SHAME, GUILT, AND DRINKING-TO-COPE AS MEDIATORS BETWEEN CHILD MALTREATMENT AND PROBLEMATIC ALCOHOL USE IN COLLEGE STUDENTS

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ABSTRACT

SHAME, GUILT, AND DRINKING-TO-COPE AS MEDIATORS BETWEEN CHILD MALTREATMENT AND PROBLEMATIC ALCOHOL USE IN COLLEGE STUDENTS

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Drinking for emotion regulation may be a particular concern for college students who have experienced childhood maltreatment due to difficulty tolerating high levels of trauma-related shame and guilt. While shame-proneness has been associated with higher levels of problematic alcohol use through more drinking-to-cope, guilt-proneness is inversely related. The relations of shame and guilt to drinking outcomes have not been explored among trauma-exposed samples, and it is believed that trauma-related guilt may function more like shame-proneness than guilt-proneness. The present study tested how shame-proneness, guilt-proneness, and trauma-related guilt are differently related to drinking motives and, in turn, how this pathway relates to drinking behaviors and alcohol-related consequences in individuals who have experienced childhood maltreatment. In a sample of 252 undergraduates with maltreatment experiences and alcohol use, bootstrapped estimations revealed significant serial indirect effects of childhood maltreatment on alcohol use through trauma-related guilt and subsequent drinking-to-cope and through shame-proneness and subsequent drinking-to-cope, but not through guilt-proneness and subsequent drinking-to-cope. There were also significant serial indirect effects of childhood maltreatment on alcohol use-related consequences

through trauma-related guilt and subsequent drinking-to-cope and through shame-proneness and subsequent drinking-to-cope, but not through guilt-proneness and subsequent drinking-to-cope. As predicted, trauma-related guilt was found to function similarly to shame-proneness within this sample. Thus, on college campuses, in order to prevent the development of alcohol use disorders among childhood maltreatment survivors, interventions should target maladaptive feelings of shame and guilt.

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INTRODUCTION

Problematic drinking is common in college-aged populations. Findings from the 2018 National Survey on Drug Use and Health (NSDUH) showed that 34.9% of the U.S. population ages 18-25 reported participating in binge drinking, defined as 4 or more drinks for women and 5 or more drinks for men in a 2-hour period. Approximately 9% of 18-25-year olds reported heavy drinking, defined as binge drinking at least 5 times in the past 30 days (Substance Abuse and Mental Health Services Administration, 2018). Research shows that young adults drink for many reasons such as mood enhancement, social facilitation, conformity, and to cope with negative emotions. Among those motives, drinking-to-cope was most strongly associated with alcohol-related problems (Kuntsche et al., 2005). For this age range, such drinking-to-cope motives are related to higher levels of alcohol consumption, more episodes of heavy drinking, higher rates of alcohol-related consequences, and problematic drinking habits following graduation (Baer, 2002; Gaher et al., 2006; Neighbors et al., 2007; Park & Levenson, 2002; Read, et al., 2003; Simons et al., 2005; Vernig & Orsillo, 2015). The high associations between drinking-to-cope and problematic outcomes might be due the lack of alternative emotion regulation strategies. It is found that among college students and non-college adults, negative affect intensity has indirectly predicted drinking to cope through emotion dysregulation domains including lack of emotional clarity and limited emotional strategies (Veilleux et al. 2014).

Drinking-to-cope may be a particular concern for college students who have

experienced childhood maltreatment (i.e., physical, sexual and/or emotional abuse; physical and/or emotional neglect). Exposure to childhood maltreatment heightens risk for difficulties in emotion regulation (Dvir et al. 2014; Heleniak et al., 2015), and for a wide range of associated biological, psychological, and social impairments later on in life (Dvir et al. 2014; Heleniak et al., 2015), including alcohol-related problems (Dube et al, 2006; Gilbert et al., 2009; Najavits et al., 1997; Shin et al., 2019). More specifically, exposure to childhood maltreatment is often associated with problematic drinking (Cross et al., 2015; Kendler et al., 2000), including alcohol dependence (Elliott et al., 2014; Mullings et al., 2004; Schwandt et al., 2013; Young-Wolff et al., 2011), earlier age of drinking onset (Hamburger et al., 2008), and negative consequences resulting from drinking alcohol (Asberg & Renk, 2012; Ireland & Widom, 1994). A longitudinal study examining heavy episodic drinking (HED) patterns among adolescents found that childhood emotional and physical neglect and physical abuse were associated with faster increases in HED during adolescence and with persistently elevated HED levels in young adulthood (Shin et al., 2013).

Consistent with the aforementioned drinking motives research, problematic drinking in maltreatment survivors may serve to modulate unpleasant emotions, cognitions, and memories that are associated with traumatic experiences (Collins & Collins, 2005; Leeies et al., 2010; Robinson et al., 2011). A longitudinal study found emotional abuse in childhood to be associated with negative emotionality in young adulthood, which then predicted alcohol-related problems through coping-with-depression drinking motives 5 years later (Mezquita et al., 2014). This developmental pathway from childhood maltreatment to alcohol abuse may be different for male and

female survivors. Although men generally have been consistently shown to be at greater risk for increased drinking and associated problems as compared to women (Korcuska & Thombs, 2003; Randolph et al., 2010), women report more depressive symptoms (Piccinelli & Wilkinson, 2000) and are more likely to drink to cope than men (Hussong, 2007; LaBrie et al. 2012; Rice & Van Arsdale, 2010). In a sample of college student drinkers with a history of child maltreatment, enhancement motives, or drinking to feel good, mediated the relation between childhood abuse and alcohol consequences in men, whereas coping-depression motives mediated this relation for women (Goldstein et al., 2010). However, few other studies have examined drinking motives as mediators between childhood maltreatment and drinking outcomes in college students and the present study aims to fill in this research gap.

