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Social Anxiety and Motives for Alcohol Use among Adolescents

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Abstract

Social anxiety evidences significant comorbidity with alcohol use disorders and alcohol-related problems. In an effort to better understand this co-occurrence, researchers are beginning to evaluate specific drinking-related factors, including alcohol use motives, among socially anxious individuals. Drawing upon Cooper's (1994) four-factor model of drinking motives (enhancement, social, conformity, coping), a growing body of work suggests that socially anxious individuals may consume alcohol in an effort to cope with their anxious symptoms; however, no study to date has examined these relations among youth. Accordingly, the current study examined alcohol use motives as a function of social anxiety in a community-based sample of 50 adolescents ages 12–17 years ($M_{age} = 16.35$, $SD = 1.10$). As predicted, heightened social anxiety was associated with elevated coping-related drinking motives. Importantly, other alcohol-use motives did not vary as a function of social anxiety. Collectively, these findings uniquely extend research conducted with adults, and suggest socially anxious youth may be motivated to use alcohol to manage their anxious arousal.

Keywords

alcohol use motives; social anxiety; adolescence

Social anxiety (SA) evidences significant comorbidity with alcohol use problems among both adolescents and adults (Grant et al., 2005; Morris, Stewart, & Ham, 2005; Zimmerman et al., 2003). In an effort to better understand this co-occurrence, researchers are beginning to evaluate specific drinking-related factors, including alcohol use motives, in relation to SA (Ham, Bonin, & Hope, 2007; Thomas, Randall, & Book, 2008). Cooper's (1994) model of drinking motives suggests four reasons for alcohol use: 1) enhancement (i.e., increasing positive affect), 2) social (i.e., enhancing social situations), 3) conformity (i.e., avoiding peer rejection), and 4) coping (i.e., reducing or avoiding negative affect and anxiety). Of these, coping- and conformity-related motives have been most consistently linked with SA (Ham, Zamboanga, Bacon, & Garcia, 2009; Stewart, Morris, Mellings, & Komar, 2006; Thomas et al., 2008).

From a theoretical perspective, individuals with SA may be expected to use alcohol to manage anxiety experienced during, and in anticipation of, social situations. Indeed, research conducted with adult samples indicates that elevated SA is related to the deliberate consumption of alcohol in an effort to cope with anxiety and negative mood states (Schneier et al., 1989; Thomas,

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Randall, & Carrigan, 2003). For example, Thomas and colleagues (2008) found among 42 adults presenting with comorbid SA disorder and alcohol use disorders, in an effort to minimize anxiety approximately 50% reported drinking prior to a social event, 80% reported drinking during such events, and 80% reported avoidance of social situations in which alcohol use was not possible. Further, in a large sample of undergraduate students, Lewis and colleagues (2008) found that both coping and conformity-related drinking motives related positively to several features of SA, including interaction anxiety, social avoidance, and social fears.

Although promising, this literature is limited by the fact that no research to date has examined this relation among youth, despite the high prevalence of adolescent SA (e.g., 12.7%; DeWit et al., 1999), and the fact that alcohol use typically begins in adolescence (Newes-Adeyi, Chiung, Williams, & Faden, 2005). Further, adolescence is a unique developmental period, and risk factor processes observed in adults cannot be assumed to function identically among youth (Cicchetti & Rogosch, 2002), particularly in relation to the use of alcohol (Dunn & Mezzich, 2007). Indeed, research suggests that adolescents evidence attenuated sensitivity to many of the negative effects of alcohol (e.g., motor impairment, dysphoria), along with heightened sensitivity to some of the positive effects (e.g., social facilitation; Windle et al., 2008); accordingly, the relation between particular reasons for alcohol use and SA may be exaggerated among youth as compared to adults. For example, although adult SA has been linked to alcohol use in response to social pressure (Buckner, Schmidt, & Eggelston, 2006), and conformity motives generally, the majority of this work indicates that coping motives evidence the strongest relation with SA (Lewis et al., 2008; Stewart et al., 2006). In this vein, the relative insensitivity to negative effects and increased social facilitation associated with alcohol use among youth as compared to adults (Windle et al., 2008), in concert with heightened anxiety elicited by the social context among those with SA may enhance the learning of coping-related drinking specifically among socially anxious youth as compared to non-anxious and adult populations. Alternatively, youth who do not want to drink may learn to avoid situations in which they may feel pressured to do so; a task that is much more difficult for college students given increased availability and exposure to alcohol across social situations.

