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Racial Discrimination and Hazardous Drinking among Black Drinkers: The Role of Social Anxiety in the Minority Stress Model

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Abstract

Objective: Black Americans who consume alcohol experience worse alcohol-related outcomes. Thus, identifying psycho-sociocultural factors that play a role in hazardous drinking among Black individuals is vital to informing prevention and treatment efforts to reduce these disparities. Racial discrimination is related to hazardous drinking among Black adults, suggesting that some may drink (and continue to drink despite drinking-related problems) to alleviate negative affect (e.g., depression, anxiety) associated with discrimination. Yet, despite the social nature of both racial discrimination and drinking, no known research has examined the role of social anxiety in the relations among racial discrimination experiences and hazardous drinking.

Method: Participants were 164 Black current drinking undergraduates.

Results: Racial discrimination was significantly, positively correlated with hazardous drinking, depression, and social anxiety. Discrimination was indirectly related to hazardous drinking via social anxiety, but not depression. Further, discrimination was indirectly related to hazardous drinking via social anxiety alone and via the sequential effects of social anxiety and drinking to cope, but not via coping motives alone. It was also related to hazardous drinking via the sequential effects of depression and drinking to cope but not depression alone. Alternative model testing indicated that social anxiety was not related to hazardous drinking via discrimination, strengthening confidence in directionality of proposed relations.

Conclusions: Negative affect (social anxiety, depression) appears to be related to hazardous drinking among those who experience more discrimination due in part to drinking to cope. Social anxiety plays an important role in the relation between discrimination and hazardous drinking among Black adults.

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Declaration of Interest

The authors report that they have no conflict of interest.

Keywords

African American; Black; drinking-related problems; social anxiety; racial discrimination; minority stress

Black¹ persons are the second largest racial minority group in the U.S., accounting for over 13% (44 million) of the population (United States Census Bureau, 2019). Black persons evince numerous health inequalities, particularly as it relates to negative consequences associated with alcohol consumption (Chartier & Caetano, 2010). To illustrate, Black individuals evince the greatest increase in average daily volume of alcohol consumed such it is approximately 41% greater than that of White drinkers (Dawson et al., 2015). Further, Black Americans are experiencing increases in drinking frequency and heavy drinking episodes at rates greater than most other racial/ethnic groups (Dawson et al., 2015). And when Black persons experience alcohol use disorder (AUD), their symptoms are more chronic than non-Hispanic/Latinx White individuals (Chartier & Caetano, 2010). The greater rates of alcohol-related problems among Black adults and significant increases in drinking frequency and quantity in this group highlights the importance of identifying contextual and sociocultural factors that play a role in alcohol-related behaviors. Such information is vital to informing theoretical models of alcohol use and related problems among Black adults that could inform treatment and prevention efforts.

Minority Stress Models

Recent work has begun to integrate self-medication-based or coping-based hypotheses of substance use (Khantzian, 2003) such as the affective processing model of negative reinforcement (Baker et al., 2004) with minority stress models (e.g., Meyer, 1995) to help guide research aimed at understanding the experience of race-related stress and trauma on negative alcohol-related outcomes in the Black community (e.g., Boynton et al., 2014; Vaeth et al., 2017). In this context, it is hypothesized that some Black individuals may drink (and continue to drink despite alcohol-related problems) in an attempt to alleviate psychological distress associated with experiences of discrimination. Meta-analytic data indicate that racial discrimination among Black individuals is positively associated with alcohol consumption, heavy/binge drinking, at-risk drinking, and drinking-related problems (Desalu et al., 2019). Racial discrimination is also positively related to developing a variety of negative substance use-related outcomes among Black individuals including increases in substance use and related problems (e.g., Clark et al., 2015; Gibbons et al., 2010; 2004), as well as a greater likelihood of meeting DSM criteria for AUD (Hunte & Barry, 2012). Notably, the relation between racial discrimination and substance use disorder remains after controlling for demographic variables and stressful life events more broadly (Hunte & Barry, 2012).

¹The term Black is used in the current paper to describe people of African ancestry. The term Black is used rather than African American to include individuals who may identify with other national origins (e.g., Bahamian, Jamaican) per the American Psychological Association (2020).