Another gap in the literature involves understanding how guilt and shame may mediate this relationship between childhood maltreatment and drinking outcomes through drinking-to-cope. Childhood maltreatment survivors may be more likely to experience certain negative emotions, including guilt and shame, that might help explain alcohol related behaviors (Stuewig & McCloskey, 2005). Guilt and shame are two negative self-conscious emotions that are differentially related to drinking outcomes in the general population (Tangney & Fischer, 1995). Guilt and shame are both emotions of negative appraisal, yet are distinct constructs; shame is thought to be the result of a negative evaluation of the self, whereas guilt results from negative evaluations of an individual's specific behaviors (Tangney & Dearing, 2002).

Shame is a moral emotion defined by general feelings of inferiority and worthlessness, which may lead to avoidant tendencies and therefore can be maladaptive

(Tracy & Robins, 2004). Shame-proneness, or the degree to which people experience shame across a range of situations, as measured by the Test of Self-Conscious Affect (TOSCA), has been associated with psychological and social maladjustment (Covert et al., 2003). Shame-proneness has also been associated with an increased tendency to withdraw or hide from the public (Cohen et al., 2011; Puengtum & Blauw, 2018) and has been linked to decreased prosocial behavior (Roos et al., 2014) such that shame-prone individuals may be more likely to avoid facing consequences for perceived mistakes (Tangney & Dearing, 2002). With regard to drinking, shame-proneness has been positively associated with drinking as a means of down-regulating anxiety and depression, for mood enhancement purposes, and for reasons of conformity (Treeby & Bruno, 2012). Additionally, higher levels of shame-proneness were related to increased alcohol use through negative urgency (i.e., acting impulsively in response to negative affect) and impaired control over drinking behavior (Abramowitz & Berenbaum, 2007; Patock-Peckham et al., 2018).

While shame-proneness is associated with higher levels of problematic alcohol use, guilt-proneness, or the degree to which people experience guilt across a range of situations, is inversely related to problematic drinking behaviors (Luoma et al., 2017; Treeby & Bruno, 2012). Generally, guilt is an emotion defined by situation-specific regret and remorse, and guilt-prone individuals may be more likely to apologize or make attempts to repair damage in the specific situations for which they feel responsible (Tracy & Robins, 2004). Therefore, guilt-proneness is generally thought to be adaptive in nature compared to shame-proneness, when it is appropriate and not experienced in excess. In fact, guilt-proneness has been linked with an array of positive attributes, including self-

control and interpersonal adjustment (Covert et al., 2003), multiple dimensions of self-efficacy (Passanisi et al., 2015), less delinquent behavior and aggression (Stuewig & McCloskey, 2005; Roos et al., 2014), and more prosocial behavior and interpersonal repair tendencies (Roos et al., 2014; Puengtum & Blauw, 2018). In relation to alcohol behaviors, higher guilt-proneness was associated with fewer alcohol-related problems because it was associated with both less negative urgency (i.e., acting less impulsively in response to negative affect) and less impaired control, or more self-control related to drinking (Patock-Peckham et al., 2018). Guilt-proneness has also been negatively correlated with both drinking to cope with depression symptomatology and drinking for mood enhancement (Treeby, & Bruno, 2012). Guilt-proneness has been positively associated with adaptive changes in heavy drinking over time (Dearing et al., 2013).

It is clear that trait-level shame-proneness and guilt-proneness have differing effects on alcohol use within the general population. However, shame and guilt may function differently when these emotions arise in the context of childhood maltreatment, in part due to the timing of their emergence. Emotional reactions of shame and guilt can first be observed around the age of three, and they continue to develop across the life span to shape an individual's sense of self and ability to navigate social environments (Tangney, 2012). Shame and guilt arise from various negative social situations and, when experienced in excess, can have maladaptive effects on emotion regulation (Tangney & Fischer, 1995). For childhood maltreatment survivors, trauma-related guilt is often associated with actions or perceived action failures during and after a traumatic event, whereas trauma-related shame reflects how the individual feels about the self during or after a traumatic event (Lee et al., 2001). Experiencing childhood maltreatment may

foster feelings of inadequacy or lack of belongingness early in a child's life, and thus may lead to maladaptive levels of shame, which can then lead an individual to be more prone to experience shame in other situations as well (Alessandri &Lewis, 1996; Bennett et al. 2005; Stuewig & McCloskey, 2005; Zahn-Waxler et al. 1990). While maltreatment has been associated with shame-proneness, it has not been associated with guilt-proneness (Bennett et al., 2010; Ellenbogen et al., 2015; Webb et al., 2007).

Shame-proneness may mediate poor outcomes for maltreatment survivors (Bennett et al., 2010; Ellenbogen et al., 2015; Lee et al., 2001; Platt & Freyd, 2012; Webb et al., 2007). One study found that emotional abuse in childhood predicted shame-proneness, which was associated with self-criticism, which in turn predicted social anxiety symptoms (Shahar et al., 2015). Other studies have found that children exposed to neglect or psychological maltreatment reported more shame-proneness, which was associated with higher levels of depression (Bennet et al., 2010; Stuewing & McCloskey, 2005). Gender has been found to moderate the relation between childhood maltreatment, shame-proneness, and adult outcomes; among women, more shame was associated with higher depression, whereas for adult men, it was associated with more anger (Harper & Arias, 2004).

While trauma-related shame among survivors is associated with maladaptive levels of shame-proneness, it is unclear whether trauma-related guilt maps on to the somewhat more adaptive trait of guilt-proneness. Traumatic events may be more guilt-inducing than other types of experiences. For instance, even individuals with low levels of guilt-proneness rated hypothetical traumatic scenarios as strongly guilt-evoking compared to common, everyday situations (Kubany et al., 2000). Strong evidence for the

relation between trauma-related guilt and later shame-proneness suggests that, particularly in survivors of childhood maltreatment, guilt may not always be adaptive. In Kubany and Watson's (2003) model of trauma-related guilt, when there is distress about a traumatic event, negative guilt cognitions can form. Such negative guilt appraisals may be related to beliefs about one's role in the event such as perceived responsibility, insufficient actions taken, violation of values, and an inability to prevent its occurrence (Kubany & Watson 2003). These appraisals of situation-specific guilt, if left unchallenged, can then change into shame cognitions regarding one's entire self. Those individuals who make an effort to avoid dealing with these emotions may have an increase in trauma-related guilt and shame (Fisher & Exline, 2010; Kubany & Watson, 2003), while those who work through their guilt with forgiveness and reappraisal have been found to experience less shame as a result (Fisher, 2008). For child maltreatment survivors who experience trauma-related guilt, these feelings can turn into shame, which may be associated with avoidant coping strategies that prevent them from processing their traumatic experiences in a healthy way (Dearing & Tangney, 2011; Feiring & Taska, 2005). This theory was supported by Held et al. (2015), who found that trauma-related guilt was significantly related to both trauma-related shame and the use of emotion-focused disengagement coping strategies. Guilt, therefore, might be multifaceted and may have adaptive or maladaptive effects in relation to alcohol behaviors, depending on the situation and population being considered (Dempsey, 2017).

