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**Social Anxiety, Heavy Episodic Drinking, and Drinking Motives in Undergraduates**

**By Samantha Reis**

**An undergraduate honors thesis submitted in partial fulfilment of the requirements for a**

**Bachelor of Science**

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**University Honors**

**and**

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**Thesis Advisor**

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Social Anxiety, Heavy Episodic Drinking, and Drinking  
Motives in Undergraduates

**Abstract**

Alcohol use and social anxiety in college students are a public health concern due to continuous evidence of comorbid Alcohol Use Disorder and Social Anxiety Disorder. The current study was a secondary analysis of a cross-sectional survey with undergraduate participants ( $N=1147$ ,  $M_{\text{age}}=26$ , 56% female) on the topics of social anxiety, drinking motives, and heavy episodic drinking. As hypothesized, social anxiety predicted the drinking to cope motivation, as well as the other drinking motivations. Drinking to cope also significantly predicted alcohol use in the sample. Alcohol consumption was at a hazardous level of consumption, though the relationship between social anxiety and alcohol use was found to be inconclusive. Further, this study represented a non-traditional college-aged student sample, demonstrating that the findings from traditional college-aged samples have been replicated.

### **Introduction**

The prevalence of Social Anxiety Disorder (SAD) in the United States is estimated to be nearly 7% (Grant et al., 2005). The disorder is characterized by a social phobia of being scrutinized by others and may lead to reclusion as a result of intense fear of humiliation when in public. Unfortunately, Grant et al. (2005) estimates that close to half of those with social anxiety disorder meet the criteria for a dual diagnosis of Alcohol Use Disorder (AUD). Furthermore, in college populations, it has been known that the rate of alcohol use is fairly high due to situations encouraging alcohol use. O'Malley and Johnston (2002) state that 43% of college students report drinking more than five drinks at one time in a two week period. Due to the concern regarding this population, and the high prevalence of comorbid SAD and AUD (Morris, Stewart, & Ham, 2005), it is apparent that identifying those at risk for developing alcohol-related problems should be a top priority when researching social anxiety in terms of prevention and early intervention strategies.

Drinking motivations, primarily drinking to cope, have become important predictors of developing patterns of hazardous drinking in individuals (Cooper, Frone, Russell & Mudar, 1995). Drinking motivations include drinking to cope (drinking alcohol to reduce negative feelings), drinking to enhance (drinking alcohol to intensify positive feelings), drinking to conform (drinking to fit in with a certain group), and drinking to be social (or drinking to make a social gathering more fun). Both drinking to enhance and drinking to cope are associated with greater volume and frequency of alcohol consumption. Those who frequently drink to cope may decrease their ability to cope with psychological distress without alcohol, which motivates research of the link between drinking to cope and hazardous drinking patterns (Cooper, 1995).

An additional caveat appears to be that drinking to cope may also be related to alcohol expectancies, particularly the Tension Reduction Hypothesis (Conger, 1956), as it is widely accepted that the way one perceives alcohol will influence drinking motivations, particularly in that alcohol will reduce negative feelings. As Cooper et al. (1995) states, expectancies can be characterized as “direct predictors of drinking motives and as moderators of the effects of personality factors and emotional experience on the motivated use of alcohol” (pp 1000). Clearly, this complicates the interaction between social anxiety and drinking to cope as there are multiple pathways that arrive at certain drinking motivations and heavy episodic drinking. Hazardous drinking, also defined as heavy episodic drinking, is clinically defined as more than five drinks in a day for a man or more than four drinks in a day for a woman (Wechsler, Dowdall, Davenport, & Rimm, 1995). The purpose of the research study is to identify drinking to cope motivations in individuals with higher social anxiety in a non-traditional undergraduate population. The study will focus on endorsement of drinking to cope, the rate of heavy episodic drinking in the sample, and individuals with moderate to severe social anxiety.

The research regarding the relationship between alcohol and social anxiety is not definitive. Multiple studies have found no significant relationship between social anxiety and alcohol (Ham & Hope, 2005), and other studies have found a negative relation between social anxiety and weekly alcohol usage, with little to no prediction of alcohol-related problems (Ham, Bonin, & Hope, 2007). Additionally, Brook and Willoughby (2016) determined that there were two groups of highly socially anxious students--those who drink large quantities of alcohol and those who do not. The socially anxious alcohol users had more maladaptive coping mechanisms, such as self-harm, and lower academic scores than the group of socially anxious college students

