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Testing the specificity between social anxiety disorder and drinking motives

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ABSTRACT

This study tested the specificity of the relationship between *social anxiety disorder* (SAD) and coping drinking motives (versus enhancement drinking motives and social drinking motives) within the context of a range of potentially confounding variables measured during adolescence (e.g., quantity and frequency of alcohol use, coping drinking motives) and substantively important variables assessed during young adulthood (e.g., other anxiety disorders and *major depressive disorder*). A sample of high school sophomores and juniors ($n=717$) completed measures of substance use and risk factors during adolescence and were then prospectively followed-up in early- and middle-young adulthood, and psychiatric diagnoses and drinking motives (i.e., coping, enhancement, and social) were assessed each time. Findings indicated that SAD was specifically related to coping motives (measured during early-to-middle young adulthood) after controlling for the effects of a range of alcohol and mental health variables. In addition, adolescent variables predicted young adult drinking motives as did *major depressive disorder* and other anxiety disorders. These findings are discussed within a conceptual framework of the functional role (e.g., self-medication) that drinking motives, and especially coping drinking motives, may play in the etiology of alcohol problems and disorders. Implications for prevention and treatment interventions are discussed.

1. Introduction

Considerable research has been conducted on the proximal and differential role of motives for drinking on alcohol use, alcohol problems, and alcohol disorders (Kuntsche, Knibbe, Gmel, & Engels, 2005, 2006; Sher, Grekin, & Williams, 2005). However, studies of *precursors* of motives for drinking have been limited despite some recent studies supporting the potential role of motives for drinking as a mediator or moderator between social anxiety symptoms and disorders (SAD), a typically early onset disorder (in childhood/early adolescence), and alcohol use and alcohol problems in adolescence and young adulthood (Blumenthal, Leen-Feldman, Frala, Bandour, & Ham, 2010; Buckner, Schmidt, & Eggleston, 2006; Ham, Bonin, & Hope, 2007; Ham, Zamboanga, Bacon, & Garcia, 2009; Lewis, Hove, & Whiteside, 2008). Moreover, issues have been raised about the strength and specificity of the associations between SAD and drinking motives, particularly in coping motives for drinking. For example, Blumenthal et al. (2010) reported a significant, positive relationship between social anxiety and coping drinking motives but not between social anxiety and enhancement, social, or conformity motives. In contrast, Buckner et al. (2006) found that social anxiety was related to enhancement motives but not to social or coping motives.

Drinking motives are guided by the notion that individuals imbibe alcohol to achieve valued outcomes and that these motives involve cognitive-motivational aspects of decision-making (Cooper, Russell, Skinner, & Windle, 1992; Cox & Klinger, 1988). Cooper et al. identified three distinct drinking motives they referred to as coping, social, and enhancement motives. Social and enhancement motives were conceptualized as positively reinforcing motivations for drinking (e.g., social drinking to facilitate camaraderie; enhancement drinking to facilitate confidence in social situations or to enhance the impact of another drug), and coping motives were conceptualized as negatively reinforcing motivations for drinking (e.g., to cope with or escape from stress). These motivations for drinking have been linked to theoretical models of the etiology of alcohol disorders through positive and negative affect regulatory processes (Cooper, Frone, Russell, & Mudar, 1995; Sher et al., 2005).

The objective of the current study was to provide an evaluation of the potentially unique association between SAD and coping motives for drinking, relative to the association (or lack thereof) between SAD and social motives and SAD and enhancement motives. A hypothesized unique relationship between SAD and coping motives for drinking is an interesting research question given that it has been postulated that SAD may represent an especially potent risk factor (relative to other anxiety disorders) for the development of problematic alcohol use and alcohol disorders (Buckner et al., 2008), and that a

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self-medication or tension reduction process may at least partially explain this relationship (Carpenter & Hasin, 1999; Carrigan & Randall, 2003; Kushner, Abrams, & Borchardt, 2000). That is, some individuals with high levels of social anxiety may consume alcohol in feared social situations in an attempt to reduce the adverse physiological and psychological symptoms they experience. In many Western societies, the consumption of alcohol within the context of numerous types of social events (e.g., parties, weddings) is normative behavior; thus, socially anxious people who are motivated to use alcohol as a coping mechanism in social situations are able to do so without fear of negative evaluation by others. Across time, the continued use of alcohol for coping purposes may eventually result in the development of heavy drinking, alcohol-related problems, and/or alcohol disorders (Kushner, Sher, & Beitman, 1990). A finding that SAD is specifically related to coping drinking motives has implications for prevention and treatment interventions.

By focusing on this objective of investigating the association between SAD and coping motives for drinking, we aimed to advance the research literature in two ways. First, several methodological limitations of recent studies investigating the relationship between social anxiety and drinking motives include cross-sectional research designs, small sample sizes, and/or restricted samples, such as college students or a preponderance of female participants (Blumenthal et al., 2010; Buckner et al., 2006; Ham et al., 2009; Lewis et al., 2008; Stewart, Morris, Mellings, & Komar, 2006). In order to address these limitations, we used data from a long-term longitudinal project that spanned adolescence to young adulthood and included a relatively large community sample with a high representation of each gender (Windle, Mun, & Windle, 2005).

