Alcohol-induced risky sexual behavior among socially anxious drinkers

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Abstract

Heavy college drinking is associated with risky sexual behavior. It is therefore important to identify groups that are especially vulnerable to alcohol-influenced sexual risk (e.g., unplanned/unexpected sex). Undergraduates with elevated social anxiety represent one such vulnerable group given that social anxiety is associated with fear of intimacy and heavier drinking in intimate situations and situations with expected negative affect. Drinking to cope with negative affect induced by fear of intimacy might render socially anxious undergraduates vulnerable to risky sexual behavior, yet no known studies have examined this relationship. The current study tested whether social anxiety was related to alcohol-related sexual behaviors among current (past-month) drinking undergraduates (88.1% female; 77.6% non-Hispanic Caucasian) with higher (i.e., clinically elevated) social anxiety (HSA; *n*=40) or lower (more normative) social anxiety (LSA; *n*=94). Coping motives were examined as a moderator of the social anxiety-risky sexual behavior relationship. Gender was a covariate. HSA students reported more frequent alcohol-influenced sexual risk including regretted sexual situations, unprotected sex, sex with unwanted partners, unwanted sex, pressured/forced to have sex, and pressured someone to have sex. Coping motives significantly interacted with social anxiety group in the prediction of risky sexual behaviors except regretted sexual situations, such that HSA students with greater coping motives experienced more frequent sexual risk when drinking. Findings indicate that HSA students may be particularly vulnerable to risky sexual behaviors and suggest that coping motivated drinking may be an important target for therapeutic interventions geared toward reducing risky sexual behaviors among this high-risk population.

Keywords: risky sexual behavior; social anxiety; drinking problems; alcohol; college drinking

Alcohol-induced risky sexual behavior among socially anxious drinkers

Alcohol use and risky sexual behavior (e.g., unplanned/unexpected sex, decreased safe sex practices) are strongly associated among college students (J. L. Brown & Vanable, 2007; Cooper, 2002; Kaly, Heesacker, & Frost, 2002; Scott-Sheldon, Carey, & Carey, 2010). It is therefore important to identify groups that are especially vulnerable to alcohol-influenced risky sexual behavior and related consequences. Socially anxious undergraduate drinkers represent one such vulnerable group given that social anxiety is associated with greater fear of intimacy (Montesi, Conner, Gordon, Fauber, Kim et al., 2013) and more alcohol use in intimate situations (Terlecki, Ecker, & Buckner, 2014). In fact, social anxiety is related to unprotected sex among gay youth (Hart & Heimberg, 2005) and is associated with more frequent coerced sexual intercourse and less sexual refusal assertiveness among college women (Schry & White, 2013).

Following the stress-response dampening hypothesis (Levenson, Sher, Grossman, Newman, & Newlin, 1980), the stress response produces undesirable physiological reactions (e.g., sweating, increased heart rate) and escape or avoidance behaviors, which can be attenuated by alcohol consumption and negatively reinforce alcohol use. In line with this hypothesis, socially anxious undergraduates may drink to manage elevated state negative affectivity (e.g., anxiety) during or prior to intimate or sexual situations. State negative affectivity in such situations may be especially elevated amongst those with higher social anxiety given that this population experiences greater sexual dysfunction (e.g., premature ejaculation; Figueira, Possidente, Marques, & Hayes, 2001; Fontenelle, de Souza, de Menezes, Mendlowicz, Miotto et al., 2007), lower sexual satisfaction (Bodinger, Hermesh, Aizenberg, Valevski, Marom et al., 2002; Kashdan, Adams, Savostyanova, Ferssizidis, McKnight et al., 2011), and greater difficulty with sexual communication (Montesi et al., 2013). Difficulty with sexual communication (e.g., lower sexual assertiveness; Montesi et al., 2013) may be further impaired as a result of coping-motivated drinking, which may result in engaging in risky sexual behaviors (e.g., not asking partners to engage in protected sex) or failing to refuse advances from an unwanted partner.

Thus, socially anxious persons may be vulnerable to drinking to cope with negative state affectivity associated with sexual performance anxiety or fears of intimacy, intimate partner rejection, or negative evaluation regarding sexual dysfunction. Reliance on alcohol to cope with negative affectivity might render socially anxious undergraduates vulnerable to risky sexual behavior and related consequences. Yet, the role of drinking in the relationship between alcohol-induced risky sexual behavior and consequences and social anxiety among undergraduates remains largely unstudied.