who did not drink. Furthermore, social anxiety was not related to drinking with positive emotion but was correlated to drinking during times of conflict or negative emotion, supporting the drinking to cope motive (Norberg, Norton, Olivier, & Zvolensky, 2010). Those who drink to cope with their anxiety may also avoid social situations if there is not alcohol present, which reinforces a pattern of dependence on alcohol, particularly if heavy episodic drinking is involved (Buckner & Heimberg, 2010). Those with social anxiety have also been found to drink in order to negate scrutiny from others or as a reaction to a negative event, such as an argument with a loved one (Buckner & Heimberg, 2010; Terlecki & Buckner, 2015). Interestingly, coping motives are more commonly measured in women with a clinical diagnosis of social anxiety, while men with the same diagnosis report drinking to conform as their primary motivation (Buckner & Shah, 2014). However, Norberg and colleagues reported that women with social anxiety primarily report both drinking to cope and drinking to conform motives, while men endorse neither (Norberg et al., 2010). The differing drinking motives between genders further suggests that a closer look at the significance of coping motives needs to be evaluated, as it is possible social motives or conformity motives may also be at work. Additionally, in congruence with discrepancies of alcohol usage among the socially anxious, Ham and colleagues determined that socially anxious students were more likely to hold drinking to cope motives, even if alcohol consumption and rates of binge drinking were low (Ham, Bonin, & Hope, 2007).

Further, clinical evidence in support of the proposed relationship between drinking to cope and SAD exists. In a clinical study, participants with SAD were treated with a serotonin reuptake inhibitor (SSRI) to treat their symptoms of social anxiety, which was correlated with a decrease in the reported drinking to cope motive (Thomas, Randall, Book, & Randall, 2007).

This study demonstrates that the uncomfortable symptoms of social anxiety may be a driving factor in choosing to drink alcohol to cope with negative emotions associated with SAD. Due to the evidence supporting the relationship between alcohol use and social anxiety, it is hypothesized that individuals with high social anxiety drink more alcohol than those with lower social anxiety. It is also projected that individuals with social anxiety endorse drinking to cope more frequently, and the amount of alcohol consumed will be greater as a result of this motive.

**Hypothesis One (H1):** Participants with with higher social anxiety consume more alcohol than those with lower social anxiety.

**Hypothesis Two (H2):** Participants with social anxiety endorse the drinking to cope motive more frequently than those without social anxiety.

**Hypothesis Three (H3):** Participants who drink to cope consume more alcohol on average.

## Methods

### Overview

Data for the present study were drawn from Mohr, Arpin, McCabe, and Haverly's (2016) cross-sectional survey study on urban, undergraduate students. The original study examined the relationship between alcohol consumption, drinking motives, and capitalization, which is the disclosure of positive news to another person. Two waves of self-report surveys were administered to participants via Internet on topics such as alcohol use, interpersonal relationships, social anxiety, and endorsement of drinking motives using a variety of scales. The students were recruited through announcements made in class and received extra credit in exchange for participating. The present study is a secondary analysis, focusing on the survey data

regarding alcohol consumption, drinking motives, and social anxiety scores. For more information about the original study, see Mohr et al. (2016).

### **Participants**

The total number of participants was  $N=1147$  undergraduate students, with 15% ( $n=172$ ) of participants not responding to one or more measure. Sixty-five percent were female and 21% were male, with 14% of participants not disclosing which gender they identified as. Demographically, the sample was 67% Caucasian, 11% Asian, 8% Hispanic or Latino, 3% African American, and 11% Other. Overall, 47% ( $n=464$ ) of participants were of traditional college age (ages 17-22), with 53% of participants of non-traditional college age (over the age of twenty-three,  $n=525$ ). The average age within the sample is 26 years old ( $M=26$ ,  $SD=7.96$ ). Educationally, the majority of the population was pursuing completion of an undergraduate degree, but 9% ( $n=93$ ) already had a bachelor's degree, 1% ( $n=12$ ) had some graduate study, and seven ( $n=7$ ) had completed a graduate program. Eighty-seven percent (87%,  $n=835$ ) identified as heterosexual, 4% identified as homosexual ( $n=40$ ), and 9% were bisexual ( $n=81$ ). Further, 84.1% ( $n=810$ ) of the sample did not have children, while 7.1% ( $n=68$ ) had one child, 5.3% ( $n=51$ ) had two children, and 3.5% ( $n=34$ ) of the sample had three children or more. As for employment status, 36.6% ( $n=355$ ) of the sample declared themselves as unemployed, 4.3% ( $n=42$ ) were self-employed, and 59% ( $n=572$ ) were employed by others. Of those who work, 91.9% ( $n=474$ ) reported working part time (35 hours a week or less), 8.1% reported working full time, or 36 hours or more a week ( $n=96$ ). Additionally, 11% of the sample ( $n=126$ ) were found to have never consumed alcohol in their lifetime.