Although less studied, emerging data are beginning to support the contention that some Black individuals drink to cope with negative affect (NA) that arises after experiencing a discriminatory event, which may increase their hazardous drinking risk. To illustrate, experiences of racism are robustly related to coping-motivated drinking and to drinking-related problems among Black adults (Martin et al., 2003) and undergraduates (Pittman et al., 2019). Further, the relation between racial discrimination and alcohol-related problems was mediated by depression, such that although racial discrimination was robustly related to alcohol problems, it was indirectly related to these problems via depression (Boynnton et al., 2014). Prospectively, the relation between racial discrimination and subsequent substance use is mediated by NA (i.e., anxiety and depression) among parents and their children (Gibbons et al., 2004). Among adolescents, racial discrimination was prospectively related to subsequent NA (i.e., anxiety and depression) (Gibbons et al., 2010). Overall, these data provide partial support for the hypothesis that the associations between racial discrimination and negative drinking outcomes are partly explained by some types of NA.

Despite the social nature of racial discrimination and that drinking tends to occur in social situations (e.g., Buckner & Terlecki, 2016), little work has examined the role of social anxiety in these relations. Social anxiety is unique among conditions characterized by NA in that it is characterized by the specific fear of being negatively evaluated by other people. It theoretically follows that experiencing more racial discrimination could lead to a fear of being negatively judged by others, which in turn, could increase the likelihood of drinking to manage these fears and continued drinking despite drinking-related problems. In partial support of this hypothesis, social anxiety is related to experiencing more racial discrimination. To illustrate, among Black Americans, racial discrimination is related to greater odds of social anxiety disorder, even after accounting for variance attributable to age, sex, education, marital status, employment status, and poverty (Levine et al., 2014). Similarly, among Chinese Americans, the relation between racial discrimination and social anxiety is robust, remaining statistically significant after accounting for variance attributable to neuroticism, extraversion, and cultural variables (Fang et al., 2016), suggesting there may be a unique relation of racial discrimination to this socially-oriented type of NA. Further, social anxiety is robustly related to negative drinking outcomes (for review see Buckner, Morris, et al., 2021), including more coping-motivated drinking (e.g., Buckner et al., 2006; Buckner & Shah, 2015; Howell et al., 2016; Terlecki & Buckner, 2015).

Study Aims and Hypotheses

Thus, the current study sought to further understand minority stress-based models of drinking in several ways. First, given that little research has examined whether racial discrimination is related to more social anxiety, we sought to replicate the finding among adults with social anxiety disorder (Levine et al., 2014) that experiencing more racial discrimination would be related to greater social anxiety among alcohol using Black adults regardless of social anxiety disorder status. Second, we tested whether the relation between racial discrimination and hazardous drinking would occur indirectly via social anxiety and whether this relation would remain robust after accounting for variance attributable to depression (Figure 1), given depression is strongly related to racial discrimination (Banks et al., 2006; Brooks et al., 2020; Buckner, Glover, et al., 2021; Hudson et al., 2016).

Third, we tested whether the relations between discrimination and hazardous drinking would occur via the sequential effects of social anxiety and drinking to cope (Figure 2). Fourth, we extended prior work finding discrimination to be related to hazardous drinking via depression (Boynton et al., 2014) by testing whether the relations between discrimination and hazardous drinking would also occur via the sequential effects of depression and drinking to cope.

Methods

Participants and Procedures

The present sample is a subset of participants from a larger study of mental and physical health among college students at a large, southwestern university. As part of the larger study, participants received extra credit towards their psychology course as compensation and were recruited via flyers and postings on the extra credit website. Inclusion criteria for the larger study included being between ages 18 and 64, identifying with any racial/ethnic group except for those who identified as non-Hispanic/Latin White, and proficiency in English (to ensure comprehension of study questions). Of the 1,451 who completed the survey, 251 identified as Black or African American, 164 (82.9% female) of whom endorsed drinking in the past year on the *Alcohol Use Disorders Identification Test* (AUDIT; Saunders et al., 1993) and were thus eligible for the current study. Ages ranged from 18–48 ($M = 21.7$, $SD = 4.3$), with 42.8% under the age of 21. The majority were employed either full-time (22.6%) or part-time (40.2%). Regarding drinking behaviors, 55.5% endorsed drinking monthly or less, 32.9% 2–4 times per month, 10.4% 2–3 times per week, and 1.2% 4 or more times per week.