The literature suggests that social anxiety is related to drinking in situations involving negative affect (Buckner, Eggleston, & Schmidt, 2006; Terlecki & Buckner, 2015) and to more coping-motivated drinking (Blumenthal, Leen-Feldner, Frala, Badour, & Ham, 2010; Buckner & Shah, 2015; Ham, Bonin, & Hope, 2007; Lewis, Hove, Whiteside, Lee, Kirkeby et al., 2008; Norberg, Norton, Olivier, & Zvolensky, 2010; Stewart, Morris, Mellings, & Komar, 2006; Terlecki & Buckner, 2015). Furthermore, drinking to cope with negative affectivity is thought to reinforce regular use of alcohol (Sher & Levenson, 1982), resulting in elevated blood alcohol levels and alcohol tolerance (Weiss & Porrino, 2002), which are symptoms of alcohol use disorder (American Psychiatric Association [APA], 2013). In fact, high social anxiety (HSA; i.e., clinically elevated social anxiety) more than quadruples the risk of developing an alcohol use disorder (Buckner, Schmidt, Lang, Small, Schlauch et al., 2008; Kushner, Abrams, & Borchardt, 2000) and coping motives mediate the relation between social anxiety and alcohol-related problems (Buckner & Shah, 2015; Lewis et al., 2008).

The current study is the first known investigation of the role of social anxiety in alcohol-induced risky sexual behavior and consequences. We sought to extend the literature in several ways. First, we tested whether HSA students would report more frequent alcohol-induced risky sexual behavior than those with lower social anxiety (LSA; i.e., more normative levels of social anxiety) among current (past-month) drinking undergraduates. Second, given the relationship between social anxiety and coping motives (e.g., Ham et al., 2007; Terlecki & Buckner, 2015),

we tested whether coping motives moderated the relationship between social anxiety and alcohol-influenced risky sexual behaviors and consequences, such that HSA individuals who reported greater coping motivated drinking would report the greatest amount of alcohol-induced risky sexual behaviors and consequences.

Method

Participants and Procedures

The sample consisted of undergraduates recruited through the Department of Psychology research participant pool at a large public university in the southern United States. Of the 204 participants who began the survey, 16 had incomplete responses and were excluded. Of the remaining 188, 40 scored above the clinical cut score (34; Heimberg, Mueller, Holt, Hope, & Leibowitz, 1992) on the *Social Interaction Anxiety Scale* (SIAS; Mattick & Clarke, 1998) and comprised the HSA group. Individuals scoring below the Heimberg et al. cut-off (n = 94) comprised the LSA group. This cut-off score has been found to be a conservative method for identifying social anxiety disorder among undergraduates (Rodebaugh, Woods, Heimberg, Liebowitz, & Schneier, 2006). This strategy facilitated the comparison of those with clinically elevated social anxiety with students with more normative social anxiety levels. Importantly, the mean SIAS score for the HSA group (Table 1) was consistent with the mean found in clinical samples of untreated patients with social anxiety disorder (Weeks, Heimberg, Fresco, Hart, Turk et al., 2005). The final sample (N = 134; 88.1% female) reported a mean age of 19.96 (SD = 1.62) years. The racial/ethnic composition was 8.2% non-Hispanic/Latino African American/Black, 0.7% Hispanic/Latino African American/Black, 6.0% Asian/Asian American, 77.6% non-Hispanic/Latino Caucasian, 3.0% Hispanic/Latino Caucasian, 0.7% native Hawaiian/Pacific Islander, 2.2% multiracial, and 1.5% "other." See Table 1 for demographic information by social anxiety group.

Participants enrolled in the study through the university's secure online study participation system from January to February 2015, and data were collected using

www.qualtrics.com. Scores on computerized and paper-and-pencil versions of self-report measures are highly correlated (Gwaltney, Shields, & Shiffman, 2008). Participants received psychology research credit upon completion of this survey. All study procedures received Institutional Review Board approval and informed consent was obtained prior to data collection.

Measures

Social anxiety. The *Social Interaction Anxiety Scale* (SIAS; Mattick & Clarke, 1998) is comprised of 20 items scored from 0 (*not at all characteristic or true of me*) to 4 (*extremely characteristic or true of me*). This widely used measure has demonstrated good internal consistency in both community and patient samples and has been shown to be specific to social anxiety (E. J. Brown, Turovsky, Heimberg, Juster, Brown et al., 1997) relative to other forms of anxiety (i.e., trait anxiety). Total scores range from 0 to 80. Prior research indicates that a score of one standard deviation above the mean of a community sample on the SIAS (M=19.9, SD=14.2) correctly classified 82% of patients with social anxiety disorder (Heimberg et al., 1992). This cut-score has been found to be a conservative way to identify social anxiety disorder among undergraduates (Mattick & Clarke, 1998; Osman, Gutierrez, Barrios, Kopper, & Chiros, 1998). Internal consistency of the SIAS was excellent in the current sample (α = .92).

Alcohol-induced risky sexual behaviors. These behaviors were assessed via a modified version of the *Young Adult Alcohol Problems Screening Test* (YAAPST; Hurlbut & Sher, 1992) containing six additional alcohol-induced sexual consequence items[1] (e.g., regretted sexual situations, failure to use safe sex, unwanted sex, unwanted partner, being pressured to have sex, pressuring or forcing another to have sex; Larimer, Lydum, Anderson, & Turner, 1999; Lewis, Neighbors, Geisner, Lee, Kilmer et al., 2010; Wood, Read, Palfai, & Stevenson, 2001). In the current study, only the six alcohol-induced risky sexual behavior items were employed. Participants rated the frequency of occurrence for each consequence during the past year on a 10-point scale ranging from 1 (*No, never*) to 10 (*Yes, 40 or more times in the past year*). The YAAPST has demonstrated good internal consistency and test-retest reliability among college

student samples (Hurlbut & Sher, 1992). Internal reliability for items used in the current sample was good (α = .86).

Coping Motives. Coping motives were assessed with the coping motives subscale of the *Drinking Motives Questionnaire – Revised* (Cooper, 1994). The coping motives scale consists of 5 items (e.g., drinking to forget worries; drinking to help with depression or anxiety; drinking to alleviate bad mood; drinking to feel more self-confident; drinking to forget problems) rated from 1 (*Never/almost never*) to 5 (*Almost always/always*). Items from this subscale demonstrated good internal consistency in the present sample (α = .84).

Alcohol consumption. The *Quantity/Frequency Index* (QFI; Dimeff, Baer, Kivlahan, & Marlatt, 1999) was used to assess past month drinking behavior. Average alcohol consumption on typical occasions (typical drinking) and heavy-drinking occasions (peak drinking) were assessed using a scale from 0 (*0 drinks*) to 25 (*25 or more drinks*). Drinking frequency was assessed with a scale ranging from 0 (*I did not drink at all*) to 8 (*daily*).

Results

Baseline demographic, alcohol-related, and anxiety variables by social anxiety group are presented in Table 1. No baseline differences existed between social anxiety groups on demographic variables except that the LSA group had significantly more women. Gender was therefore included as a covariate in all analyses.

An analysis of covariance (ANCOVA) was conducted to test whether the HSA group reported more coping-motivated alcohol use with gender as a covariate. As evidenced in Table 1, the HSA group reported significantly higher scores on coping motives[1].

Social anxiety and alcohol-induced risky sexual behavior

A MANCOVA was conducted to test whether the HSA group reported more frequent alcohol-induced risky sexual behaviors and consequences relative to the LSA group using gender as a covariate. The six *YAAPST* risky sex items served as dependent variables. The overall model was significant, $F(6, 126) = 3.31$, $p = .005$. Consistent with prediction, the HSA

group reported more frequent alcohol-influenced sexual risk behaviors and consequences: regretted sexual situations, failure to use protection, sex with unwanted partners, unwanted sex, pressured or forced to have sex, and pressured another for sex (see Table 1).

Moderation Analyses

We tested whether coping motives moderated the relation between social anxiety group and alcohol-induced risky sexual behaviors and consequenes[2]. A series of individual hierarchical regressions were conducted with gender as a covariate due to significant group differences (see Table 1). Standardized scores of individual alcohol-influenced sexual risk behaviors served as dependent variables (regretted sexual situations, unprotected sex, unwanted sex, unwanted partner, pressured sex, pressurizing another for sex). In each model, predictor variables were entered into two steps: Step 1, gender, the standardized coping motives score, and social anxiety group; and Step 2, the social anxiety group X standardized coping motives interaction. As predicted, coping motives significantly interacted with social anxiety group in the prediction of all alcohol-influenced risky sexual behaviors and consequences, except regretted sexual situations (Table 2). The regression lines for each regression are presented in Figure 1 using 1 *SD* above and below the standardized coping score (Aiken & West, 1991; Cohen, Cohen, West, & Aiken, 2003).

The nature of the significant interactions was probed by testing whether the slopes differed from zero (Aiken & West, 1991; Cohen et al., 2003). Results of the simple slopes analysis are presented in Table 3. Among HSA students, greater coping motives significantly predicted more frequent alcohol-influenced risky sexual behaviors and consequences. These relationships were not observed among the LSA group.

Discussion

The present study is the first known test of the impact of social anxiety on alcohol-induced risky sexual behavior and consequences, and it contributes to our understanding of alcohol-induced risky sexual behavior in several ways. First, data add to prior work (Schry &

White, 2013) indicating that HSA undergraduates may experience significantly more frequent alcohol-induced risky sexual behaviors and consequences than LSA undergraduates. Second, the current study adds to a growing corpus of work finding social anxiety to be more related to coping-motivated drinking (Buckner et al., 2006; Ham et al., 2007; Ham, Zamboanga, Bacon, & Garcia, 2009; Lewis et al., 2008; Norberg et al., 2010; Stewart et al., 2006; Terlecki & Buckner, 2015). The current study extends this knowledge base by showing that coping-motivated drinking is related to more frequent alcohol-influenced risky sexual behaviors and consequences among HSA persons. Specifically, HSA undergraduates who drink to cope with negative affect experience more frequent alcohol-induced risky sexual behaviors and consequences, including regretted sexual experiences, unprotected sex, unwanted sex, sex with unwanted partners, pressured sex, and pressured another for sex. This finding offers some insight into the social anxiety and alcohol problem relation (for review see, Buckner, Heimberg, Ecker, & Vinci, 2013). Specifically, greater coping motivated drinking in sexual/intimate situations (Terlecki et al., 2014) may render HSA undergraduates vulnerable to alcohol impairment, including more frequent risky sexual behavior and reduce related negative consequences.