Present Study

The present study aims to examine how shame-proneness, guilt-proneness, trauma-related guilt and the motive of drinking-to-cope mediate the relation between

childhood maltreatment and problematic alcohol use in college students. Guilt-proneness is generally thought to be a protective factor against negative drinking outcomes, whereas shame-proneness may elicit a desire to drink-to-cope with negative emotions and engage in more problematic drinking (Held et al., 2015). Childhood maltreatment has been found to be associated with shame-proneness (Bennett et al., 2010), and guilt in the aftermath of childhood maltreatment is associated with shame-proneness (Kubany & Watson, 2003), thus there is reason to believe that trauma-related guilt will function more like shame-proneness in relation to drinking behaviors (Dearing & Tangney, 2011; Tangney & Dearing, 2002). Therefore, it could be dangerous to treat trauma-related guilt like guilt-proneness in child maltreatment survivors. No previous studies have compared the roles of these self-conscious emotions in predicting alcohol-related outcomes in the context of childhood maltreatment experiences or childhood maltreatment severity, nor have studies compared trauma-related guilt to guilt-proneness and shame-proneness with respect to drinking outcomes. Thus, the present study sought to replicate, in college students, the negative impact of shame on drinking behaviors and demonstrate how shame and different forms of guilt may have adaptive or maladaptive effects on drinking-to-cope motives and related alcohol consequences. By identifying students who might be at greater risk for alcohol misuse and related consequences, college campuses can focus on intervention techniques that might specifically target these vulnerable individuals. Such interventions might work to prevent the development of alcohol use disorders and help childhood maltreatment survivors work through maladaptive feelings of shame and guilt.

Hypotheses. In accordance with prior research findings, the following specific hypotheses were made (see Figures 1 and 2).

Hypothesis 1: Severity of childhood maltreatment will be positively associated with both alcohol consumption and alcohol-related consequences.

Hypothesis 2: There will be a positive indirect effect of severity of childhood maltreatment on both alcohol consumption and alcohol-related consequences through trauma-related guilt and drinking-to-cope. In other words, higher maltreatment exposure will lead to more trauma-related guilt, which in turn will lead to more drinking-to-cope, which will subsequently predict more alcohol consumption and alcohol-related consequences.

Hypothesis 3: There will be a positive indirect effect of severity of childhood maltreatment on alcohol consumption and alcohol-related consequences through shame-proneness and drinking-to-cope. In other words, higher maltreatment exposure will lead to more shame-proneness, which in turn will lead to more drinking-to-cope, which will subsequently predict more alcohol consumption and alcohol-related consequences.

Hypothesis 4: While guilt-proneness is expected to have a negative effect on drinking-to-cope, there will be no significant indirect effect of childhood maltreatment on alcohol consumption and alcohol-related consequences through guilt-proneness and drinking-to-cope.

METHOD

Participants

Participants were 252 undergraduate students from a mid-sized private Midwestern university. Participants were representative of the student population from which they were drawn. By self-report, 81.3% identified as non-Hispanic white, 6.0% as African American, 3.6% Hispanic or Latino, 1.2% Asian or Asian American, 0.4% American Indian or Alaskan Native, 5.6 % another race, and 2.0% wished not to answer. With regard to gender, 75.4.% identified as women, 23.8% as men, and 0.8% wished not to answer. The mean age was 19.21 years (*SD* = 1.24, *range* = 17 - 29). Socioeconomic status (SES) was assessed in two ways: family annual household income and parental education, which was assessed by asking for both parents' education level and creating a variable for highest education achieved from either parent in the household. With regard to income, 22.6% reported $160,000+, 12.7% reported $120,000-$160,000, 19.4% reported $80,000-$120,000, 10.7% reported $40,000-$80,000, 4.8% reported $0-$40,000, 25.4% reported they did not know their family income, and 4.4% wished not to answer. Due to the significant portion of participants that did not know family income or declined answering, the validity of this question to assess SES is unclear. With regard to parental education, when considering the highest degree reported, 41.3% reported graduate degree, 44.4% bachelor's degree; 4.4% associate's degree, 7.9% high school graduate, 0.8% less than high school, and 1.2% wished not to answer. The sample reported lower rates of childhood maltreatment exposure and severity compared to other college student samples (e.g., Goldstein et al., 2010; Reichert & Flannery-Schroeder, 2014). For

childhood maltreatment exposure, using cut-off scores indicative of low to moderate maltreatment established for the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 2003), 26.9% reported emotional abuse, 10.2% physical abuse, 9.6% sexual abuse, 26.6% emotional neglect, and 21.1% physical neglect.

Procedure

Participants were recruited from a psychology department participant pool and completed measures using a secure online platform in exchange for partial course credit. They provided informed consent electronically, after which they completed a battery of self-report questionnaires and were then debriefed with study details and resources, including the campus student counseling center. Study completion took approximately one hour. Procedures were approved by the department's Research Review and Ethics Committee.

Measures

Demographics. A demographic questionnaire was given containing questions asking about gender, age, and race/ethnicity, parental education, and household income. These questions were administered in order to determine background information and individual difference data. The demographics questionnaire was developed by the researchers for this study and does not have established psychometric properties.