### **Procedures**

Professors at an urban university invited their students to take part in an undergraduate research study for extra credit. Announcements were made in class and through the psychology email listserve. Participants obtained the URL link to the online survey through email or the D2L course page and were required to complete an informed consent process before proceeding to the main survey. Undergraduates who did not wish to complete the survey were offered an alternative extra credit assignment to ensure that participation was not based entirely on course credit. The full survey was estimated to take each participant approximately 35 minutes.

### Measures

*Maximum Alcoholic Drinks Consumed* (MAXDRNK; Armor, Polich, & Stambul, 1978) is a measure in which participants submitted the highest number of alcoholic drinks consumed in one day in the last 30 days. Participants are to respond with a numeric value of between zero to seven beverages or eight or more (0-7, 8+).

The *Drinking Motive Questionnaire-Revised* (DMQ-R; Cooper, 1994), a twenty-item questionnaire asking five questions per drinking motive, was used to assess drinking motives through twenty questions that examined Drinking to Cope, Drinking to Enhance, Drinking for Social Reasons, and Drinking to Conform. Drinking to Cope ( $\alpha = 0.89$ ) was assessed by posing questions such as, "How often do you drink because it helps when you feel depressed or nervous?" Drinking to Enhance ( $\alpha = .86$ ) was assessed by asking questions such as "How often do you drink because it's exciting?" Drinking for Social Reasons ( $\alpha = .88$ ) was evaluated with questions such as, "How often do you drink because it makes social gatherings more fun?" Finally, Drinking to Conform ( $\alpha = .85$ ) was examined by asking, "How often do you drink to fit in with a group you like?"

*Social Interaction Anxiety Scale* (SIAS; Mattick & Clarke, 1998) is a nineteen-item self-report measure that assesses levels of anxiety in social situations with other individuals ( $\alpha = .90$ ). Participants are asked to rate anxiety-inducing situations on a Likert-type scale ranging from zero (“not at all characteristic or true of me”) to five (“extremely characteristic or true of me”). Participants rate scenarios such as, “I get nervous if I have to speak to someone in authority” or “I have difficulty talking with other people.” Scores of 34 or greater indicate that social phobia is probable, while scores of 43 and greater indicate that social anxiety disorder is likely.

## Results

### Descriptive Statistics

Statistical analyses were run in SPSS 25 to determine correlational relationships between variables and variances of means. Within the sample, participants ( $n=998$ ) responded to the SIAS with a mean score of 27 ( $SD=13.984$ ), with scores ranging from zero to 76. Thirty-two percent (32%) of the sample were found to have probable social phobia with scores  $\geq 34$ , while 16% of the sample demonstrated moderate to high social anxiety with scores  $\geq 43$ . After performing a one-way ANOVA with the SIAS scores, there was no significant difference between genders in social anxiety scores [ $F(1, 944)=.156, p=.693$ ]. For men and women, the mean anxiety scores were 26 ( $SD Men=16.81, SD Women=16.15$ ).

In terms of alcohol use within the sample, 645 (56%) participants responded to the MAXDRNK, with missing data attributed to 11% of the sample being categorized as never having drunk alcohol in their lifetime ( $n=126$ ). The average maximum amount of alcoholic drinks consumed over 30 days was 4 ( $M=4.14, SD=2.308$ ). Men consumed significantly more

than women in terms of largest number of drinks consumed in a day ( $M=4.96$ ,  $SD=2.58$  vs.  $M=3.85$ ,  $SD=2.14$ ,  $SD=2.14$ , respectively), at  $F(1,633)=28.571$ ,  $p < .001$ . The mean maximum is at a level of hazardous drinking, as heavy episodic drinking is defined as more than five drinks in a day for a man or more than four drinks in a day for a woman (Wechsler et al., 1995).

### **Social Anxiety and Alcohol Consumption**

When performing a one-way ANOVA between alcohol consumption (MAXDRNK) and social anxiety (SIAS), age was a significant covariant variable when controlling for gender at  $F(1, 619)= 12.896$ ,  $p < .001$  and thus remained as a covariable. A one-way ANOVA was also performed examining age, gender, and social anxiety predicting MAXDRNK, revealing that social anxiety did not significantly project drinks consumed at  $F(1, 619) = 1.776$ ,  $p = .183$ . Because of this data H1 was inconclusive, meaning that results did not indicate that social anxiety predicted heavier alcohol consumption.

