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The Effect of Anxiety on Self-Disclosure of Alcohol Use

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Abstract

Co-occurring alcohol use and anxiety disorders are prevalent in the general population, significantly associated with increased severity of symptoms and lower rates of treatment seeking.[1] Anxious individuals fearing negative evaluation are often unlikely to disclose their symptoms, leading to more negative outcomes[2]; some patients are less likely to disclose alcohol use depending on the situation.[3] It is hypothesized that individuals experiencing higher levels of state anxiety will report less alcohol use and related problems on the AUDIT. It is also hypothesized that individuals experiencing higher social anxiety will report lower AUDIT scores. Participants were 157 undergraduate students from a small liberal arts university in California (119 females and 38 males) with a mean age of 21.47 (SD = 5.41), randomly assigned to three groups: control, low anxiety, or the high anxiety group. Anxiety was manipulated by having subjects view and rate photographs from the Geneva Affective Picture Database.[4] Subjects completed the Six-Item State Anxiety Scale[5], the Alcohol Use Disorders Identification Test[6], the Six-Item Social Interaction Anxiety and Six-Item Social Phobia Scales[7], and the GAD-7 used to asses general anxiety.[8] The findings did not confirm the original hypothesis: all groups reported statistically equal AUDIT scores. The secondary hypothesis was partially supported: social anxiety was negatively correlated with alcohol consumption.

Keywords: Anxiety, Alcohol, Disclosure

1. Introduction

Anxiety and alcohol-related disorders occur together at very high rates in the United States, affecting over 3 million people; almost one fifth (17%) of adults who suffer from alcohol use disorders are also diagnosed with a co-occurring anxiety disorder.[9] Assessment of those suffering from anxiety and alcohol abuse can be difficult, partially due to defensive responding compromising the accuracy of self-reporting, as well as difficulty in distinguishing whether alcohol use or anxiety is the cause of the presenting symptoms.[10] In addition to being harder to diagnose, patients receiving treatment for alcohol dependence who also have a comorbid anxiety disorder tend to have poorer outcomes, being more likely to relapse and return to drinking.[11] Research on social anxiety has resulted in contradictory findings[11], with some studies linking social anxiety to more frequent and heavier drinking[12], some less frequent and lighter drinking[13], and others not finding any relationship.[14] Although very common, patients with both alcohol use and anxiety disorders remain difficult to treat successfully, with more research being needed to develop effective assessment methods for successful treatment.

The term alcohol use disorder includes both alcohol abuse and alcohol dependence. Alcohol abuse is typically a pattern of drinking which leads to impairment or distress and interferes with work, school, or relationships, and may result in legal, social, or interpersonal problems.[15] Alcohol dependence includes the need to increase the amount of alcohol necessary for intoxication, drinking a larger quantity or for a longer duration of time than intended, physical withdrawal symptoms, unsuccessful attempts to reduce alcohol consumption, and withdrawing from social situations because they interfere with drinking.[15] State anxiety is the anxiety that one feels in the present moment[5], as opposed to trait anxiety which is the stable way that one experiences anxiety over time.[16]

1.1. Comorbidity

Schneier et al. examined the relationship between Social Anxiety Disorder (SAD) and Alcohol Use Disorder (AUD) in a study of data from the National Epidemiologic Survey on Alcohol and Related Conditions.[1] Using the Alcohol Use Disorder and Associated Disabilities Interview Schedule – DSM-IV version, 2.4% of the respondents were identified as suffering from both SAD and AUD. The results show that SAD is positively correlated with increased rates of alcohol dependence and abuse. SAD with AUD co-morbidity was found to be associated with more mood, anxiety, psychotic, and personality disorders, with SAD occurring before alcohol dependence in 79.7% of co-morbid cases. SAD was also associated with increased severity of alcohol dependence and abuse. Despite the increased rate of problems that they suffered from, survey respondents with a dual diagnosis of SAD and AUD reported low rates of treatment. Schneier et al. conclude that further research is needed to develop more effective interventions for people suffering from co-morbid Social Anxiety and Alcohol Use Disorders.