Childhood maltreatment. The short form of the Childhood Trauma Questionnaire (CTQ-SF; Bernstein et al., 2003) was adapted from the original CTQ (Bernstein et al., 1994) and is a 28-item self-report inventory that assesses, retrospectively, five subscales of childhood maltreatment (emotional, physical, and sexual abuse and emotional and physical neglect) and also contains a 3-item

minimization/denial validity scale to detect underreporting. A five-point Likert scale is used with responses from 1 (*never true*) to 5 (*very often true*), in which higher overall and subscale scores indicate a greater severity of maltreatment. Bernstein et al. (2003) reported good internal consistency for each of the subscales, including adolescents and substance abusing samples (subscale α's range from .68-.95). The present study also had good internal consistency when using the total score, α = .91.

Trauma-related guilt. The Trauma-Related Guilt Inventory (TRGI, Kubany et al., 1996) is a 32-item questionnaire that assesses cognitive and emotional aspects of guilt associated with a specific traumatic event, in this study items were anchored to the respondent's childhood maltreatment. The TRGI includes a Global Guilt scale (e.g., "I experience intense guilt related to what happened"), a Distress scale (e.g., "I am still distressed about what happened"), and a Guilt Cognitions scale. The Guilt Cognitions scale encompass Hindsight Bias/Responsibility (e.g., "I should have known better," "I blame myself for something I did, thought, or felt"), Wrongdoing (e.g., "I did something that went against my values"), and Lack of Justification (e.g., "What I did was completely justified"). Respondents rated the frequency of occurrence for each response on a five-point scale from 1 (*extremely or always true*) to 5 (*not at all or never true*). Higher scores indicate greater guilt levels for each subscale. The TRGI has high internal consistency with α = .90, .86, and .86, for the Global Guilt, Guilt Cognitions, and Distress scales, respectively, and adequate temporal stability (Kubany et al., 1996). In validity studies with veterans of the Vietnam War and women survivors of intimate partner violence, TRGI scales and subscales were significantly correlated with other measures of guilt and with measures of posttraumatic stress disorder, depression, and

poor adjustment (Kubany et al., 1996). In the present study, only the Global Guilt scale was used; α = .83.

Guilt- and shame-proneness. The Test of Self-Conscious Affect-3 (TOSCA-3: Tangney et al., 2000) assesses shame-proneness, guilt-proneness, externalization, and detachment/unconcern. For the purposes of the present study, only the shame-proneness and guilt-proneness subscales of the TOSCA-3 were used. Respondents were presented with 11 negative scenarios they may encounter in daily life such as, "At work, you wait until the last minute to plan a project, and it turns out badly''. The response options that follow this scenario are ''You would feel incompetent'' (shame response), or ''I deserve to be reprimanded for mismanaging the project'' (guilt response). Respondents were required to rate their likelihood of each response on a five-point scale from 1 (*not likely*) to 5 (*very likely*). Higher subscale scores indicate a greater degree of shame or guilt. Tangney and colleagues reported good internal consistency, α = 0.88 for the shame-proneness and α = 0.86 for the guilt-proneness scale (Tangney & Dearing, 2002). With respect to validity, TOSCA shame has been associated with poorer psychological adjustment, while TOSCA guilt was uncorrelated with psychological adjustment (Woien et al., 2003). Due to observed correlations between measures of shame and guilt (*r* = .55), and in accordance with the literature (Stuewig & McCloskey, 2005; Stuewig et al., 2010), shared variances between shame and guilt were partialed out in order to isolate "shame-free guilt" and "guilt-free shame" when examining correlations between shame, guilt, and other constructs. In the present study, good internal consistency was found for both shame-proneness and guilt-proneness respectively; α = .84 and α = .86.

Drinking motives. The Modified Drinking Motives Questionnaire – Revised

(MDMQR: Grant et al., 2007) is a 28-item self-report measure used to assess five drinking motive subscales: Social (5 items, e.g., “To be sociable”), Conformity (5 items, e.g., ‘‘To be liked’’), Enhancement (5 items, e.g., ‘‘Because I like the feeling’’), Coping-Depression (9 items, e.g., ‘‘Because it helps me when I am feeling depressed’’), and Coping-Anxiety (4 items, e.g., ‘‘To reduce my anxiety’’). Respondents were asked to indicate how often they drink for the reason stated using a five-point Likert scale ranging from 1 (*Almost Never or Never*) to 5 (*Almost Always or Always*). Internal consistency has been reported for each of the five scales (Social, $\alpha = .66$; Coping-anxiety, $\alpha = .73$; Coping-depression, $\alpha = .91$; Enhancement, $\alpha = .85$; and Conformity, $\alpha = .81$) in a sample of college students (Grant et al., 2007). Drinking motives were found to predict drinking frequency, amount of alcohol consumed, and alcohol-related problems over and above demographics, and showed good to excellent test–retest reliability in a sample of undergraduates who were relatively frequent drinkers (Grant et al, 2007). In the present study, the Coping-Anxiety and Coping-Depression subscales were combined to create a Coping-Total scale (Bravo & Pearson, 2017), which revealed good internal consistency; $\alpha = .93$.

Alcohol use disorders. The Alcohol Use Disorders Identification Test-Consumption Questionnaire (AUDIT-C: Bush et al., 1998) is a 3-item screen for alcohol misuse adapted from the original AUDIT (Saunders et al., 1993), which was developed to identify dangerous or risky alcohol consumption. An example item from the AUDIT-C is ‘‘How often do you have six or more standard drinks on one occasion?’’ with response options of *never*, *less than monthly*, *monthly*, *weekly*, and *daily or almost daily*. Responses are scored on a scale from 0-4, giving a maximum possible total score of 12.

Higher scores indicate more hazardous drinking and an increased likelihood of dependence. AUDIT-C showed good psychometric properties, including construct validity. When tested in a general population sample, scores on the AUDIT-C were related to alcohol dependence, Alcohol Use Disorders, and risky drinking. Performance on the AUDIT-C among a sample of college students revealed comparable descriptive statistics to those for all adults 18 to 29 years of age (Dawson et al., 2005), suggesting similar validity could be inferred. In the present study, there was good internal consistency, $\alpha = .86$.