### **Social Anxiety and Drinking Motives**

Consistent with H2, social anxiety significantly predicted drinking to cope motivations at  $F(3, 786)=20.368$ ,  $p < .001$ , controlling for gender and age. H2 was conclusive, meaning that those with social anxiety did indeed endorse drinking to cope more frequently than those without social anxiety. The model accounted for 7% (adjusted  $r^2=.069$ ) of the explained variance in coping motivation scores. Additionally, 10% of the population endorsed drinking to conform as another primary motive associated with social anxiety  $F(3, 786)= 28.542$ ,  $p < .001$ , adjusted  $r^2 = .09$ . Social anxiety also predicted social drinking motives, though the relationship accounted for less explained variance than the other two models [ $F(3, 787)=13.685$ ,  $p < .001$ , adjusted  $r^2=.05$ .]

Drinking to enhance was also significantly related to social anxiety at  $F(3, 787)=3.82, p < .01$ , adjusted  $r^2=.011$ . See Table A1 for descriptive statistics.

### **Drinking to Cope and Alcohol Consumed**

H3 was conclusive as results revealed that drinking to cope was a significant predictor of alcohol consumption at  $F(3, 619)=48.208, p < .001$ , adjusted  $r^2=.189$ . Concurrent with previous research, it has been established that drinking to cope is linked to the greatest amount of alcohol consumption of the four drinking motives (Cooper, 1994). Additionally, within the sample, 30% of the explained variance of alcohol consumption is related to all drinking motives at  $F(6, 615)=45.660, p < .001$ , adjusted  $r^2=.301$ .

## **Discussion**

### **Summary of Findings**

The goal of the present study was to elucidate the relationship between social anxiety and alcohol use in a nontraditional student sample, as well as understand how drinking motives are associated with social anxiety. Results revealed that age was predictive of the relationship between alcohol consumption and social anxiety, as younger students tended to consume more alcohol than older students. H1 was inconclusive, and results did not indicate that those with high social anxiety consume more alcohol than those with lower social anxiety. H2 was conclusive as those with social anxiety were found to frequently endorse drinking to cope as well as drinking to enhance, drinking to conform, and to a lesser degree, drinking for social motives. Furthermore, H3 was also confirmed as evidence demonstrated that a third of the alcohol consumption reported in the sample was found to be attributed to drinking motives, including drinking to cope.

**Implications**

The present study was unable to confirm the relationship between social anxiety and alcohol use that other studies have previously determined (Ham & Hope, 2005). It is possible that some college students with social anxiety may be reporting less alcohol use due to avoidance of social situations where alcohol consumption is occurring, due to triggering uncomfortable symptoms of social anxiety (Schry et al., 2013; Buckner et al., 2010). It has also been suggested that there is a subtype of socially anxious college students who report heavy drinking to cope, as well as a subtype of socially anxious college students who abstain from alcohol, as if social anxiety is a protective factor against alcohol-related problems (Brook et al., 2016).

The study also confirmed that social anxiety predicts drinking to cope motivations, as multiple other studies have discovered (Norberg et al., 2010; Buckner et al., 2010; Terlecki et al., 2015; Ham et al., 2007; Thomas et al., 2007). This finding was hypothesized due to the assumption that college students with social anxiety would drink alcohol to negate their feelings of anxiety in social situations. Further, though the relationship between social anxiety is not directly related to the amount of alcohol consumed in this sample, it has been discovered that socially anxious students were more likely to hold drinking to cope motives, even if alcohol consumption and rates of binge drinking were low (Ham et al., 2007), suggesting a problematic perspective of alcohol. A meta-analysis performed by Schry et al. (2013) ascertained that socially anxious college students drank less alcohol in terms of quantity and frequency, but this does not evidentiate that these individuals are not drinking to cope with negative emotion. It is hypothesized that these students are not drinking in excess most likely due to the fact that inebriation would further affect their social performance in social settings (Schry et al., 2013).

However, in the present sample, the mean maximum number of alcoholic drinks consumed in one day was at a hazardous level of five drinks for men and four drinks for women. Given the current body of research suggesting that alcohol consumption decreases as individuals mature from college-age to adulthood (Weingardt, Baer, Kivlahan, Roberts, Miller, & Marlatt, 1998), this is surprising with a sample that is an average age of 26 and 53% of non-traditional college age (over the age of twenty-three, n=525). In a sample potentially juggling a family, working part-time or full-time, and attending college courses, it is interesting to consider that alcohol use was as prevalent as traditional college-aged student samples who may have less responsibilities. However, given the stresses of non-traditional students, it could be argued that the great deal of stress they are under may contribute to drinking to cope motives as well as increased alcohol use as a result. Given that this study is unique with over half of the sample being non-traditional college students, more research should be allocated to this population, especially with the finding that coping mechanisms are endorsed just as frequently and alcohol use is just as hazardous.