Buckner and Heimberg examined the relationship between high levels of social anxiety and the frequency of alcohol-related problems.[14] Participants completed an online survey which measured social anxiety using questions from the Social Interaction Anxiety Scale (SIAS) and Liebowitz Social Anxiety Scale (LSAS), as well as assessing alcohol use with the Daily Drinking Questionnaire-Revised (DDQ-R), the Rutgers Alcohol Problems Index (RAPI), and the Drinking to Cope with Social Anxiety Scale (DCSAS). Buckner and Heimberg found that there was no difference between the high social anxiety (HAS) and low social anxiety (LSA) groups when comparing drinking frequency or quantity. They did, however, find that the HSA group was significantly more likely to use alcohol to cope in social situations (measured by the DCSAS), as well as to report more alcohol-related problems (measured by the RAPI). The HSA group was also found to be more likely to avoid social situations in which they could not use alcohol in order to cope with their anxiety. Buckner and Heimberg postulate that drinking to ease social anxiety ultimately prevents the learning of more adaptive coping strategies, and worsens anxiety symptoms as successes are attributed to alcohol while failures are internalized. Fear of negative evaluation may prevent HSA individuals from disclosing the fact that they are intoxicated and asking for help, leading to negative outcomes from risky activities, such as drunk driving.

Further study of social anxiety and alcohol use supported the correlation between fear of negative evaluation (FNE) and increased alcohol-related problems.[13] Participants were administered questions from the Brief FNE (FNE-B), the Social Avoidance and Distress Scale (SADS), the Drinking Motives Questionnaire Revised (DMQ-R), the Rutgers Alcohol Problems Index (RAPI). Participants also answered demographic questions that asked them their age, gender, and current year of university. Results showed that individuals with social anxiety consumed alcohol less frequently, but there was no significant relationship between social anxiety and quantity of alcohol consumed per drinking occasion. Fear of negative evaluation was positively correlated with levels of drinking problems measured by the RAPI.

1.2. Treatment Implications

Colognori et al. studied 814 high school students in 10^{th} and 11^{th} grade from three public high schools in the suburbs of New York City.[17] Students were administered a survey in a classroom setting with measures including the Service Utilization Survey, the Social Phobia and Anxiety Inventory for Children, and the Multidimensional Anxiety Scale for Children. Two hundred seventy of the participants scored above the clinical cutoff for social anxiety disorder; only 22% of students scoring above the clinical cutoff reported receiving services for their anxiety. Less than half of the 814 students reported having ever disclosed their anxiety, with only 2% having confided in school personnel. Approximately two-thirds of students that sought treatment described the experience as helpful; however, the likelihood of students receiving treatment within one year after the onset of their anxiety symptoms was only 5%. Adolescents disclosing their symptoms to school personnel were far more likely to utilize mental health services sooner, with 19% of them receiving treatment for their anxiety within the first year. These findings highlight the need for more frequent and effective screening by schools for anxiety in adolescent students.

A national survey of 6,483 adolescents aged 13 to 18 years old examined service utilization rates and reported that only 36% received treatment for their mental disorders.[18] The results showed that adolescents who received a DSM-IV diagnosis of substance abuse or dependence (15% of those diagnosed sought treatment) and anxiety disorders (18%) were less likely than all groups except eating disorders (13%) to receive treatment. Adolescents diagnosed with substance disorders (57%) or anxiety disorders (72%) who did seek help were most likely to visit their mental health provider less than six times to seek treatment for their disorder. This suggests that even the relatively small

percentage of adolescents that do receive treatment for anxiety or substance use are not receiving adequate treatment. Just as with anxiety disorders, more must be done to improve screening, increase the efficacy of treatment methods, and encourage adolescents to seek help for their substance use.

In addition to being a barrier to seeking treatment, co-occurring alcohol and anxiety disorders often interfere with effective and lasting treatment. Willinger et al. studied patients in alcohol treatment programs in order to evaluate what effect anxiety had on relapse among detoxified alcohol-dependent patients.[19] Only 71 of the patients (14.5%) did not relapse and return to uncontrolled drinking during the one year study. Willinger et al. found a significant positive relationship between patients that showed high anxiety, as measured by the trait section (STAI-X2) of the State Trait Anxiety Inventory (STAI), and a return to uncontrolled drinking within one year.

The Brief Alcohol Screening and Intervention for College Students (BASICS) is a program that reduces alcohol use and alcohol-related problems among undergraduate students. In 2011, Terlecki, Buckner, Larimer, and Copeland examined the effectiveness of BASICS in treating college students with social anxiety.[12] Participants underwent a baseline assessment of alcohol use and related problems, followed by a brief intervention using the BASICS protocol and a follow-up assessment. Data from the baseline assessments showed that individuals scoring high in social anxiety drank more alcohol on a more frequent basis. The BASICS intervention was less effective at reducing alcohol use among high anxiety subjects as compared to the low anxiety group: the high anxiety group continued binge drinking, consuming approximately twice as many drinks per occasion. These findings provide a strong basis for further research in identifying treatments that successfully identify and address co-occurring alcohol and anxiety disorders in college students.