Alcohol consequences. The Young Adult Alcohol Consequences Questionnaire (YAACQ; Read et al., 2006) is a 48-item measure that assesses alcohol use-related consequences in the last month across eight problem domains: social consequences, impaired control, negative self-perception, self-care neglect, risky behaviors, academic/occupational consequences, physical dependence indicators, and blackout drinking. Example items from the YAACQ are ‘‘I have had a hangover (headache, sick stomach) the morning after I had been drinking’’ and ‘‘My drinking has created problems between myself and my boyfriend/girlfriend/spouse, parents, or other near relatives’’. Respondents indicate whether they have experienced each alcohol use problem in the past year using a dichotomous (Yes/No) rating system. Responses marked ‘‘Yes’’ are given a score of one, while responses marked ‘‘No’’ receive a score of zero. The maximum total score on the YAACQ is 48, with higher scores indicating that the individual has experienced a greater number of negative alcohol use-related consequences. The YAACQ has strong psychometric properties, including convergent validity and test–retest reliability (Read et al., 2007). In the present study, good internal consistency was

found, $\alpha = .94$.

RESULTS

Preliminary Analysis

Statistical analyses were performed using SPSS statistical software. Participants who endorsed that they had never consumed alcohol (n = 16) were removed from the sample and participants who did not endorse whether they consumed alcohol or not (n = 2) were also removed. Missing data were determined to be not missing at random (NMAR) according to Little's MCAR test (χ^2 = 846.64 (773), p = .03). Therefore, listwise deletion was used in the present study.

Descriptive statistics and correlations of study variables can be found in Table 1. Due to observed correlations between measures of shame-proneness and guilt-proneness (r = .55), and in accordance with the literature, shared variances between shame and guilt were partialed out to isolate "shame-free guilt" and "guilt-free shame" (Stuewig & McCloskey, 2005; Stuewig et al., 2010). Using these residual variables, childhood maltreatment was positively related to trauma-related guilt, shame-proneness, and drinking-to-cope, and negatively related to guilt-proneness. Trauma-related guilt was positively related to shame-proneness and drinking-to-cope, and negatively related to guilt-proneness. Drinking-to-cope was also positively related to shame-proneness, alcohol consumption, and alcohol-related consequences (see Table 2).

Because of documented gender differences in outcomes of interest (Harper & Arias, 2004; Korcuska & Thombs, 2003), independent samples t-tests were run to determine whether gender should be included as a covariate in the proposed models. Due to findings that men and women differed significantly in regard to alcohol consumption

scores (t (248) = 3.52, p = .01), it was determined that for Model 1, in which alcohol consumption is the outcome variable, dichotomized gender would be entered as a covariate. Participants who reported another gender category, such as "wish not to answer" (n = 2), were excluded from this variable.

Primary Analysis

The proposed indirect effects were tested using bootstrapping techniques (10,000 samples) available in the PROCESS macro for SPSS (Hayes, 2017). Specifically, PROCESS Model 80, which allows combined parallel and serial mediation was used. In each model, childhood maltreatment was the independent variable predicting trauma-related guilt, shame-proneness, and guilt-proneness as parallel mediators, which, in turn, predicted drinking-to-cope as another mediator in serial. In the first model, alcohol consumption was the outcome variable. In the second model, alcohol-related consequences was the outcome variable (see Figures 1 and 2). Confidence intervals were set to 95%.

Alcohol consumption was predicted by the full model including childhood maltreatment, trauma-related guilt, shame-proneness, guilt-proneness, drinking-to-cope, and gender. This model accounted for 22% of the variance in alcohol consumption, F (6, 207) = 93.94, p < .001. There was not a main effect of maltreatment on alcohol consumption (b = -.030, SE = .018, 95% CI [-.066, .006]). However, bootstrapped estimates revealed significant indirect effects. As predicted in hypotheses 2 and 3, there were significant serial indirect effects of childhood maltreatment on alcohol consumption through trauma-related guilt and subsequent drinking-to-cope (b = .008, SE = .005, 95% CI [.001, .018]) and through shame-proneness and subsequent drinking-to-cope (b = .004,

SE = .003, 95% CI [.000, .012]). In accordance with hypothesis 4, there was no significant serial indirect effect of childhood maltreatment on alcohol consumption through guilt-proneness and subsequent drinking-to-cope (*b* = .002, *SE* = .002, 95% CI [-.003, .007]). Several significant main effects of the model were found to support the case for mediation (see Figure 3) (Hayes, 2009).

Alcohol-related consequences was also predicted by the full model including childhood maltreatment, trauma-related guilt, shame-proneness, guilt-proneness, and drinking-to-cope. This model accounted for 19% of the variance in alcohol-related consequences, F (5, 204) = 9.81, $p < .001$. There was not a main effect of maltreatment on alcohol-related consequences (*b* = -.017, *SE* = .053, 95% CI [-.121, .086]). However, bootstrapped estimates revealed significant indirect effects. As predicted in hypotheses 2 and 3, there were significant serial indirect effects of childhood maltreatment on alcohol-related consequences through trauma-related guilt and subsequent drinking-to-cope (*b* = .028, *SE* = .016, 95% CI [.005, .066]) and through shame-proneness and subsequent drinking-to-cope (*b* = .012, *SE* = .009, 95% CI [.000, .034]). In accordance with hypothesis 4, there was no significant serial indirect effect of childhood maltreatment on alcohol-related consequences through guilt-proneness and subsequent drinking-to-cope (*b* = .002, *SE* = .006, 95% CI [-.008, .015]). Several significant main effects of the model were found to support the case for mediation (see Figure 4) (Hayes, 2009).