In a similar vein, adolescent SA prospectively predicts an alcohol use disorder diagnosis in adulthood (Buckner et al., 2008), and youth have been found to progress more rapidly from initial use to substance-related problems as compared to adults (Deas, Riggs, Langenbucher, Goldman, & Brown, 2000). Furthermore, although the majority of youth report social motives as their primary reason for alcohol use, work with adolescents has found that coping motives are associated with an increased risk for problematic alcohol use and alcohol-related problems (e.g., truancy; Kuntsche et al., 2005; Kuntsche, Stewart, & Cooper, 2008). It is therefore important to identify subgroups of youth who may be inclined to use alcohol to manage negative affective states.

With this backdrop, the current study was designed to examine alcohol use motives among youth as a function of SA, above and beyond other related variables (i.e., age, gender, alcohol use frequency, affective problems; Kuntsche et al., 2005). Based on theoretical (e.g., biopsychosocial effects of alcohol on youth; Windle et al., 2008) and empirical (e.g., strength of the SA-coping motives relation; Stewart et al., 2006) precedent, it was hypothesized that SA would be uniquely related to coping-related motives for alcohol use (cf., enhancement, social, or conformity motives).

Method

Participants

Fifty adolescents (52% female) between the ages of 12 and 17 years ($M_{\text{age}} = 16.35$, $SD = 1.10$) were recruited from the community as part of a larger investigation ($n = 108$) focused on

adolescent emotional vulnerability. The ethnic and racial composition reflected the make-up of the local area: 10% ($n = 5$) Hispanic/Latino, 78% ($n = 39$) Caucasian, 10% African American ($n = 5$), 2% ($n = 1$) Native American, and 10% ($n = 5$) "other." Exclusionary criteria for this larger investigation, which included a voluntary-hyperventilation challenge, were as follows: 1) breathing problems (e.g., asthma), 2) heart problems, 3) pregnancy, 4) the inability to provide written informed assent, and 5) lifetime history of panic disorder. The final sample ($n = 50$) is comprised of youth who completed all of the relevant study measures; given that participants must consume alcohol to meaningfully complete the assessment of drinking motives, all participants endorsed a positive history of alcohol use (i.e., having tried alcohol at least once).

Measures

Adolescent Alcohol and Drug Involvement Scale (AADIS)—The AADIS, an adaptation of the well-established Adolescent Drug Involvement Scale (Moberg & Hahn, 1991) which the authors modified to include alcohol (Moberg, 2000), was used to assess frequency of alcohol use. This face-valid measure asks participants to select a single answer on a scale of 0 (*never used*) to 7 (*several times a day*) that best reflects how often they drink alcohol. Each response point is accompanied by a written descriptor and higher numbers reflect increased alcohol consumption (e.g., 2 = *several times a year*; 3 = *several times a month*; 4 = *weekends*).

Youth Self Report (YSR)—The affective problems subscale of the YSR (Achenbach & Rescorla, 2001) was used to examine generalized levels of depression/dysthymia. This 10-item subscale includes items such as "There is very little that I enjoy," "I don't have much energy," and "I am unhappy, sad, or depressed," to which participants respond on a three-point scale (0 = *Not true*; 2 = *Very/Often true*) how well each item describes how they have felt during the past six months. Responses are summed, and appointed a normalized T-score based on age- and gender-specific norms. The affective problems subscale is one of the six DSM-oriented subscales derived from the YSR, and was designed to provide a dimensional assessment of DSM-defined depression and dysthymia. This well-established measure consistently evidences excellent reliability, validity, and internal consistency (e.g., $\alpha = .80$ in the current sample; please see Hughes & Melson, 2008 for a review). In the current sample, 6% of participants met the "clinical cut-off" for affective problems (i.e., T-score ≥ 70 ; Achenbach, 1991).