1.3. Disclosure

Endler, Flett, Macrodimitris, Corace and Kocovski studied the relationship between anxiety and self-disclosure.[20] Subjects completed a questionnaire, answering questions about social evaluation, separation, and self-disclosure anxiety, trait ambiguous anxiety, state anxiety, self-concealment, attachment style, and socially desirable responding. The results of this study showed that self-disclosure anxiety scores were positively correlated with social anxiety scores. People suffering from social anxiety are more likely to feel anxious about self-disclosure, and to experience fear of negative evaluations resulting from disclosure, most likely contributing to them being less likely to disclose. Endler et al. conclude that self-disclosure anxiety is a particularly important topic deserving of future research, given the effect that it may have on people seeking treatment in a clinical setting where self-disclosure is required as a part of the treatment.

Hormes, Gerhardstein, and Griffin compared the confidential and anonymous disclosures of alcohol use among HIV patients.[3] Fifty-five patients in an outpatient treatment facility completed an anonymous survey answering questions about the presence of alcohol abuse from the four-item CAGE, symptoms of Generalized Anxiety Disorder (GAD) as assessed by the DSM-IV TR diagnostic criteria, as well as past use of illegal substances. Another 55 patients of the facility were randomly selected and completed the same survey, but told that the confidential results would be reviewed by mental health staff to determine the need for follow-up services. Refusal rates in both groups were approximately 60%, attributed to the lack of incentives and high rate of illiteracy of patients seen at the clinic. The two groups were comparable; the anonymous group had a mean age of 45.1 and was 30% female, with the confidential group having a mean age of 43 and 49% of them female.

The results showed that the anonymous group was more than twice as likely (29%) than the confidential group (12%) to meet the criteria for alcohol abuse. Although the results showed a higher percentage of the anonymous group (45%) met the criteria for diagnosis of GAD than the confidential group (30%), the results were not statistically significant. While the differences in reported anxiety between the two groups did not meet the criteria for significance, these results raise the possibility that subjects are less likely to report their anxiety symptoms in some situations. The difference in the information reported by the two groups suggests that external factors may affect disclosure of alcohol use. It is possible that the confidential condition elicited more anxiety, which resulted in respondents being less likely to engage in self-disclosure.

Voncken, Alden, and Bogels studied the use of safety behaviors by socially anxious people.[2] Safety behaviors are actions that are intended to hide anxiety, such as avoiding eye contact, clasping hands together to conceal trembling, or using hands to conceal blushing. Although these behaviors are intended to avoid negative evaluation, they usually result in negative responses from others. Subjects completed the Way of Thinking About Social Behavior (WTASB) questionnaire, which asks subjects to rate the interactions of people who hide their anxiety, and the Social Interaction Anxiety Scale. The results showed that even though the subjects scoring high on social anxiety were able to recognize on the WTASB that concealing anxiety led to more negative outcomes for others, and conversely admitting anxiety led to more positive outcomes, they were unable to acknowledge that admitting their own anxiety

would have beneficial results. It is possible that individuals with anxiety disorders, who also have alcohol abuse and dependence problems, are failing to disclose that information due to their fear of negative evaluation. This could pose a significant barrier to receiving help, as they may be too anxious about the perception of others to divulge their condition, thus preventing them from receiving the treatment they need.

1.4. Hypothesis

In the current study, it is hypothesized that individuals who are experiencing higher levels of state anxiety will be less likely to disclose their alcohol use, and will therefore report less alcohol consumption and alcohol-related problems than people who are experiencing lower levels of state anxiety. Due to a fear of negative evaluation, it is also hypothesized that individuals scoring higher in social anxiety will report less alcohol use and less alcohol-related problems than those who score lower in social anxiety.

2. Method

2.1. Participants

Participants were 157 undergraduate students from a small liberal arts university in California, in one of 18 classes, who were visited for the purpose of recruiting volunteers. There were 119 females (and 38 males) with a mean age of 21.47 (SD = 5.41). The low anxiety group consisted of 11 males and 44 females, the control group had 15 males and 32 females, and the high anxiety group had 12 males and 43 females.

2.2. Materials

2.2.1. six-item state anxiety scale

The Six-Item State Anxiety Scale[5] is a shortened version of the state section of the State-Trait Anxiety Inventory (STAI).[21] The measure consists of six questions that are designed to measure state anxiety, which is the anxiety that one feels in their current situation. Questions require the respondent to indicate on a four point Likert scale from 1 (Not at all) to 4 (Very much) to what extent six basic statements relating to anxiety, such as "I feel calm" and "I feel tense" (p. 306) accurately describe their current emotional state.

2.2.2. six-item social interaction anxiety scale (SIAS-6) and six-item social phobia scale (SPS-6)

The SIAS-6 and SPS-6 measure the anxiety felt by individuals during social interactions.[7] The 12 questions describe anxious reactions to hypothetical situations, and ask for the subject to indicate how much the statement, e.g. "I have difficulty making eye contact with others" (p. 76), applies to them on a five point Likert scale ranging from 0 (Not at all characteristic or true of me) to 4 (Extremely characteristic or true of me).

2.2.3. GAD-7

The GAD-7 is a brief measure for assessing generalized anxiety disorder (GAD).[8] The seven questions ask respondents to indicate on a four point Likert scale from 0 (Not at all) to 3 (Nearly every day) how often over the last two weeks they have been bothered by things such as excessive worrying, restlessness, and irritability.

2.2.4. alcohol use disorders identification test (AUDIT)

The AUDIT is comprised of ten questions that measure the subject's alcohol consumption, drinking behavior, and alcohol-related problems.[6] Subjects are asked to indicate how often they drink alcohol, how many alcoholic drinks they have on days that they consume alcohol, as well as how often they have had feelings of guilt related to drinking, failed to do what was normally expected of them due to drinking, and other related consequences experienced.

2.2.5. geneva affective picture database (GAPED)

The Geneva Affective Picture Database (GAPED) is a set of 730 photographs that is used to elicit positive and negative emotional arousal.[4] The picture set consists of positive, neutral, and negative photos; the negative photos are sub-categorized by content, with the categories being snakes, spiders, humans, and animals. Pictures used to increase anxiety included depictions of dead or suffering humans and animals, pictures used to lower anxiety included visually pleasing landscapes and happy animals, while the neutral pictures shown to the control group included inanimate objects such as chairs and light bulbs. Research by Dan-Glauser and Scherer concluded that GAPED is a valid tool for use in research requiring the induction of changed emotional states.

2.3 Procedure

Participants were recruited by visiting 10 different classes at Dominican University and asking for volunteers. Participants were randomly assigned into one of three groups: low anxiety, control, or high anxiety and received a link to a survey to be filled out on the internet. Participants viewed a group-specific set of sixteen photographs from GAPED and indicated how they felt about each photograph on a scale of 1 (Strongly dislike) to 10 (Strongly like). The low anxiety group had their anxiety reduced by viewing positive picture sets, the control group viewed neutral photos which did not affect their anxiety, and the high anxiety group viewed negative photos that raised their anxiety. After viewing and rating the photographs, each group answered identical surveys which included demographic questions about age, sex, and grade level, as well as questions measuring anxiety from the Six-Item State Anxiety Scale, the SIAS-6, the SPS-6, the GAD-7. Participants also answered questions from the AUDIT, measuring alcohol use and related problems.

3. Results

The low anxiety group had a mean baseline state anxiety score of 12.3, a post photo set state anxiety score of 11.19, and a mean AUDIT score of 5.34. The neutral group had a mean baseline state anxiety score of 11.98, a post photo set state anxiety score of 11.91, and a mean AUDIT score of 5.57. The high anxiety group had a mean baseline state anxiety score of 11.2, a post photo set state anxiety score of 15.72, and a mean AUDIT score of 5.45. For a list of the means and standard deviations of all study measures refer to Table 1.

The results do not support the original hypothesis, which predicts that subjects in the high anxiety group will report lower alcohol consumption and alcohol related problems on the AUDIT. A one way ANOVA showed that students in the high anxiety group ($n=56$, $\bar{x}=5.45$, $s=6.03$) reported AUDIT scores that were statistically equal to students in both the neutral ($n=47$, $\bar{x}=5.57$, $s=4.53$) or low anxiety groups ($n=55$, $\bar{x}=5.34$, $s=5.15$), $F(2,136)=0.02$, $MSe=28.04$, $p>.05$ (see Figure 2).

The secondary hypothesis, that students with higher levels of social anxiety will report lower alcohol consumption and alcohol related problems on the AUDIT, was partially supported. A Pearson correlation comparing social anxiety and AUDIT scores showed a negative relationship, however, the results were just above the cutoff to be considered significant ($r(137)=-.16$, $p=.057$). Upon further analysis it was found that social anxiety did have a statistically significant negative correlation with the consumption subscale of the AUDIT, $r(139)=-.17$, $p<.05$ (see Figure 3).

Examination of the responses to each measure revealed that there were four questions that had significant correlations with alcohol consumption: “I find it difficult mixing comfortably with the people I work with;” “I have difficulty talking with other people;” “Feeling nervous, anxious or on edge;” and “Worrying too much about different things.” The first two questions were from the SIAS-6 and the latter questions from the GAD-7. A Pearson correlation examining the relationship of the four identified questions with AUDIT scores showed a statistically significant negative correlation, $r(137)=-.22$, $p<.05$ (see Figure 4). Students endorsing higher levels of anxiety on these four questions were more likely to report less alcohol consumption on the AUDIT.

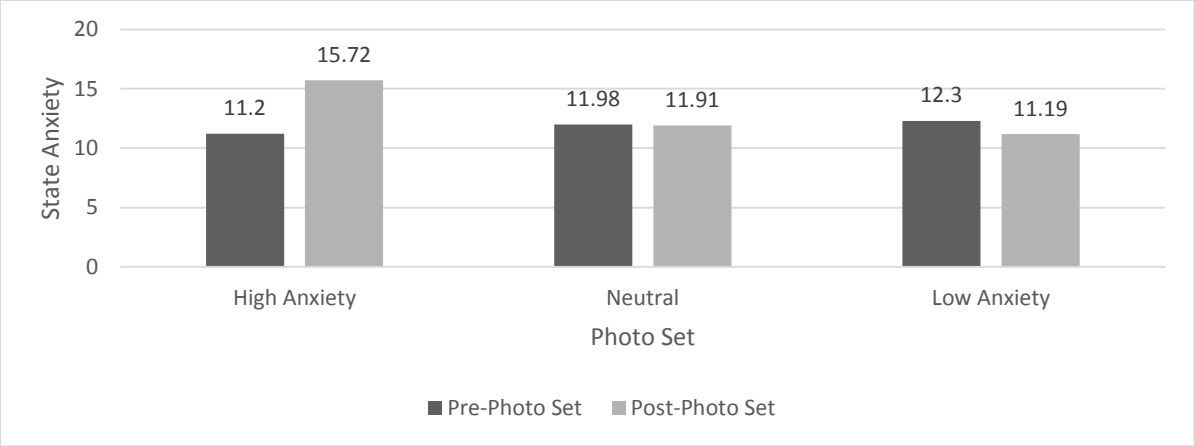

Figure 1. Mean state anxiety by photo set (F (2,147) = 4.32, MSe = 22.82, p < .05)

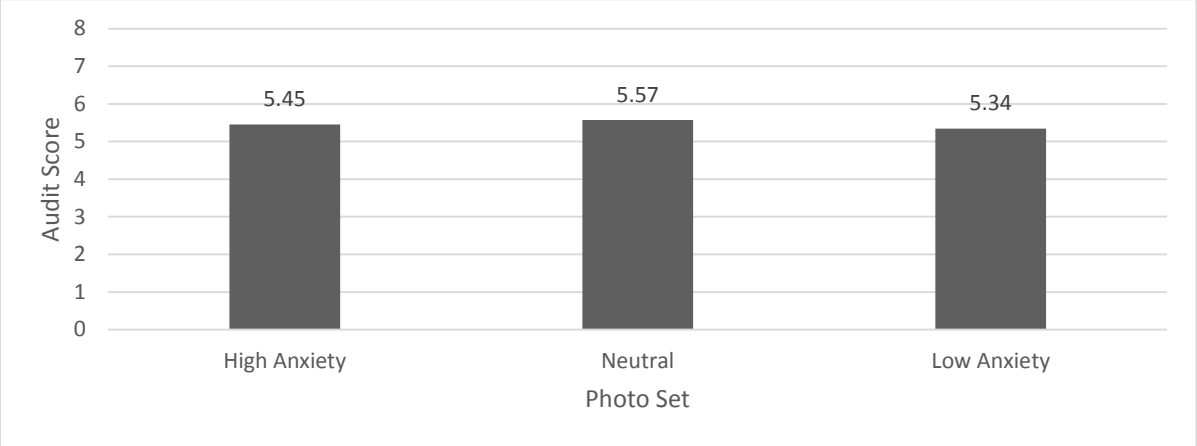

Figure 2. Mean AUDIT score by photo set (F (2,136) = 0.02, MSe = 28.04, p > .05)

Table 1. Mean Averages and Standard Deviations for Survey Measures by Group

Measure	Population		Low Anxiety		Neutral		High Anxiety	
	M	SD	M	SD	M	SD	M	SD
Baseline State Anxiety	11.81	3.63	12.30	3.72	11.98	3.52	11.20	3.62
Post Photo State Anxiety	13.00	4.25	11.19	3.64	11.91	3.96	15.72	3.76
Social Anxiety	5.39	4.28	5.27	4.22	5.55	4.73	5.37	4.02
Social Phobia	4.97	4.49	4.68	4.27	4.63	5.00	5.52	4.34
General Anxiety	14.14	4.90	14.59	4.76	14.27	4.76	13.60	5.20
AUDIT	5.45	5.26	5.34	5.15	5.57	4.53	5.45	6.03

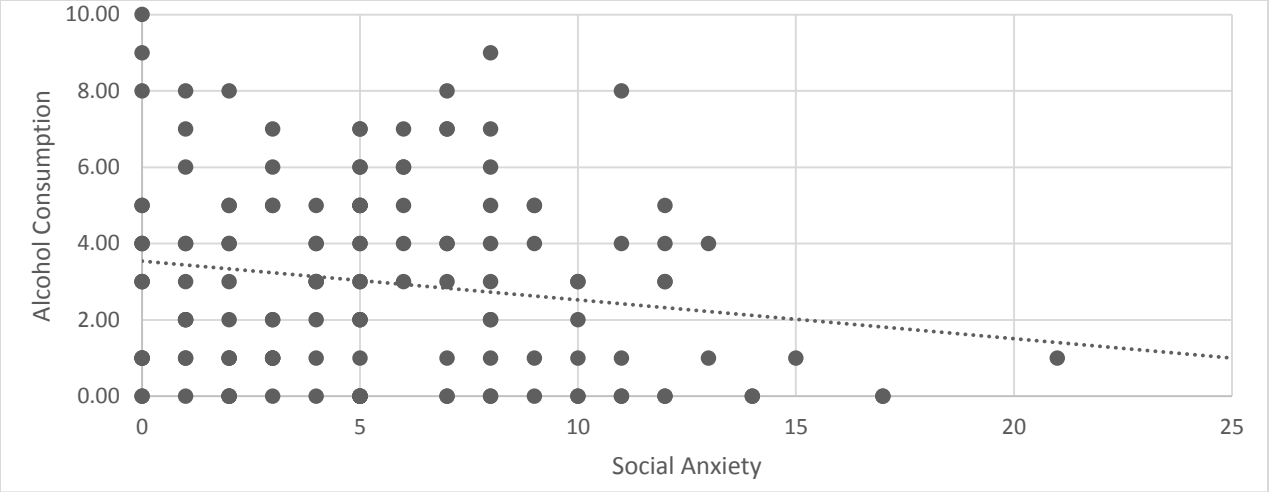

Figure 3. Social Anxiety and alcohol consumption (r (139) = -.17, p < .05)

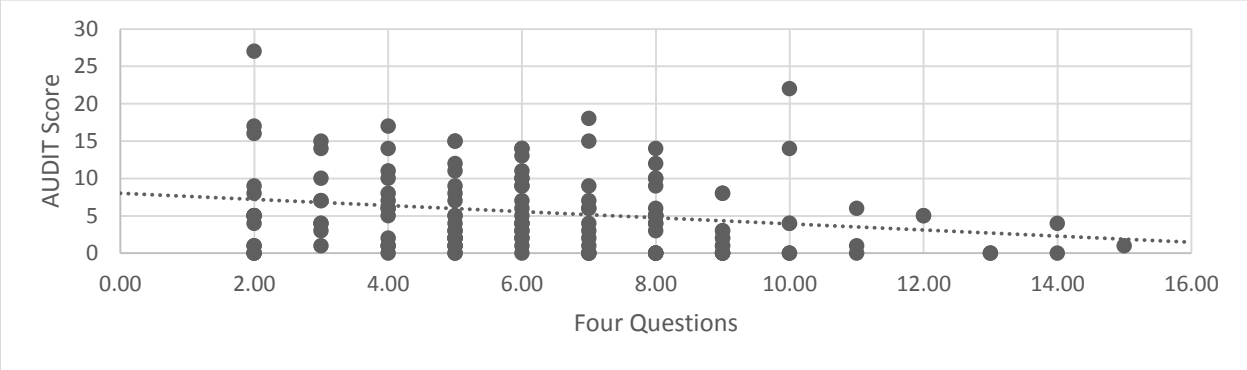

Figure 4. Selected 4 questions and AUDIT score (r (137) = -.22, p < .05)

4. Discussion

The purpose of this study was to examine the relationship between anxiety and disclosure of alcohol use, specifically to determine whether increased state anxiety would reduce disclosure of alcohol use and related problems. It was hypothesized that higher levels of state anxiety would result in lower scores on the Alcohol Use Disorders Identification Test (due to under-reporting caused by anxiety). This hypothesis was not supported: there was no significant relationship found between state anxiety and AUDIT scores.

One possible explanation for these findings is the anonymous nature of this online survey. As reported earlier, Hormes, Gerhardstein, and Griffin compared disclosures of alcohol use in confidential and anonymous surveys.[3] The researchers found that respondents were more than twice as likely to disclose alcohol use anonymously (29%) than when giving their name (12%). This study suggests that anonymity may reduce anxiety disclosure and lead to more accurate self-reporting. Another possible explanation for these findings is the relatively weak short lasting nature of the anxiety stimulus. Although the photo sets were successful in manipulating anxiety (see Figure 1), it is possible that the short term relatively low levels of anxiety elicited were not strong enough to effect disclosure.

The secondary hypothesis postulated that social anxiety would be negatively correlated with reported alcohol consumption and related problems. This hypothesis was partially supported, with the results showing a negative correlation between social anxiety and alcohol consumption. A significant relationship was not found between social anxiety and alcohol related problems. As discussed in the introduction, prior research investigating social anxiety

and alcohol use has had mixed findings. Contradictory findings have linked social anxiety to more frequent and heavier drinking[12] as well as less frequent and lighter drinking[13], with other research not finding any relationship.[14]

It was theorized that social anxiety would be negatively correlated with reported AUDIT scores due to a fear of negative evaluation. Although social anxiety was found to correlate negatively with alcohol consumption, it is possible that the lower scores accurately reflect consumption and may not be due to under-reporting. Alcohol has been shown to help anxious individuals manage their anxiety in social situations and reduce visible signs of their anxiety, resulting in higher rated interactions with others.[22] This supports the widely held theory that socially anxious people often drink to manage their anxiety. One possible alternative explanation, suggested by the four questions found to correlate negatively with AUDIT scores, is that the people reporting higher levels of anxiety avoided social situations where alcohol was present and therefor drank less often. A significant relationship was not found between social anxiety and alcohol related problems. This may suggest that although people endorsing higher levels of social anxiety reported drinking less, they are experiencing the same amount of problems as people with lower levels of social anxiety who consume more alcohol.

Co-occurring alcohol use and anxiety disorders affect a large percentage of the population and present unique barriers to treatment and recovery. Screening presents a particularly difficult challenge in these patients, who are often unlikely to disclose their symptoms.[10] In addition to being hard to diagnose, these patients also have poorer treatment outcomes, and are more likely to relapse and return to drinking.[11] As evidenced by conflicting research on the topic, much is still unknown about the relationship between anxiety and alcohol use. An important first step towards improving treatment outcomes is to increase the understanding of how anxiety effects self-disclosure. Increasing the accuracy of self-reported alcohol use by patients suffering from anxiety disorders is likely to increase proper diagnoses, and hopefully lead to more successful interventions.

Despite the finding that state anxiety had no effect on disclosure of alcohol use, this possible relationship remains an important one deserving of further study. Future research should attempt to elicit higher levels of anxiety by using a stronger stimulus, in order to investigate the possibility that higher levels of state anxiety may have an effect on disclosure. The use of a measure that provides more in depth questions about alcohol related problems, such as the Rutgers Alcohol Problem Index[23], may also be helpful in attempting to determine a relationship between anxiety and disclosure of negative drinking outcomes. In addition, anonymous respondents' disclosure of alcohol use should be compared with confidential responses in both a control group and a group that has been subjected to anxiety inducing stimuli to investigate the possibility that disclosure anxiety is mitigated when disclosures are anonymous.