DISCUSSION

Results from the present study support previous findings that found that childhood maltreatment is related to drinking-to-cope with distressing emotions (Goldstein et al., 2010; Mezquita et al., 2014), and that elevated levels of shame-proneness were related to increased drinking-to-cope, alcohol consumption, and alcohol-related consequences (Abramowitz & Berenbaum, 2007; Held et al., 2015; Patock-Peckham et al., 2018; Treeby & Bruno, 2012). The present study's findings further illuminate that increased levels of both trauma-related guilt and shame-proneness may impact alcohol consumption and alcohol-related consequences through their association with drinking-to-cope for survivors of child maltreatment; these links partially explained the association between severity of maltreatment and problematic alcohol behaviors in this sample of college students. Unlike previous studies that found guilt-proneness to be a protective factor against maladaptive drinking behaviors (Luoma et al., 2017; Treeby & Bruno, 2012), the present study found no significant association between guilt-proneness and drinking-to-cope, alcohol consumption, or alcohol-related consequences. However, childhood maltreatment was found to be negatively related to guilt-proneness. This aligns with previous research that suggests that kids with rejecting or critical parents may be less guilt-prone due to feelings of helplessness and hopelessness (Stuewig & McCloskey, 2005).

Another surprising finding from this study was that childhood maltreatment alone did not predict either alcohol consumption or alcohol-related consequences. This could be due to underreporting of childhood maltreatment and/or experiences with alcohol.

Compared to other studies assessing childhood trauma that utilized college samples (e.g, Goldstein et al., 2010; Reichert & Flannery-Schroeder, 2014), the present study revealed a relatively low number of participants who endorsed experiences of childhood maltreatment. Additionally, scores on the Minimizing/Denial subscale of the CTQ suggest that 41.6% of participants reported on their childhood experiences in an unrealistically positive manner, which might suggest underreporting of childhood abuse and neglect. However, MacDonald and colleagues (2016) found that studies utilizing community samples have reported similar Minimizing/Denial scores and therefore have called into question the subscale's utility and validity (MacDonald et al., 2016). Nonetheless, the relatively high rate of endorsement of minimization/denial items along with the surprisingly low rate of endorsement of childhood maltreatment experiences suggest some degree of underreporting within the present sample.

Compared to other studies assessing patterns of alcohol use in college samples (e.g., Read et al., 2006), the present sample reported relatively lower levels of alcohol use and alcohol-related consequences. While this may be due to underreporting of experiences related to alcohol, effects of the COVID-19 pandemic while this study was being conducted should also be considered in relation to drinking behaviors. Due to social distancing guidelines and strict rules and regulations on campuses this past year, students may have had reduced opportunities to engage in drinking activities, particularly in those environments that may typically conduce more risky or problematic drinking behaviors such as in bars or large social gatherings. With regard to alcohol-related consequences, limited face-to-face interactions may decrease the number of interpersonal consequences that can be associated with problematic drinking. Additionally, the

transition to virtual classes and working from home may have lowered occupational or academic demands and thus students may be experiencing fewer negative consequences associated with drinking in these domains.

In addition to low levels of endorsement of childhood maltreatment, alcohol consumption, and alcohol related consequences, the present study did have some other limitations, most notably the relatively homogenous sample that was utilized. Data was collected from a predominantly white undergraduate sample in which a majority of participants identified as coming from middle to upper class families. Future studies should aim to replicate these findings in more diverse samples who may have different experiences with childhood maltreatment and/or alcohol use. Additionally, due to findings that the data in the study was not missing at random, listwise deletion was used to handle missing data. This could lead have led to biased results and therefore replication of the study may be useful to confirm findings. Longitudinal data would also be helpful to assess experiences of childhood maltreatment prospectively instead of retrospectively and to assess alcohol use in adolescence into later adulthood to better understand how these drinking patterns may change over time. Additionally, future studies may want to include additional measures to see how factors such as emotion regulation may fit within this mediation model, due to the central role that emotion regulation plays in both post-traumatic stress responses and problematic alcohol use (Dvir et al. 2014; Heleniak et al., 2015; Veilleux et al. 2014).

In the present study, coping with anxiety and coping with depression were combined to create one drinking-to-cope variable. However, Treeby & Bruno (2012) found it could be useful to analyze how drinking-to-cope with depression and with

anxiety function differently in relation to both shame and guilt and drinking behaviors. It also might be beneficial to examine whether any subscales of alcohol-related consequences were more relevant than others. Alcohol dependence is already known to be a particularly prevalent alcohol-related consequence for childhood maltreatment survivors (Elliott et al., 2014; Mullings et al., 2004; Schwandt et al., 2013; Young-Wolff et al., 2011). It is also known that childhood maltreatment is associated with interpersonal problems (Boyda & McFeeters, 2015) and decreased sense of self (Greger et al., 2017; Lu et al., 2017), thus social and self-perception domains may be relevant consequences to consider in the model as well.

Although only small effect sizes were present in the study, finding significance in multifactorial process models is notable and likely represents real effects in the current sample. One particular strength of the study was the ability to compare trauma-related guilt, shame-proneness, and guilt-proneness in one analysis to see how they might differentially mediate the pathway from childhood maltreatment to alcohol consumption and alcohol-related consequences through drinking-to-cope. No previous studies have incorporated these variables in one model in order to understand these complex pathways. As hypothesized, trauma-related guilt functioned similarly to shame-proneness in the context of childhood maltreatment, both of which were linked to higher levels of drinking-to-cope and subsequent increased alcohol consumption and more alcohol-related consequences.