Drinking Motives Questionnaire-Revised (DMQ-R)—The DMQ-R (Cooper, 1994) was used to assess principal reasons for alcohol use. This 20-item, four-factor measure assesses enhancement (e.g., "because it gives you a pleasant feeling"), social (e.g., "to celebrate a special occasion with friends"), conformity (e.g., "to fit in with a group you like") and coping (e.g., "to forget about your problems") motives for drinking. Participants indicate on a five-point scale (1 = *almost never/never* to 5 = *almost always/always*) the frequency with which they drink for each reason. Subscale scores are then computed by averaging the ratings across each of the five items related to each factor. The DMQ-R evidences good internal consistency (e.g., $\alpha = .91, .91, .79, .81$ for enhancement, social, conformity, and coping respectively in the present sample), and validity, and has been successfully utilized in prior research with adolescents (Comeau, Stewart, & Loba, 2001; Dixon, Leen-Feldner, Ham, Feldner, & Lewis, in press; Kuntsche et al., 2008).

Revised Child Anxiety and Depression Scale - Social phobia subscale (RCADS-SP)—The RCADS-SP (Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000) was used as a continuous measure of SA. This 9-item subscale includes items such as "I am afraid of looking foolish in front of other people" and "I worry about what others think of me," which participants rate on a four-point scale (0 = *never* to 3 = *always*) to indicate how often each statement reflects how they typically feel. Scores are summed to yield a total score. The RCADS was designed

to reflect the dimensions of several DSM-IV-defined disorders among youth, and evidences good internal consistency (e.g., $\alpha = .88$ in the present sample), reliability, and validity (Chorpita et al., 2000). In the current sample, 26% of participants evidenced SA levels at or above those found among youth diagnosed with SA disorder (i.e., $M = 11.72$; Chorpita, Moffitt, & Gray, 2005).

Procedure

All study procedures were approved by the University Institutional Review Board. Youth responding to fliers ("If you are between the ages of 12–17 years you may be eligible for a research study...involving a breathing exercise") contacted the laboratory and were fully informed about the study. Interested youth and their parents were scheduled for the laboratory visit, whereupon written informed assent and parental consent (for child participation) was obtained. At this time, both youth and parents were reminded that all data were confidential (e.g., parents will not have access to child data) as allowed by University policy and law (c.f., mandated reporting). Thereafter, youth completed a randomly-ordered battery of questionnaires, including those described above, and a series of laboratory tasks (e.g., voluntary-hyperventilation) not relevant to the current manuscript. Finally, participants and parents were fully debriefed (i.e., the purpose of the study and any specific questions), and youth were compensated \$45.

Results

Participant-reported alcohol use was as follows: 30% ($n = 15$) had "tried" alcohol, 36% ($n = 18$) consumed alcohol several times a year, 18% ($n = 9$) several times a month, and 16% ($n = 8$) on weekends. Please see Table 1 for zero-order correlations and descriptive information for all continuous predictor and outcome variables. Independent-samples t -tests indicated that gender was not significantly related to SA [$t(48) = 1.42, p > .05$] nor any of the outcome variables (i.e., enhancement: $t = 0.90$; social: $t = 0.00$; conformity: $t = 0.85$; coping: $t = 2.0$), and thus was not included in the primary analyses. As can be seen in Table 1, age, frequency of alcohol use, and affective problems were related to motives for alcohol use; accordingly, these variables were included in the primary analyses. Finally, elevated SA was significantly related to heightened affective problems ($r = .54$) as well as coping motives ($r = .47$).

Separate hierarchical regression analyses were conducted examining alcohol use motives as a function of SA (please see Table 2); the Bonferroni method for adjusting probability levels was employed (i.e., $.05/4 = .0125$; Miller, 1981). As predicted, above and beyond the effects of other relevant variables, SA was significantly associated with coping motives, such that youth who endorsed elevated SA reported increased motivation to drink for coping-related purposes. The full model accounted for 21% of the variance in coping motives [$F(4, 45) = 4.26, p < .01$]. Also as expected, SA was not related to enhancement, social, or conformity motives for alcohol use. Post-hoc analyses also were conducted to examine whether alcohol use motives moderated the relation between social anxiety and alcohol use frequency; however, findings were non-significant (e.g., smallest $p = .625$), and thus are not discussed further in the current manuscript.

Discussion

The current study contributes to the growing literature on SA and drinking motives (e.g., Stewart et al., 2006), and is the first to examine this relation among youth. As predicted, SA was positively associated with coping-related drinking motives. The effect size was small-medium (Cohen, 1988), accounting for approximately 13% of the variance in coping motives. Results also indicated that other motives (enhancement, social, conformity) did not vary as a

function of SA, highlighting the specificity of the relation between coping motives and SA among youth.

Collectively, these findings uniquely extend research conducted with adults (e.g., Thomas et al., 2003) and suggest socially anxious youth may be motivated to use alcohol to manage their anxious arousal. The use of alcohol to reduce socially-oriented anxiety may be particularly problematic among adolescents given the saliency of the social context (Prinstein & LaGreca, 2002) and prominence of social evaluation (e.g., imaginary audience, Elkind, 1967; Schwartz, Maynard, & Uzelac, 2008) during this developmental epoch. Indeed, research suggests that the density of social networks, importance of social comparison, and sense of isolation and invulnerability that characterize adolescence (e.g., personal fable, Schwartz et al., 2008) are associated with increased risk-taking behaviors, including alcohol use (Greene et al., 2000).

It is important to note that the current study did not directly assess whether youth are using alcohol to manage anxiety associated with social situations; however, the linkage between SA and coping motives observed in the present study lays the foundation for future work examining mechanisms that may be driving the SA-alcohol use association. For example, extending the body of self-report work conducted with adults (e.g., Smail et al., 1984; Thomas et al., 2008), future work would benefit from laboratory-type models in which, for example, desire to consume alcohol for anxiety reduction reasons is indexed following a SA provocation among youth; these data would aid in delineating the specificity of SA, in contrast to negative affect generally, in the relation between SA and coping motives among youth.

The current study also adds to the larger literature examining alcohol use among youth by identifying a subgroup that evidences increased motivation to drink for coping-related purposes, as compared to the majority of youth who typically report positively-oriented social motives (Kuntsche et al., 2005). It is worth noting that coping motives are positively associated with alcohol-related problems (Carpenter & Hasin, 1999; Kuntsche et al., 2008), and adolescent SA disorder prospectively predicts an alcohol use disorder in adulthood (Buckner et al., 2008). It follows that, particularly over time, coping-related motives may directly influence (i.e., moderate or mediate) the relation between SA and the development of alcohol use disorders, a pattern that has been observed in other anxiety-alcohol research (Kaysen et al., 2007). Such trajectories should be empirically examined among adolescent samples in future research.

Importantly, the current, cross-sectional study required that youth had at least *tried* alcohol in an effort to obtain variability in consumption motives and experience. Although comparable to rates reported by other, large-scale studies (e.g., 38–72% of youth reporting prior alcohol use; Johnston, O'Malley, Bachman, & Schulenburg, 2008) alcohol use within the current sample was relatively low. We viewed this as a conservative test of the hypotheses, and findings may speak to the role of SA in alcohol use during early experimentation (Stewart et al., 2005). Conversely, although youth were not selected for the presence of psychopathology (e.g., SA), including youth who endorsed a positive history of alcohol use also may have inadvertently over-sampled youth with elevated psychological distress.

Nonetheless, an important next step in this line of research is to prospectively examine the role of coping-related drinking among socially anxious youth as it relates to onset and maintenance of problematic drinking behaviors (e.g., binge drinking) and alcohol-related problems. Indeed, consistent with a large body of work conducted with adults (Morris et al., 2005), the findings of the current study indicate that SA is not related to the frequency of alcohol consumption, but rather other variables (e.g., coping motives) that are in turn associated with alcohol-related problems. Accordingly, future research would benefit from examining the relation between

SA, problematic drinking behaviors, and alcohol-related problems among youth, as well as the role of drinking-related variables (e.g., motives, expectancies) in this association.

A number of limitations of the current study warrant additional consideration. First, the sample was small, relatively homogenous (e.g., largely Caucasian), screened for specific exclusionary criteria including panic disorder, and comprised primarily of older adolescents ($M_{age} = 16.35$ years) who participated for a monetary reward. Future research would benefit from employing more diverse sampling strategies (e.g., random sampling), as well as targeting younger adolescents and a broader spectrum of racial and ethnic groups. Further, recent research suggests that women with SA may be at particular risk for the development of an alcohol use disorder (Buckner & Turner, 2009), thus future work designed to examine this relation as a function of gender, particularly over time, is warranted.