5. References

1. Schneier, F.R., et al. (2010). Social anxiety disorder and alcohol use disorder co-morbidity in the National Epidemiologic Survey on Alcohol and Related Conditions. *Psychological medicine, 40*(6), 977.
2. Voncken, M.J., Alden, L.E., and Bögels, S.M. (2006). Hiding anxiety versus acknowledgment of anxiety in social interaction: Relationship with social anxiety. *Behaviour Research and Therapy, 44*(11), 1673-1679.
3. Hormes, J.M., Gerhardstein, K.R., and Griffin, P.T. (2012). Under-reporting of alcohol and substance use versus other psychiatric symptoms in individuals living with HIV. *AIDS care, 24*(4), 420-423.
4. Dan-Glauser, E.S. and Scherer, K.R. (2011). The Geneva affective picture database (GAPED): a new 730-picture database focusing on valence and normative significance. *Behavior research methods, 43*(2), 468-477.
5. Marteau, T.M. and Bekker, H. (1992). The development of a six-item short-form of the state scale of the Spielberger State—Trait Anxiety Inventory (STAI). *British Journal of Clinical Psychology, 31*(3), 301-306.
6. Saunders, J.B., et al. (1993). Development of the alcohol use disorders identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-II. *Addiction, 88*(6), 791-804.
7. Peters, L., et al. (2012). Development of a short form Social Interaction Anxiety (SIAS) and Social Phobia Scale (SPS) using nonparametric item response theory: The SIAS-6 and the SPS-6. *Psychological assessment, 24*(1), 66.
8. Spitzer, R.L., et al. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of internal medicine, 166*(10), 1092-1097.
9. Grant, B.F., et al. (2004). Prevalence and Co-occurrence of Substance Use Disorders and IndependentMood and Anxiety Disorders: Results From the National Epidemiologic Survey on Alcohol and RelatedConditions. *Archives of general psychiatry, 61*(8), 807-816.
10. McKeehan, M.B. and Martin, D. (2002). Assessment and treatment of anxiety disorders and co-morbid alcohol/other drug dependency. *Alcoholism Treatment Quarterly, 20*(1), 45-59.

11. Kushner, M.G., et al. (2005). Follow-up Study of Anxiety Disorder and Alcohol Dependence in Comorbid Alcoholism Treatment Patients. *Alcoholism: Clinical and Experimental Research, 29*(8), 1432-1443.
12. Terlecki, M.A., et al. (2011). The role of social anxiety in a brief alcohol intervention for heavy-drinking college students. *Journal of Cognitive Psychotherapy, 25*(1), 7-21.
13. Stewart, S.H., et al. (2006). Relations of social anxiety variables to drinking motives, drinking quantity and frequency, and alcohol-related problems in undergraduates. *Journal of Mental Health, 15*(6), 671-682.
14. Buckner, J.D. and Heimberg, R.G. (2010). Drinking behaviors in social situations account for alcohol-related problems among socially anxious individuals. *Psychology of Addictive Behaviors, 24*(4), 640.
15. Association, A.P. (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR®*: American Psychiatric Pub.
16. Spielberger, C.D. and Reheiser, E.C. (2009). Assessment of emotions: Anxiety, anger, depression, and curiosity. *Applied Psychology: Health and Well-Being, 1*(3), 271-302.
17. Colognori, D., et al. (2012). Self-disclosure and mental health service use in socially anxious adolescents. *School mental health, 4*(4), 219-230.
18. Merikangas, K.R., et al. (2011). Service utilization for lifetime mental disorders in US adolescents: Results of the National Comorbidity Survey–Adolescent Supplement (NCS-A). *Journal of the American Academy of Child & Adolescent Psychiatry, 50*(1), 32-45.
19. Willinger, U., et al. (2002). Anxiety as a predictor of relapse in detoxified alcohol-dependent patients. *Alcohol and Alcoholism, 37*(6), 609-612.
20. Endler, N.S., et al. (2002). Separation, self-disclosure, and social evaluation anxiety as facets of trait social anxiety. *European journal of personality, 16*(4), 239-269.
21. Spielberger, C.D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). *Manual for the state-trait anxiety inventory*. Palo Alto, CA: Consulting Psychologists Press, Inc.
22. Battista, S.R., MacDonald, D., and Stewart, S.H. (2012). The effects of alcohol on safety behaviors in socially anxious individuals. *Journal of Social and Clinical Psychology, 31*(10), 1074-1094.
23. White, H.R. and Labouvie, E.W. (1989). Towards the assessment of adolescent problem drinking. *Journal of Studies on Alcohol and Drugs, 50*(01), 30.