These findings have many clinical implications, including that understanding the differences between trauma-related guilt, shame-proneness and guilt-proneness can help identify which college students are at highest risk for problematic drinking based on what

self-conscious emotions he or she may tend to experience. Additionally, the study highlights that both trauma-related guilt and shame-proneness should be targets in therapy for maltreatment survivors, particularly for those that might be struggling with problematic alcohol use. Therapeutic interventions for such populations should work to improve emotional and behavioral regulation and should use guilt and shame as particular targets within these treatment modalities. Popular integrated treatments for substance use disorders (SUD) and post-traumatic stress disorder (PTSD) comorbidity include Concurrent Treatment of PTSD and SUD Using Prolonged Exposure (COPE; Back et al., 2015), which uses a combination of prolonged exposure and cognitive-behavioral-therapy (CBT) skills, and Seeking Safety (SS; Najavits, 2002), both which focus on improving coping skills and have both been found to reduce trauma-related guilt for veterans (Capone et al., 2020). Thus, both COPE and Seeking Safety could be utilized as front-line treatment for childhood maltreatment survivors with substance use difficulties. Additionally, findings from the present study could help improve treatment targets within other evidence-based trauma therapies. Trauma-focused exposure therapy, for example, should work to target maladaptive feelings of shame and guilt as specific trauma cues that may elicit alcohol cravings (Coffey et al., 2006). Cognitive processing therapy (CPT) for PTSD can help to challenge and modify shame and guilt cognitions related to childhood maltreatment and subsequent alcohol use (Resick et al., 2016). Lastly, Dialectical behavior therapy (DBT) can work to help childhood maltreatment survivors cope with intense feelings of guilt and shame using mindfulness, emotion regulation strategies, and distress tolerance (Linehan, 1993).

The present study adds to previous literature by directly comparing shame-proneness, guilt-proneness and trauma-related guilt as explanatory mechanisms in the relationship between childhood maltreatment and negative alcohol use outcomes, in conjunction with drinking-to-cope motives. The comparison of these variables in a parallel serial mediation model provides an opportunity for understanding how these self-conscious emotions arise from a history of childhood maltreatment and illuminate their distinct roles in underlying drinking motives. The findings establish that trauma-related guilt and guilt-proneness are differently related to childhood maltreatment and drinking outcomes. In this sample of college students, trauma-related guilt functioned similarly to shame-proneness, both of which were found to be risk factors for hazardous drinking behaviors among survivors of childhood maltreatment.

REFERENCES

Abramowitz, A., & Berenbaum, H. (2007). Emotional triggers and their relation to impulsive and compulsive psychopathology. *Personality and Individual Differences*, *43*(6), 1356-1365. https://doi.org/10.1016/j.paid.2007.04.004

Alessandri, S. M., & Lewis, M. (1996). Differences in pride and shame in maltreated and nonmaltreated preschoolers. *Child Development*, *67*(4), 1857-1869. https://doi.org/10.1111/j.1467-8624.1996.tb01832.x

Asberg, K., & Renk, K. (2012). Substance use coping as a mediator of the relationship between trauma symptoms and substance use consequences among incarcerated females with childhood sexual abuse histories. *Substance Use & Misuse*, *47*(7), 799–808. https://doi.org/10.3109/10826084.2012.669446

Back, S. E., Foa, E. B., Killeen, T. K., Mills, K. L., Teesson, M., Dansky Cotton, B., Brady, K. T. (2015). *Concurrent treatment of PTSD and substance use disorders using prolonged exposure (COPE): Therapist guide*. New York, NY: Oxford University Press.

Baer, J. S. (2002). Student factors: Understanding individual variation in college drinking. *Journal of Studies on Alcohol, Supplement*, (s14), 40–53. https://doi.org/10.15288/jsas.2002.s14.40

Bennett, D. S., Sullivan, M. W., & Lewis, M. (2005). Young children's adjustment as a function of maltreatment, shame, and anger. *Child Maltreatment*, *10*(4), 311–323. https://doi.org/10.1177/1077559505278619

Bennett, D. S., Sullivan, M. W., & Lewis, M. (2010). Neglected children, shame-proneness, and depressive symptoms. *Child Maltreatment, 15*(4), 305-314. https://doi.org/10.1177/1077559510379634

Bernstein, D. P., Fink, L., Handelsman, L., Foote, J., Lovejoy, M., Wenzel, K., Sapareto, E., & Ruggiero, J. (1994). Initial reliability and validity of a new retrospective measure of child abuse and neglect. *American Journal of Psychiatry*, *151*, 1132–1136.

Bernstein, D. P., Stein, J. A., Newcomb, M. D., Walker, E., Pogge, D., Ahluvalia, T., ... & Zule, W. (2003). Development and validation of a brief screening version of the Childhood Trauma Questionnaire. *Child Abuse & Neglect*, *27*(2), 169-190. https://doi.org/10.1016/S01452134(02)00541-0

Boyda, D., & McFeeters, D. (2015). Childhood maltreatment and social functioning in adults with sub-clinical psychosis. *Psychiatry Research, 226*, 376-382. https://doi.org/10.1016/j.psychres.2015.01.023

Bravo, A. J., & Pearson, M. R. (2017). In the process of drinking to cope among college students: An examination of specific vs. global coping motives for depression and anxiety symptoms. *Addictive Behaviors*, *73*, 94-98. https://doi.org/10.1016/j.addbeh.2017.05.001

Bush, K. R., Kivlahan, D. R., McDonell, M. B., Fihn, S. D., Bradley, K. A. (1998) The AUDIT alcohol consumption questions (AUDIT-C): an effective brief screening test for problem drinking. *Arch Intern Med, 158,* 1789– 1795. https://doi.org/10.1111/j.1530-0277.2007.00403.x

Capone, C., Tripp, J. C., Trim, R. S., Davis, B. C., Haller, M., & Norman, S. B. (2020). Comparing Exposure-and Coping Skills–Based Treatments on Trauma-Related Guilt in Veterans With Co-Occurring Alcohol Use and Posttraumatic Stress Disorders. *Journal of Traumatic Stress*, *33*(4), 603-609. https://doi.org/10.1002/jts.22538

Coffey, S. F., Stasiewicz, P. R., Hughes, P. M., & Brimo, M. L. (2006). Trauma-focused imaginal exposure for individuals with comorbid posttraumatic stress disorder and alcohol dependence: revealing mechanisms of alcohol craving in a cue reactivity paradigm. *Psychology of Addictive Behaviors*, *20*(4), 425. https://doi.org/10.1037/0893-164X.20.4.425

Cohen, T. R., Wolf, S. T., Panter, A. T., & Insko, C. A. (2011). Introducing the GASP scale: a new measure of guilt and shame proneness. *Journal of personality and social psychology*, *100*(5), 947. https://doi.org/10.1037/a0022641

Collins, B. G., & Collins, T. M. (2005). *Crisis and trauma: Developmental-ecological intervention*. Lahaska Press.