Measures were administered using Qualtrics. Participants provided written informed consent prior to completing the survey. The study was approved by the university's IRB prior to data collection.

Measures

Perceived Ethnic Discrimination Questionnaire—(PEDQ; Contrada et al., 2001). The PEDQ is a 22-item self-report measure designed to assess perceived racism or ethnic discrimination across racial/ethnic groups. Each item begins with the statement “Because of my ethnicity...” and is followed by a phrase describing a form of ethnic discrimination (e.g., “...others implied I must be dangerous”). Participants rated “How often have you been subjected to offensive ethnic comments aimed directly at you, spoken either in your presence or behind your back?” on a scale of 1 (*never*) to 7 (*very often*). The PEDQ has demonstrated adequate internal consistency, good reliability, and discriminant validity in ethnically diverse samples (Contrada et al., 2001) and demonstrated excellent internal consistency in the current study ($\alpha = .96$).

Alcohol Use Disorders Identification Test—(AUDIT; Saunders et al., 1993). The AUDIT is a 10-item measure of alcohol consumption, drinking behaviors, and alcohol-related problems in the past year from 0 to 4. Items were summed and the total score was used, with higher scores indicating more hazardous alcohol use. The AUDIT has

demonstrated adequate psychometric properties when used with Black samples (e.g., Cherpitel & Bazargan, 2003; Pittman et al., 2019) and demonstrated good internal consistency in the current study ($\alpha = .85$).

Coping Motives Scale of the Drinking Motives Questionnaire Revised Short Form—(DMQ-R SF; Kuntsche & Kuntsche, 2009). The DMQ-R SF is a shorter version of the self-report measure, the Drinking Motive Questionnaire Revised (DMQR; Cooper, 1994) on which items are rated on a scale of 1 (*never*) to 3 (*almost always*). The three items of the coping motives subscale were summed and used to assess drinking to cope with negative affect. The coping motives subscale has demonstrated adequate internal consistency in prior work (Harbke et al., 2017; Smith et al., 2018) and in our sample ($\alpha = .86$).

Affect.—The 20-item general depression (e.g., “I felt depressed”) and the 5-item social anxiety (e.g., “I was worried about embarrassing myself socially”) subscales of the *Inventory of Depression and Anxiety Symptoms* (IDAS; Watson et al., 2007) assessed these constructs over the past two weeks, including today. IDAS items were rated from 1 (*not at all*) to 5 (*extremely*). These subscales demonstrate good convergent and discriminant validity with diagnoses of major depressive disorder and social anxiety disorder, respectively (Watson et al., 2008). The depression ($\alpha = .90$) and social anxiety ($\alpha = .90$) subscales demonstrated excellent internal consistency in the current sample.

Data Analytic Strategy

Analyses were conducted in SPSS 26. First, zero-order correlations among study variables were examined. Second, a multiple mediator model (see Figure 1 for illustrative example) was conducted to test whether experiencing more discrimination was associated with more hazardous drinking indirectly via social anxiety and/or depression. Next, two serial multiple mediator model tested the impact of social anxiety or depression and drinking to cope with NA as mediators of the relation between racial discrimination and hazardous drinking (Figures 2 and 3). Hayes (2013) describes this type of model as a serial multiple mediator model, in which the independent variable can impact the dependent variable through four pathways: directly and/or indirectly via social anxiety/depression only, via coping motives only, and/or via both sequentially, with social anxiety/depression impacting coping motives. Although mediation models are ideally tested using prospective data, cross-sectional tests of putative indirect effects can be an important first step (Hayes, 2018). This analysis was conducted using PROCESS, a conditional process modeling program that utilizes an ordinary least squares-based path analytical framework to test for both direct and indirect effects (Hayes, 2018). All specific and conditional indirect effects were subjected to follow-up bootstrap analyses with 10,000 resamples from which a 95% confidence interval (CI) was estimated (Hayes, 2009; Preacher & Hayes, 2004, 2008). Four participants were missing data concerning racial discrimination; thus analyses using this variable were conducted with 160 participants. Bias-corrected bootstrapping is the most powerful method for testing this type of model with smaller sample sizes; moderate to large effect sizes can be observed with samples smaller than the current sample (Fritz & Mackinnon, 2007) and power analyses (Schoemann et al., 2017) indicate that our sample is sufficient to achieve power of .80 to test the hypothesized serial relations.