We offer several possible explanations for the relationship between coping-motivated drinking, social anxiety, and alcohol-induced risky sexual behavior. First, students high in social anxiety may drink to cope with sexual performance anxiety, fear of intimacy, physiological over-arousal that may lead to sexual dysfunction, or fear of negative evaluation resulting from sexual dysfunction (e.g., premature ejaculation; Figueira et al., 2001; Fontenelle et al., 2007). Coping motivated drinking could also facilitate engagement in anxiety provoking intimate behaviors that would otherwise be avoided, which could lead to more frequent regretted and unwanted sexual experiences. Excessive drinking in social settings (e.g., at a bar or party) may increase risky sexual behavior risk among socially anxious undergraduates, given that heavy alcohol use is associated with more frequent unprotected sex among undergraduates (Scott-Sheldon et al., 2010). Therefore, HSA students who drink heavily to cope with negative state

affect may be especially like to engage in subsequent alcohol-induced risky sexual behaviors and experience greater related consequences.

Second, more coping motivated drinking may render HSA individuals especially vulnerable to alcohol-related cognitive impairment (e.g., decreased perception of sexual risk or inhibition) and behavioral consequences (e.g., risky or unplanned sex; unwanted sex) associated with heavy drinking. Heavy drinking is generally associated with greater unprotected sex among undergraduates (Cooper, 2002; Scott-Sheldon et al., 2010). Heavy drinking may decrease self-control for safe sex practices or reduce the effectiveness of safe sex assertiveness among undergraduates in general (Scott-Sheldon et al., 2010). In fact, elevated social anxiety (regardless of alcohol use) is associated with lack of assertiveness in adult personal relationships (Grant, Gayle Beck, Farrow, & Davila, 2007), poor sexual communication (Montesi et al., 2013), and lower sexual assertiveness among female undergraduates (Schry & White, 2013). Sexual assertiveness and sexual communication among HSA persons may become considerably less effective following coping-motivated drinking, resulting in even greater difficulty requesting safe sex with a sexual partner or refusing to have sex with a partner who is unwilling to practice safe sex.

Third, alcohol myopia (Steele & Josephs, 1990), or a narrowing of perceptual and cognitive processes as a result of alcohol consumption impairs decision making. Alcohol myopia causes the drinker to pay closer attention to immediate, salient environmental or social cues rather than longer term consequences of risky sexual behavior (e.g., sexual transmitted infection, pregnancy, or unwanted sexual experiences), resulting in lower sexual inhibition and poorer sexual decision making (Cooper, 2002). Alcohol myopia (regardless of social anxiety) has been implicated in the relationship between drinking and negative sexual experiences among female college drinkers (for review see Griffin, Umstattd, & Usdan, 2010) as well as increased male sexual aggression (Davis, 2010; Testa, 2002). Following the cognitive model of social anxiety (Rappee & Heimberg, 1997), socially anxious persons are susceptible to cognitive processing

errors with regard to self-evaluation and social cue interpretation and thus may be especially vulnerable to additional cognitive impairment via alcohol myopia. Thus, coping-motivated drinking amongst HSA persons may lead to greater inaccuracy in the interpretation of situational and social cues (e.g., disapproval of safe sex, disinterest in sex), resulting in less effective resistance or refusal of sexual advances from unwanted partners, or lead to inaccurate interpretations of sexual interest. These misinterpretations may ultimately make socially anxious drinkers vulnerable to experiencing more frequent unwanted sex, coerced sex, or pressuring another for sex (Abbey, 2002). Greater cognitive impairment from coping motivated drinking may also place HSA individuals in a higher risk category for experiencing sexual assault or unwanted sexual encounters. For example, HSA female undergraduates with low sexual assertiveness reported experiencing more frequent coerced sexual victimization (Schry & White, 2013). This finding may also suggest a need for support services for socially anxious students who have unwanted sexual experiences. Future research is needed to explore sexual risk vulnerabilities among individuals with high social anxiety.

Finally, coping motivated drinking may attenuate post-event processing (PEP) of sexual experiences. PEP is a ruminative cognitive process about one's performance in a social interaction (for review, see Brozovich & Heimberg, 2008). PEP has been implicated in cognitive models of social anxiety such that PEP engagement increases social anxiety. PEP engagement following negatively perceived sexual experiences may be one suspected reason why HSA drinkers report more regretful or unwanted sexual experiences because in the absence of alcohol, such experiences would have be avoided. Further, alcohol consumption reduces PEP among socially anxious women (Battista, Pencer, & Stewart, 2014). Therefore, highly socially anxious women who engage in heavy coping motivated drinking may drink heavily to decrease PEP following sexual/intimate experiences in addition to decreasing anxiety during the experience. Additional research is necessary to determine whether alcohol moderates PEP engagement following sexual/intimate situations.

Findings from the current study have important treatment implications. Given that HSA persons experienced more alcohol-induced negative sexual behaviors (including unwanted sexual advances by undesired partners and unwanted sex), HSA students may view sexual behavior and intimacy as negative and anxiety-provoking, which may negatively influence the development of normal, healthy sexual behavior in adult relationships. Given that college is considered by many to be a time of personal development, self-exploration, and sexual experimentation, such negative sexual experiences may interfere with the development of healthy romantic relationships among highly socially anxious students. When considered in light of prior research on social anxiety and sexual behaviors (e.g., Montesi et al., 2013), the current findings suggest that psychosocial treatment addressing fear of intimacy, relationship communication skills, effective sexual assertiveness, scripts for safe sex, and more adaptive techniques to manage negative affect (without alcohol) during anxiety provoking sexual situations may be especially important in early adulthood for those with social anxiety disorder.

Further, brief psychosocial treatments for heavy college drinking often include an intervention component aimed to reduce alcohol-influenced sexual behavior risk (Dimeff et al., 1999). However, shorter, adapted protocols (e.g., Martens, Smith, & Murphy, 2013) or feedback-only protocols (e.g., White, Morgan, Pugh, Celinska, Labouvie et al., 2006) may not include this component, which in light of the current findings is concerning for HSA students. Up to 29% of clients who participated in a brief alcohol intervention reported clinically elevated levels of social anxiety (Terlecki, Buckner, Larimer, & Copeland, 2011). Therefore socially anxious drinkers may remain vulnerable to risky alcohol-influenced sexual behaviors even after receiving such interventions. Therefore, future research is necessary to evaluate whether college alcohol interventions are more effective with socially anxious drinkers when they include an alcohol-influenced sexual behaviors risk component, especially when heavy drinking is thought to occur as a means to cope with symptoms of social anxiety in intimate or sexual situations.

Limitations and Future Directions

The present study should be considered in light of limitations that suggest additional avenues of research in this area. First, the cross-sectional nature of the data limits our ability to draw conclusions regarding causal relations and prospective research will be an important next step. Second, the data were collected via self-report which is subject to measurement error. Third, future work is necessary to determine whether our results generalize to treatment-seeking samples of undergraduate drinkers with diagnosed social anxiety disorder and to non-undergraduate samples. Fourth, although our sample was racially diverse, the small *n*s for non-Caucasian groups make it difficult to test the impact of race on study findings and future work could benefit from testing whether observed effects vary as a function of race. Fifth, our sample was primarily female (88%) and gender differences exist in sexual behaviors among those with elevated social anxiety (Kashdan et al., 2011). Although gender was used as a covariate in all analyses, the generalizability of our results to men should be interpreted with caution given our small *n* for men.

Despite these limitations, findings suggest that HSA undergraduates experience more frequent alcohol-induced risky sexual behaviors. This was especially the case for HSA undergraduates who engage in coping-motivated drinking. Given the high rates of risky sexual behaviors among heavy drinking college students (Cooper, 2002), identification of individuals at particular risk for risky sexual behaviors is an important first step in the development of interventions geared toward decreasing this risk.

Footnotes

[1] Social anxiety was unrelated to conformity motives.

[2] No other drinking motive (social, enhancement, or conformity) moderated the relationship between social anxiety group and risky sexual behavior.

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Table 1

Mean scores, standard deviations, and significance of alcohol use, risky sexual behavior and drinking motives by social anxiety group

	Low Social Anxiety (n = 94)		High Social Anxiety (n = 40)				
Variable	*M*	*SD*	*M*	*SD*	*F or* χ^2	*p*	*d*
Demographics							
Age	20.52	1.93	20.55	1.83	0.01	.936	.02
Gender (% female)	92.6		77.5		6.04	.018	
Race (% Caucasian)	79.8		82.5		1.08	.956	
Ethnicity (% non-Hispanic)	94.7		95.0		0.01	.652	
Alcohol use							
Typical drinking*	4.34	3.30	5.62	3.54	3.11	.080	.37
Peak drinking*	4.35	2.61	6.00	3.58	6.86	.010	.53
Drinking frequency*	3.13	1.57	3.40	1.60	0.69	.406	.17
YAAPST risky sex items							
Regretted sexual situations*	1.67	1.39	2.45	1.65	7.03	.009	.51
Failure to use safe sex*	1.33	1.28	2.28	2.05	8.38	.004	.56
Unwanted sex*	1.20	0.73	2.18	1.95	15.44	<.001	.67
Unwanted partner*	1.29	0.88	2.05	1.55	8.86	.003	.60
Had pressured sex*	1.06	0.29	1.73	1.32	17.91	<.001	.70
Pressured another for sex*	1.03	0.18	1.35	1.00	6.58	.011	.45
Coping Motives*	8.85	3.55	10.90	3.61	6.20	.014	.57

Note. *YAAPST = Brief Young Adult Alcohol Problem Screening Test. d* = Cohen's *d.*

* Analysis included gender as a covariate.

Table 2

Regression results for alcohol-influenced risky sexual behavior as a function of coping motives and social anxiety group

Variable	*B*(*SE*)	*β*	*t*	*p*	F^2
			Dependent variable: Regretted sexual situations		
Step 1 (ΔR^2 = .13)					.15
Gender	-0.07 (0.25)	-.03	-0.30	.767	
Coping motives	0.25 (0.07)	.29	3.29	.001	
Social anxiety group	0.35 (0.18)	.17	1.99	.049	
Step 2 (ΔR^2 = .04)					.20
Group x coping motives	0.41 (0.16)	.26	2.56	.012	
			Dependent variable: Failure to use safe sex		
Step 1 (ΔR^2 = .15)					.18
Gender	0.18 (0.28)	.05	0.62	.540	
Coping motives	0.27 (0.09)	.26	3.04	.003	
Social anxiety group	0.46 (0.20)	.19	2.27	.025	
Step 2 (ΔR^2 = .03)					.22
Group x coping motives	0.42 (0.19)	.23	2.26	.025	
			Dependent variable: Unwanted sex		
Step 1 (ΔR^2 = .15)					.18
Gender	0.13 (0.28)	.04	0.46	.642	
Coping motives	0.17 (0.09)	.16	1.90	.060	
Social anxiety group	0.69 (0.20)	.30	3.48	.001	
Step 2 (ΔR^2 = .03)					
Group x coping motives	0.41 (0.18)	.22	2.18	.028	.22
			Dependent variable: Unwanted partner		
Step 1 (ΔR^2 = .20)					.25
Gender	0.68 (0.27)	.21	2.56	.012	
Coping motives	0.23 (0.08)	.23	2.73	.007	
Social anxiety group	0.45 (0.19)	.20	2.40	.018	
Step 2 (ΔR^2 = .04)					
Group x coping motives	0.42 (0.17)	.24	2.45	.016	.32
			Dependent variable: Pressured sex		
Step 1 (ΔR^2 = .19)					.23
Gender	-0.22 (0.11)	.07	0.92	.362	
Coping motives	0.21 (0.27)	.20	2.43	.016	
Social anxiety group	0.72 (0.19)	.31	3.70	<.001	
Step 2 (ΔR^2 = .12)					
Group x coping motives	0.81 (0.17)	.45	4.83	<.001	.45

	Dependent variable: Pressured another for sex				
Step 1 (ΔR^2 = .10)					.11
Gender	0.40 (0.28)	.13	1.44	.151	
Coping motives	0.11 (0.09)	.12	1.30	.197	
Social anxiety group	0.44 (0.20)	.20	2.24	.027	
Step 2 (ΔR^2 = .07)					.20
Group x coping motives	0.58 (0.18)	.33	3.29	.001	

Note. N = 134. B (SE) = unstandardized beta weight and standard error. β = *standardized beta weight from multiple regression.*

Table 3

Standardized beta and significance results from tests of simple effects of social anxiety group membership by low and high coping drinking motives

Variable	Low coping motives	High coping motives
Regretted sexual situations	-.009	.322*
Unprotected sex	-.028	.326*
Unwanted sex	.079	.425**
Unwanted partner	-.033	.336**
Pressured sex	-.125	.566**
Pressured another for sex	-.125	.390**

Note. Social anxiety group was determined using an empirically informed cut-off.

* $p < .01$; ** $p < .001$.

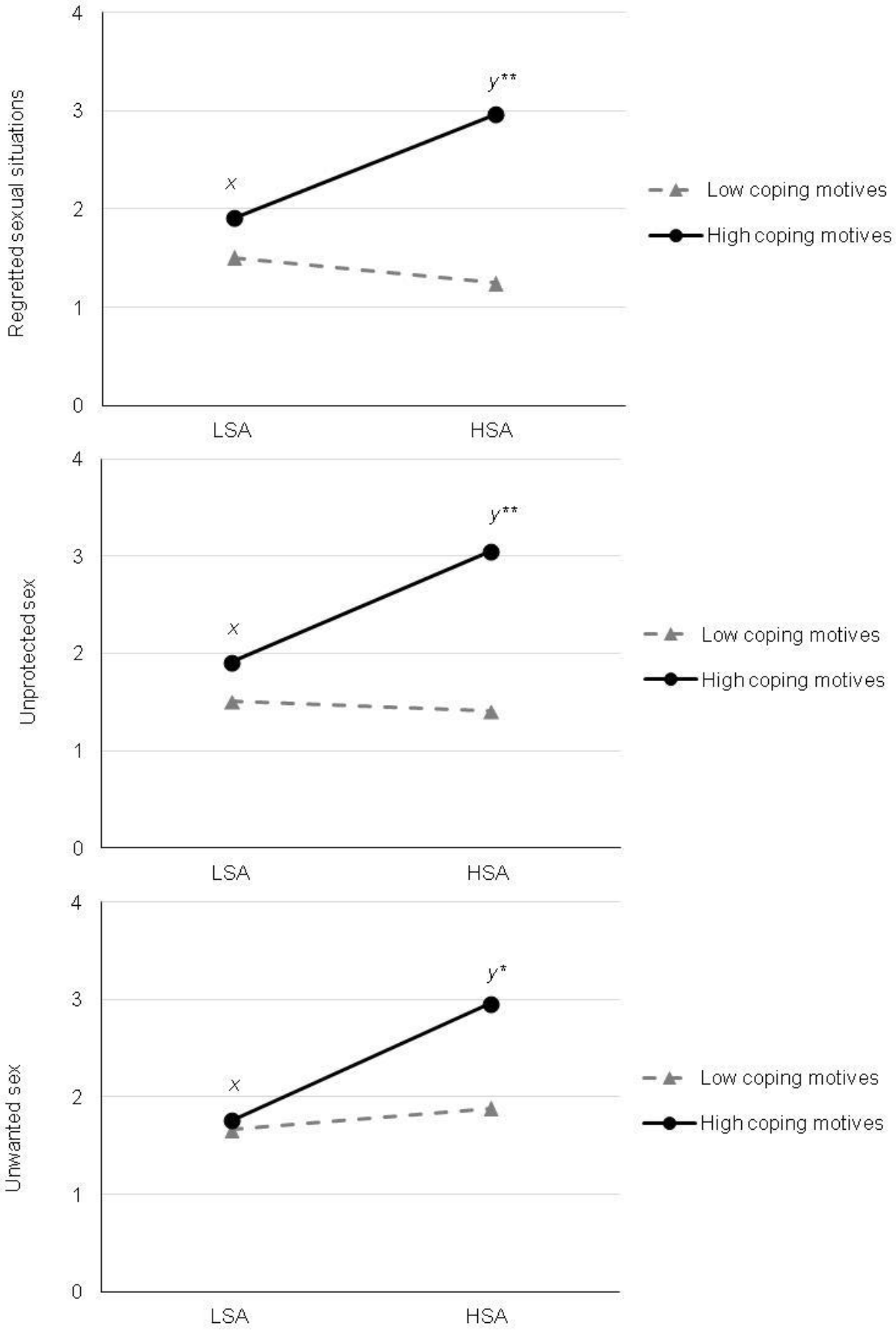
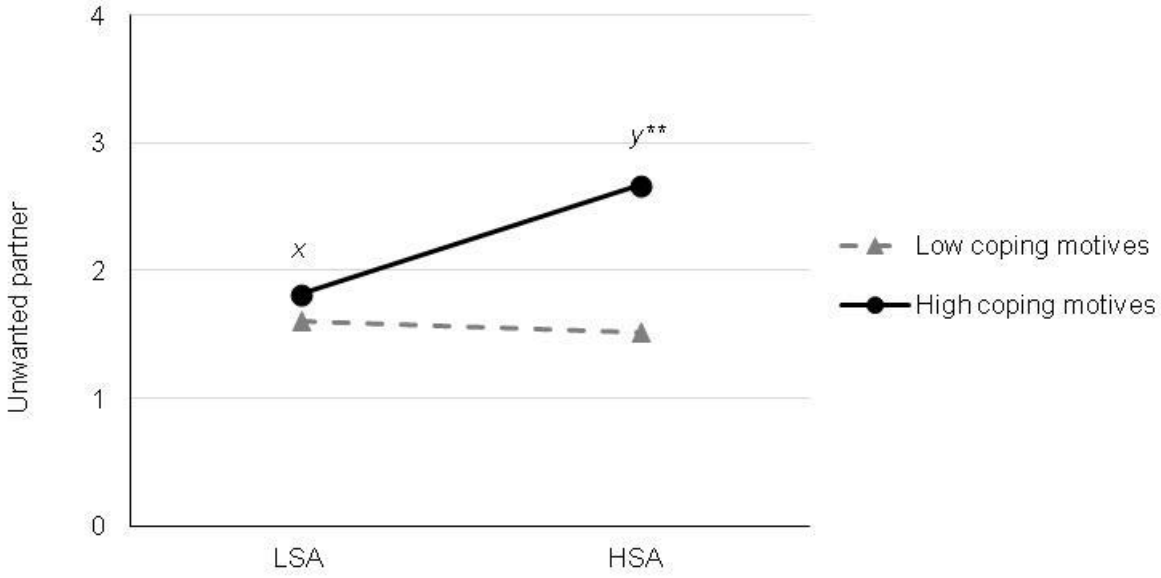