Covert, M. V., Tangney, J. P., Maddux, J. E., & Heleno, N. M. (2003). Shame-proneness, guilt-proneness, and interpersonal problem solving: A social cognitive analysis. *Journal of Social and Clinical Psychology*, *22*(1), 1-12. https://doi.org/10.1521/jscp.22.1.1.22765

Cross, D., Crow, T., Powers, A., & Bradley, B. (2015). Childhood trauma, PTSD, and problematic alcohol and substance use in low-income, African-American men and women. *Child Abuse & Neglect*, *44*, 26–35. https://doi.org/10.1016/j.chiabu.2015.01.007

Dawson, D. A., Grant, B. F., Stinson, F. S., & Zhou, Y. (2005). Effectiveness of the derived Alcohol Use Disorders Identification Test (AUDIT-C) in screening for alcohol use disorders and risk drinking in the US general population. *Alcoholism: Clinical and Experimental Research*, *29*(5), 844 854. https://doi.org/10.1097/01.ALC.0000164374.32229.A2

Dearing, R. L., & Tangney, J. P. (Eds.). (2011). Shame in the therapy hour. American Psychological Association. https://doi.org/10.1037/12326-000

Dearing, R. L., Witkiewitz, K., Connors, G. J., & Walitzer, K. S. (2013). Prospective changes in alcohol use among hazardous drinkers in the absence of treatment. *Psychology of Addictive Behaviors, 27*(1), 52-61. http://dx.doi.org/10.1037/a0028170

Dempsey, H. L. (2017). A comparison of the social-adaptive perspective and functionalist perspective on guilt and shame. *Behavioral Sciences, 7*(4), 83. https://doi.org/10.3390/bs7040083

Dube, S. R., Miller, J. W., Brown, D. W., Giles, W. H., Felitti, V. J., Dong, M., & Anda, R. F. (2006). Adverse childhood experiences and the association with ever using alcohol and initiating alcohol use during adolescence. *Journal of Adolescent Health*, *38*(4). https://doi.org/10.1016/j.jadohealth.2005.06.006

Dvir, Y., Ford, J. D., Hill, M., & Frazier, J. A. (2014). Childhood maltreatment, emotional dysregulation, and psychiatric comorbidities. *Harvard Review of Psychiatry*, *22*(3), 149–161. https://doi.org/10.1097/hrp.0000000000000014

Ellenbogen, S., Trocmé, N., Wekerle, C., & McLeod, K. (2015). An exploratory study of physical abuse–related shame, guilt, and blame in a sample of youth receiving

child protective services: Links to maltreatment, anger, and aggression. *Journal of Aggression, Maltreatment & Trauma, 24*(5), 532-551. https://doi.org/10.1080/10926771.2015.1029183

Elliott, J. C., Stohl, M., Wall, M. M., Keyes, K. M., Goodwin, R. D., Skodol, A. E., … Hasin, D. S. (2014). The risk for persistent adult alcohol and nicotine dependence: The role of childhood maltreatment. *Addiction, 109*(5), 842–850. https://doi.org/10.1111/add.12477

Feiring, C., & Taska, L. S. (2005). The Persistence of Shame Following Sexual Abuse: A Longitudinal Look at Risk and Recovery. *Child Maltreatment, 10*(4), 337–349. https://doi.org/10.1177/1077559505276686

Fisher, M. J. J. (2008). *Evaluation of A Self-Forgiveness Intervention: Does It Promote Emotion Resolution and Prosocial Behavior?* Unpublished doctoral dissertation, Case Western Reserve University.

Fisher, M. L., & Exline, J. J. (2010). Moving toward self-forgiveness: Removing barriers related to shame, guilt, and regret. *Social and Personality Psychology Compass*, *4*(8), 548-558. https://doi.org/10.1111/j.1751-9004.2010.00276.x

Gaher, R. M., Simons, J. S., Jacobs, G. A., Meyer, D., & Johnson-Jimenez, E. (2006). Coping motives and trait negative affect: Testing mediation and moderation models of alcohol problems among American Red Cross disaster workers who responded to the September 11, 2001 terrorist attacks. *Addictive Behaviors*, *31*(8), 1319–1330. https://doi.org/10.1016/j.addbeh.2005.10.006

Gilbert, R., Widom, C. S., Browne, K., Fergusson, D., Webb, E., & Janson, S. (2009). Burden and consequences of child maltreatment in high-income countries. *The Lancet*, *373*(9657), 68–81. https://doi.org/10.1016/s0140-6736(08)61706-7

Goldstein, A. L., Flett, G. L., & Wekerle, C. (2010). Child maltreatment, alcohol use and drinking consequences among male and female college students: An examination of drinking motives as mediators. *Addictive Behaviors*, *35*(6), 636-639. https://doi.org/10.1016/j.addbeh.2010.02.002

Grant, V. V., Stewart, S. H., O'Connor, R. M., Blackwell, E., & Conrod, P. J. (2007). Psychometric evaluation of the five-factor Modified Drinking Motives Questionnaire—Revised in undergraduates. *Addictive Behaviors*, *32*(11), 2611-2632. https://doi.org/10.1016/J.ADDBEH.2007.07.004

Greger, H. K., Myhre, A. K., Klöckner, C. A., & Jozefiak, T. (2017). Childhood maltreatment, psychopathology and well-being: The mediator role of global self-esteem, attachment difficulties and substance use. *Child Abuse & Neglect, 70*, 122-133. https://doi.org/10.1016/j.chiabu.2017.06.012

Hamburger, M. E., Leeb, R. T., & Swahn, M. H. (2008). Childhood maltreatment and early alcohol use among high-risk adolescents. *Journal of Studies on Alcohol and Drugs*, *69*(2), 291–295. https://doi.org/10.15288/jsad.2008.69.291

Harper, F. W., & