)	0.68 (1.08)	-1.31
Perceived Social and Emotional Consequences	1.21 (1.05)	1.48 (1.00)	1.18 (1.09)	1.06 (1.18)	6.61***

Note. Average aggression (0=never, 1=once, 2=twice, 3=3–5 times); Alcohol-related aggression expectancy (1=disagree; 3=neither agree nor disagree; 5=agree); Typical alcohol quantity (range 0–99); Typical alcohol frequency (range 0–7); Aggression-specific alcohol use (0= no alcohol; 1= 1–2 drinks; 2=3–5 drinks; 3=6 or more drinks); Perceived Social and Emotional consequences (range 0–4).

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 2

Hierarchical multiple regression analyses predicting perceived consequences of general aggression from aggression-specific alcohol use, and alcohol-related aggression expectancies.

Step and predictor	Perceived Social and Emotional Consequences			
	β	t	R^2	ΔR^2
Step 1			.09	.09 ***
Sex	-.12	-6.12 ***		
Typical alcohol quantity	-.08	-2.87 **		
Typical alcohol frequency	-.03	-0.99		
Average frequency of general aggression	.26	13.62 ***		
Step 2			.10	.01 ***
Aggression-specific alcohol use				
Light	.03	1.54		
Moderate	.02	1.00		
Heavy	.10	5.14 ***		
Step 3			.12	.02 ***
Alcohol expectancies	.11	5.69 ***		

Note. Data are presented as standardized betas. The reference category for which the aggression-specific alcohol use variables were compared was 'no alcohol'; Light = 1–2 drinks; Moderate = 3–5 drinks; Heavy = 6 or more drinks.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3

Hierarchical multiple regression analyses predicting perceived consequences of sexual aggression from aggression-specific alcohol use, and alcohol-related aggression expectancies.

Step and predictor	Perceived Social and Emotional Consequences			
	β	t	R^2	ΔR^2
Step 1			.07	.07 *
Sex	.76	0.93		
Typical alcohol quantity	-.06	-0.64		
Typical alcohol frequency	.28	2.77 **		
Average frequency of sexual aggression	-.19	-2.12 *		
Step 2			.16	.09 **
Aggression-specific alcohol use				
Light	.19	2.25 *		
Moderate	.23	2.62 **		
Heavy	.31	3.32 ***		
Step 3			.16	.00 **
Alcohol expectancies	.02	0.23		

Note. Data are presented as standardized betas. The reference category for which the aggression-specific alcohol use variables were compared was 'no alcohol'; Light = 1–2 drinks; Moderate = 3–5 drinks; Heavy = 6 or more drinks.

* $p < .05$.

** $p < .01$.

*** $p < .001$.