Second, most studies have used social anxiety as the *sole* predictor variable in regression or structural equation modeling analyses, with a range of drinking motives and/or alcohol use variables as outcomes (Blumenthal et al., 2010; Ham et al., 2007; Lewis et al., 2008). Given that other variables not included in these analyses might account for the relationship between social anxiety and drinking motives or alcohol use indicators, the objective of the current study was to provide a more rigorous test of the relationship between SAD and drinking motives by controlling some potential third variable influences. To accomplish this, we utilized linear regression models that included a range of potentially confounding and substantive variables in the equations. That is, with young adult coping, enhancement, and social drinking motives as outcomes, we included sex, adolescent alcohol consumption, and adolescent depressive symptoms as potentially confounding variables that may partially account for the relationship between SAD and young adult motives for drinking. Further, we included Time 1 (adolescent) coping drinking motives as a control for T2 (young adult) coping motives. Because of the high co-morbidity of SAD with major depressive disorder (MDD) and other anxiety disorders (Grant et al., 2005), we included lifetime diagnoses of MDD, SAD, and other anxiety disorders as substantive predictor variables. This allowed us to test the ability of SAD to predict coping (and possibly other) drinking motives after accounting for the effects of prior adolescent predictors and other potentially influential variables (e.g., other anxiety and major depressive disorders).

Within this context, we put forth three study hypotheses. First, based on the findings of previous research (Blumenthal et al., 2010; Ham et al., 2007), we hypothesized that SAD would be a significant predictor of coping motives for drinking. Second, we hypothesized that SAD would not be a significant predictor of social drinking motives given that such motives (e.g., drinking to be sociable, drinking to celebrate special occasions with family and friends) have generally been found to be more commonly endorsed and to be associated with non-problematic alcohol consumption in social situations (Cooper, 1994; Kuntsche et al., 2005). That is, drinking alcohol in social situations for celebratory purposes is viewed as normative social behavior, and is generally not associated with internalizing psychopathology, such as anxiety and depression. With regard to our third hypothesis, Cooper (1994) conceptualized enhancement motives such that they would, in general, be characterized by heavier levels of alcohol consumption within social situations in which the goal was to get high and have fun, rather than to cope with internalized feelings of insecurity and fear. Some researchers have found no relationship between social anxiety and enhancement motives (Blumenthal et al., 2010; Cooper et al., 1995), others have found only a weak relationship (Ham et al., 2007), whereas others found that enhancement motives are related to social anxiety (Buckner et al., 2006; Ham et al., 2009). Within the context of these mixed results and based on Cooper's conceptualization, we hypothesized that SAD would not be a significant predictor of enhancement drinking motives.

2. Methods

2.1. Study participants

The data used in this study were collected as part of a larger, multi-wave panel design focused on risk factors and adolescent substance use and mental health (Windle et al., 2005). We refer to the study by the acronym LAT, which stands for Lives across Time: A Prospective Study of Adolescent and Adult Development. The initial principal objective of the LAT was to assess the onset, escalation, maintenance, and continuation (or termination) of alcohol and other substance use among 1205 teens during the high-school years (with four waves of assessment at six-month intervals) in relation to a range of risk factors (e.g., temperament, peer substance use, and family history of alcoholism). Data were collected within the adolescents' high school setting and the overall student participation rate was 76%. The sample consisted of high school sophomores (53%) and juniors (47%) recruited from two homogeneous suburban public high school districts (a total of three high schools) in Western New York and the average age of the respondents at the first occasion of measurement was 15.54 years ($SD = 0.66$), 98% were white, and 50.8% were females. Sample retention across the first four waves of measurement was uniformly high, in excess of 90%.

There was approximately a six-year gap between the Wave 4 assessment in adolescence and the Wave 5 data collection that occurred when the average age of the young adults was 23.5 years, and about five-years between Wave 5 and Wave 6 when the average age of young adults was 28.5 years. The Waves 5 and 6 assessments were modified from Waves 1–4 in that data collection changed from a large group, in-school survey format to individual interviews of the young adults and their mothers and fathers in their homes. Greater detail on the Wave 5 assessment is provided elsewhere (Windle et al., 2005). For this study, 717 young adults who had clinical diagnostic data in young adulthood, relevant Wave 4 adolescent data, and data on motives for drinking were included. For this sample of 717, less than 5% of the individual response data were missing; thus, missing data were estimated via maximum likelihood methods. Attrition analyses for participants and non-participants in the full sample on critical predictors (e.g., adolescent delinquency and family income) and outcomes indicated minimal differences; thus, there was no evidence of selective drop-out that could bias parameter estimates and statistical tests.

2.2. Procedure

During the adolescent phase (i.e., Waves 1–4), subsequent to receiving informed consent both from a parent and the target adolescent, a trained survey research team administered the survey to adolescents in large groups (e.g., 40–50 students) in their high school setting at each wave. The survey took about 45–50 min to complete and subjects received $10.00 for their participation. Confidentiality was assured with a U.S. Department of Health and Human Services