Regretted sexual situations
4
3
2
1
0
y**
x
LSA
HSA
Low coping motives
High coping motives
Unprotected sex
4
3
2
1
0
y**
x
LSA
HSA
Low coping motives
High coping motives
Unwanted sex
4
3
2
1
0
y*
x
LSA
HSA
Low coping motives
High coping motives

Figure 1 cont



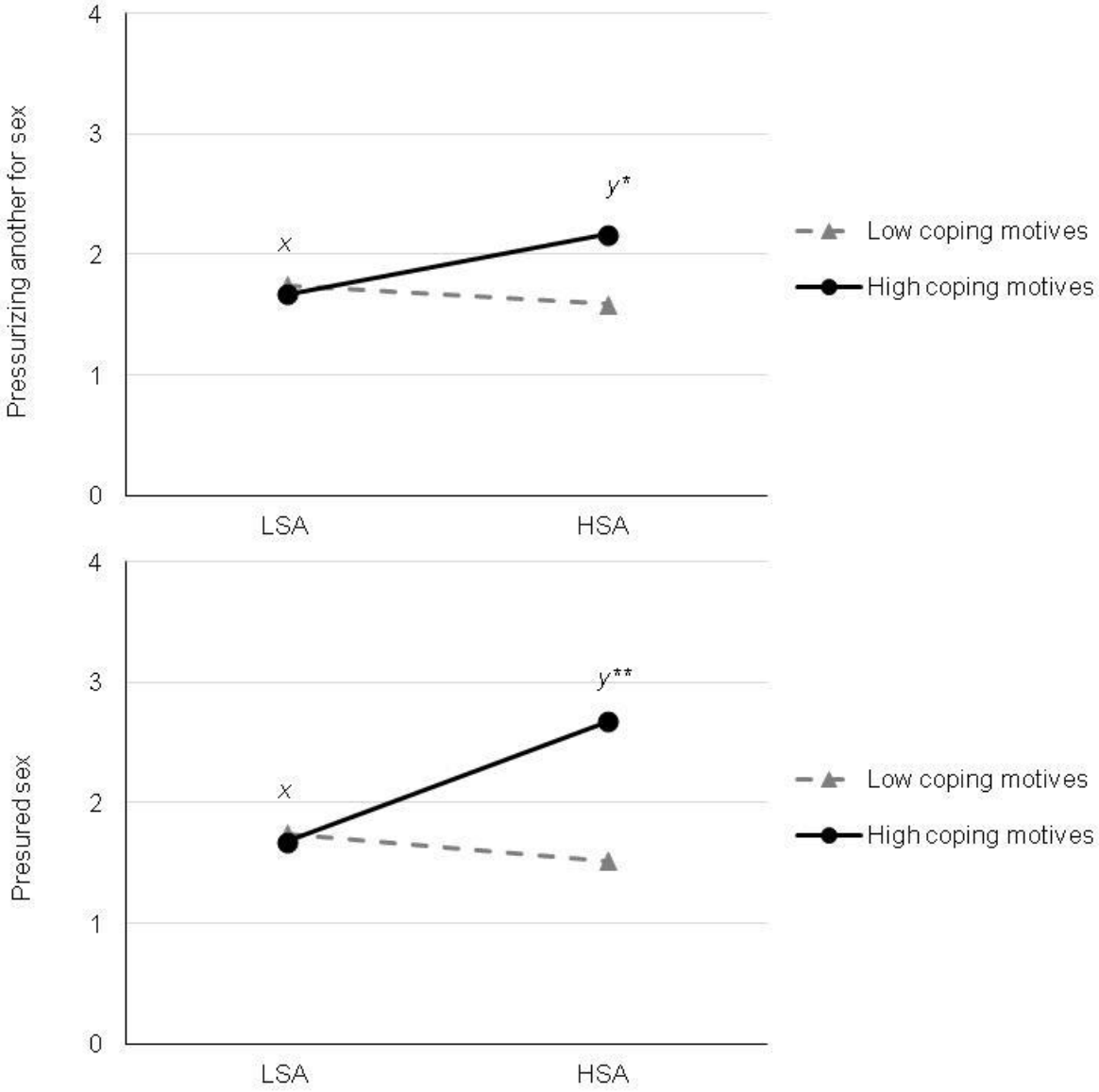


Figure 1. The interaction between social anxiety group and coping motives in the prediction of past month alcohol-influenced risky sexual behavior. Note. * *x* is significantly different from *y*, $p < .01$; ** $p < .001$. LSA = lower (more normative) social anxiety. HSA = higher social anxiety. Social anxiety groups were determined using an empirically derived cut-off score (34; Heimberg et al., 1992).