Results

Correlations among Study Variables

Means, standard deviations (*SD*), and bivariate correlations among study variables appear in Table 1. Experiences of racial discrimination were significantly, positively correlated with hazardous drinking, depression, and social anxiety. Hazardous drinking was also significantly correlated with depression, social anxiety, and coping motives. Depression and social anxiety were both significantly correlated with coping motives.

Mediation Models

The full model with depression and social anxiety as the putative mediators significantly predicted hazardous drinking severity, $R^2 = .17$, $F(3, 156) = 10.73$, $p < .001$ (Figure 1). When entered simultaneously, racial discrimination and social anxiety (but not depression) remained significantly correlated with hazardous drinking severity. Discrimination frequency was related to hazardous drinking severity indirectly via social anxiety, $b = .008$, $SE = .005$, $95\% CI: [.0003, .0194]$, but not depression, $b = .002$, $SE = .003$, $95\% CI: [-.0047, .0077]$.

Given the limitations of testing mediation using cross-sectional data, we tested an alternative temporal pattern – that social anxiety may lead to more racial discrimination which in turn could result in more hazardous drinking. Depression was included as a covariate to account for shared variance. This indirect effect was not significant, $b = .008$, $SE = .018$, $95\% CI: [-.028, .046]$, strengthening confidence in directionality of proposed relations that discrimination may lead to social anxiety which in turn may result in more hazardous drinking.

Sequential Mediation Model

We tested whether the relation of racial discrimination and hazardous drinking occurred via the sequential effects of social anxiety and drinking to cope (Figure 2). The full model with predictor and putative mediators predicted statistically significant variance in hazardous drinking severity, $R^2 = .24$, $F(3, 156) = 15.99$, $p < .001$, and all predictor variables remained significantly related to hazardous drinking. Racial discrimination was indirectly related to more hazardous drinking via social anxiety alone, $b = .006$, $SE = .004$, $95\% CI: [.0002, .0148]$, and via the sequential effects of social anxiety and coping motives, $b = .003$, $SE = .002$, $95\% CI: [.0001, .0070]$, but not via coping motives alone, $b = .003$, $SE = .004$, $95\% CI: [-.005, .010]$.

We next tested whether the relation of racial discrimination and hazardous drinking occurred via the sequential effects of depression and drinking to cope (Figure 3). The full model with predictor and putative mediators predicted statistically significant variance in hazardous drinking severity, $R^2 = .20$, $F(3, 156) = 13.01$, $p < .001$, and discrimination and coping motives, but not depression, remained significantly related to hazardous drinking. Racial discrimination was indirectly related to more hazardous drinking via the sequential effects of depression and coping motives, $b = .006$, $SE = .003$, $95\% CI: [.0009, .0126]$, but not via

depression, $b = .003$, $SE = .003$, $95\% CI: [-.0029, .0094]$, or coping motives alone, $b = .001$, $SE = .004$, $95\% CI: [-.0081, .0085]$.

Discussion

This is the first known study of the test of the role of social anxiety on the relation between racial discrimination experiences and hazardous drinking among Black alcohol users. Consistent with hypotheses and with prior work in other samples (e.g., Fang et al., 2016; Levine et al., 2014), experiencing more racial discrimination was significantly correlated with greater social anxiety in our sample of alcohol using Black adults. The current study extends that literature by determining that the relation between racial discrimination and hazardous drinking occurred indirectly via social anxiety; this relationship remained after accounting for variance attributable to depression. In fact, the relation between discrimination and hazardous drinking did not occur indirectly via depression after accounting for social anxiety, suggesting that social anxiety may be an especially important affect-related variable to consider in models of discrimination's impact on hazardous drinking.

Another notable contribution of this study is that this is the first known test of the serial impact of NA and coping motivated drinking on the relation of racial discrimination and hazardous drinking. We found that the relations between discrimination and hazardous drinking occurred indirectly via social anxiety even after accounting for variance attributable to coping motivated drinking, and that the relation between discrimination and hazardous drinking also occurred via the sequential effects of social anxiety and drinking to cope. Further, results extend prior work indicating that the relation between discrimination and hazardous drinking occurs indirectly via depression, presumably via drinking to manage depression (Boynton et al., 2014), by testing that hypothesis and determining that in support of that hypothesis, the relation between discrimination and hazardous drinking also occurred via the sequential effects of depression and drinking to cope. Together, these findings indicate that NA plays an important role in these relations at least in part due to drinking to cope with these types of NA. This is especially important given that episode-specific coping motives are related to more alcohol consumption among Black young adults (O'Hara et al., 2014).

Findings have important clinical implications. First, as experiences of racial discrimination and social anxiety were significantly related to hazardous drinking severity, clinicians working with Black clients endorsing alcohol use may consider assessing and addressing the impact of racial discrimination to determine whether the Engaging, Managing, and Bonding through Race (EMBRace) intervention (Anderson et al., 2019) may be useful. The EMBRace intervention was designed to combat instances of racial discrimination, stress, and trauma via teaching Black families about helpful techniques to minimize the negative effects of racial distress (Anderson et al., 2019). Pilot data demonstrate that EMBRace may increase psychological wellbeing, including during experiences of increased racial stress among Black adolescents (Anderson et al., 2018). Second, given that racial discrimination and hazardous drinking were indirectly related via the sequential effects of social anxiety and drinking to cope, clinicians may also consider teaching patients more effective means

to manage social anxiety than drinking, such as cognitive behavioral skills to manage social anxiety (Hope et al., 2010).

Findings should be considered in the context of some limitations of the study design. First, data were correlational; although we tested an alternate model of the proposed relations, prospective and experimental work will be an important next step to determine causality. Second, data were collected using retrospective self-reports, and future work could benefit from multi-method (e.g., ecological momentary assessment of in vivo relations among racial discrimination and drinking behaviors, biological verification of drinking), multi-informant (e.g., collateral reports of drinking behaviors) approaches. Third, the sample was predominantly female, all participants were in college psychology courses, and participants were those seeking extra credit in these courses; thus, future work is necessary to test whether results generalize to men, other age groups, those who do not chose to participate in extra credit activities, and those with other educational backgrounds, including those who do not take psychology courses. Future work may also consider whether results vary as a function of age, sex, etc. Fourth, the sample was non-treatment-seeking, and future work is necessary to test whether results generalize to those meeting criteria for AUD as well as to test the impact of these variables on the course of treatment. Fifth, the current study focused on social anxiety given the social nature of racial discrimination; however, future work could benefit from testing whether observed relations are specific to social anxiety or also occur for other types of anxiety. Despite these limitations, results highlight the important role of social anxiety in theoretical models of minority stress-based models of hazardous drinking among Black drinkers.

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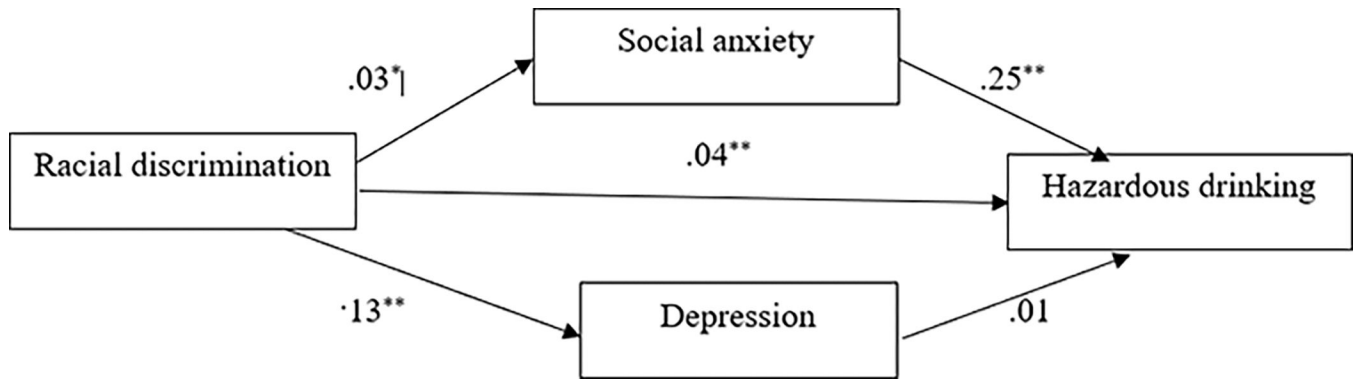