### **Limitations and Future Research**

As this secondary analysis uses data from a cross-sectional survey study, the study design does not allow insight into improvement or development of alcohol patterns over time, as many students' drinking habits change throughout the course of the college and into the transition of adulthood (Weingardt et al., 1998). Additionally, the participants in the sample were not diagnosed with SAD, as the SIAS used scale scores to determine moderate social phobia and probable social anxiety. Perhaps, in order to be most effective in terms of intervention and prevention, it would be most beneficial to study college students who are clinically diagnosed

with SAD to understand the processes behind development of alcohol-related problems and AUD.

Furthermore, the scale used to assess alcohol use in the sample, the MAXDRNK, relies on participants' abilities to recall alcohol usage accurately over the course of one month, which may skew results. The fact that the measure was a one-item scale may have influenced the inconclusive results regarding the relationship between alcohol consumption and social anxiety. Future studies should seek to use a more comprehensive alcohol assessment or perhaps develop a scale specifically for those with social anxiety. Measuring alcohol is a somewhat complicated task given both memory recall and the general population's understanding of "one drink." In a large Australian study, when participants were asked how much alcohol they consumed "yesterday" in comparison to sales of alcohol purchased, participants only recalled 76.8% of the alcohol actually consumed (Stockwell et al., 2004). This clearly leaves room for error in accuracy and may put the rate of hazardous drinking even higher, particularly in college students. It is also advised that researchers consider developing or using alcohol scales pertinent to each type of alcohol consumed or use scales that are more longitudinal in nature (Dawson, 2003).

Additionally, the sample was 65% female, which may have influenced the drinking motives endorsed. Previous research studies have found that women most frequently endorse drinking to cope, while men most frequently endorse drinking to conform (Buckner et al., 2014). Cooper (1995) has also discovered that coping motives in men lead to greater alcohol-related problems, but men most frequently endorse drinking to enhance positive emotion. Other research studies have shown that females tend to endorse both coping and conformity motives, while males endorse neither (Norberg et al., 2010). Clearly, it is important to research the discrepancies

between drinking motives and gender in those with social anxiety. Future research should seek to have equal female and male samples to determine if there truly are differences in endorsement of motives.

In conclusion, this research study established that social anxiety is significantly related to drinking motives. The drinking to cope motive is particularly of concern due to research stating that it is internally focused on alleviating emotion, such as symptoms of social anxiety, with alcohol. Over time, this may lead to heavier, consistent consumption as it becomes a coping mechanism to deal with mental illness. It is theorized that this motive leads to more habitual, frequent alcohol use in comparison with enhancement, conformity, and social motives because those tend to be situational and alcohol consumption may vary (Cooper, 1994). Research on this topic is important due to the high comorbidity of AUD and SAD, as well as the fact that college students are at increased risk of developing alcohol-related problems due to party culture. Researchers have already demonstrated that a sub-population of college students with social anxiety may drink to cope with their condition due to maladaptive coping mechanisms, which may make these individuals most likely to develop AUD (Brook & Willoughby, 2016). Cooper (1995) also supports the theory that those who drink to cope are often doing so to alleviate a negative affect, such as anxiety or depression, and believe in alcohol's power to alleviate tension (Tension Reduction Hypothesis; Conger, 1956). Long term drinking to cope with social anxiety may certainly contribute to addiction and problematic alcohol patterns in a population already prone to depression due to social isolation. Further research should focus on the development of AUD for those already diagnosed with SAD in order to best treat and prevent comorbidities from occurring.

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**Table A1:** Age, Gender, and Social Anxiety as Predictors of Drinking Motives

Predictors	Coping Motives		Social Motives		Conformity Motives		Enhance Motives	
	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>
<b>Age</b>	0.044	1.27	-0.189	-5.395***	-0.086	-2.51*	-0.112	-3.147**
<b>Gender</b>	0.22	0.645	0.037	1.073	-0.117	-3.447**	-0.037	-1.04
<b>Social Anxiety</b>	0.269	7.784***	0.088	2.529*	0.272	8.001***	0.023	0.659

*Note:*

\* $p < .05$

\*\* $p < .01$

\*\*\* $p < .001$