Second, the current study relied exclusively on non-specific (e.g., “several times a month”), self-report of alcohol use. While available research indicates this is a valid index of alcohol use among adolescents (Kenny & Grant, 2007; Mohrberg, 2000; Winters et al., 1990), more sophisticated strategies aimed at more accurately evaluating alcohol use (e.g., exact number and type of beverages consumed) may be indicated in future research. Finally, SA was examined via a continuous measure in the current study given 1) the under-developed nature of the literature, 2) that a continuous index allows for more variability in terms of SA symptoms, and 3) a preliminary analysis of the data that indicated at the zero-order level, *level* of SA predicted a greater amount of the variance in coping-related drinking motives (47%) than a dichotomous index (14%, as assessed via the Anxiety Disorders Interview Schedule for DSM-IV - Child version; Silverman & Albano, 1996). Nonetheless, future research would benefit from extending the current findings to clinical samples of youth, particularly in terms of the “predictive value” of SA severity versus diagnostic status.

These limitations notwithstanding, the current study is a unique extension to the extant literature, and represents a first step in understanding alcohol use among socially anxious youth. Collectively, findings suggest that socially anxious youth endorse higher coping-related drinking motives, a characteristic that may place them at risk for developing alcohol problems (Kuntsche et al., 2008). As such, it sets the stage for future, prospective work focused on clarifying the relations among adolescent SA, coping-related drinking motives, and problematic alcohol use, with the ultimate goal of designing prevention programs that target youth at risk because of their SA.

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Table 1

Descriptive Data for Predictor and Criterion Variables

Variable	1	2	3	4	5	6	7	8	M(SD)
1. Age	--	.42**	.02	.15	.37**	.41**	.15	.06	16.35(1.10)
2. Alcohol use (AADIS)		--	-.04	.10	.57**	.53**	.10	.22	2.20(1.05)
3. Affective problems (YSR)			--	.54**	.21	-.07	.06	.31*	57.44(7.71)
4. Social anxiety (RCADS-SP)				--	.20	.23	.10	.47**	8.10(5.08)
5. DMQ-R Enhancement motives					--	.69**	.47**	.39**	2.74(1.29)
6. DMQ-R Social motives						--	.49**	.32*	2.68(1.30)
7. DMQ-R Conformity motives							--	.36**	1.37(0.58)
8. DMQ-R Coping motives								--	1.61(0.80)

Note. $n = 50$. AADIS: Adolescent Alcohol and Drug Involvement Scale (Mohberg, 2000). DMQ-R: Drinking Motives Questionnaire – Revised (Cooper, 1994). RCADS-SP: Revised Child Anxiety and Depression Scale (Chorpita et al., 2000). YSR: Youth Self Report (Achenbach & Rescorla, 2001).

* = $p < .05$.

** = $p < .01$.

Table 2

Level of Social Anxiety Predicting Reasons for Alcohol Use

	ΔR^2	t (each predictor)	β	sr^2	p
Dependent Variable: Coping motives					
Step 1	.15				.046
Age		– 0.37	–.05	.00	.712
Alcohol use (AADIS)		1.75	.26	.06	.086
Affective problems (YSR)		2.40	.32	.11	.020
Step 2	.11				
RCADS-SP total		2.69	.41	.13	.010
Dependent Variable: Enhancement motives					
Step 1	.40				.000
Age		1.81	.14	.02	.244
Alcohol use (AADIS)		4.11	.51	.26	.000
Affective problems (YSR)		2.00	.23	.08	.051
Step 2	.00				
RCADS-SP total		0.06	.00	.00	.948
Dependent Variable: Social motives					
Step 1	.33				.000
Age		1.81	.24	.06	.075
Alcohol use (AADIS)		3.21	.42	.18	.002
Affective problems (YSR)		–0.51	–.06	.00	.606
Step 2	.04				
RCADS-SP total		1.88	.26	.07	.066
Dependent Variable: Conformity motives					
Step 1	.03				.686
Age		0.83	.13	.01	.411
Alcohol use (AADIS)		0.34	.05	.00	.735
Affective problems (YSR)		0.46	.06	.00	.647
Step 2	.01				
RCADS-SP total		0.38	.06	.00	.705

Note: $n = 50$. β = standardized beta weight. AADIS: Adolescent Alcohol and Drug Involvement Scale (Mohberg, 2000). RCADS-SP: Revised Child Anxiety and Depression Scale (Chorpita et al., 2000). YSR: Youth Self Report (Achenbach & Rescorla, 2001).