Figure 1. Hypothesized mediation model of the indirect effect of racial discrimination on hazardous drinking via social anxiety and/or depression. * $p < .05$, ** $p < .01$, *** $p < .001$

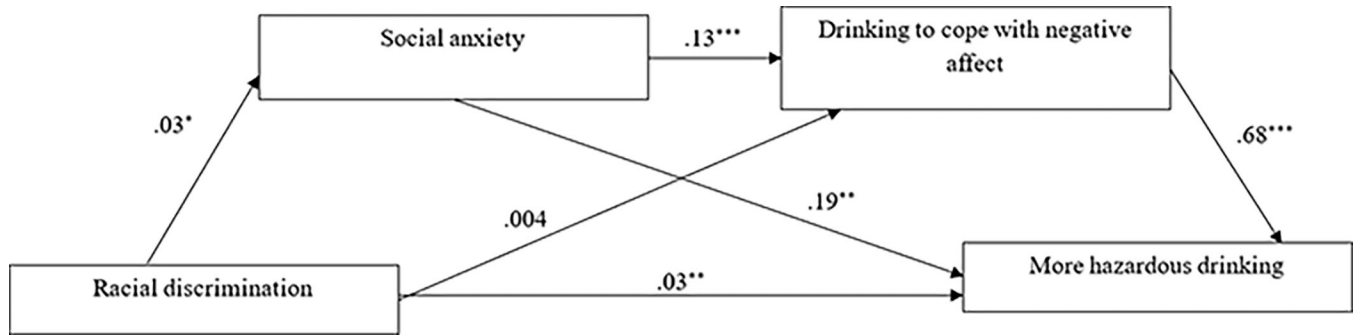


Figure 2. Hypothesized mediation model of the indirect effect of racial discrimination on hazardous drinking via the sequential effects of social anxiety and drinking to cope. * $p < .05$, ** $p < .01$, *** $p < .001$

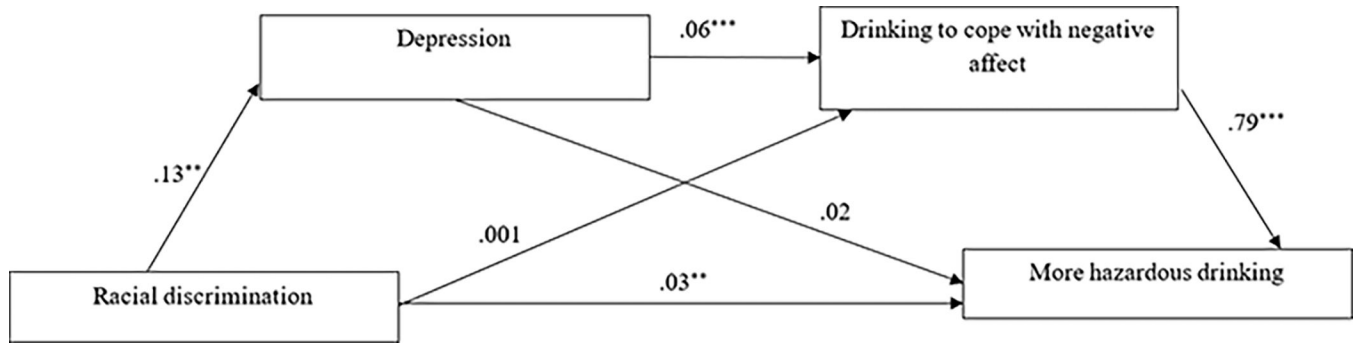


Figure 3. Hypothesized mediation model of the indirect effect of racial discrimination on hazardous drinking via the sequential effects of depression and drinking to cope. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 1

Means, standard deviations, and correlations among study variables

	1	2	3	4	5	<i>M</i>	<i>SD</i>
1. Racial Discrimination	-					60.78	27.61
2. Hazardous Drinking	.27**	-				4.88	4.46
3. Depression	.24**	.26**	-			47.83	14.45
4. Social Anxiety	.17*	.34**	.62**	-		10.12	5.15
5. Drinking to Cope	.13	.36**	.46**	.37**	-	4.68	1.87

Note.

* $p < .05$.** $p < .01$.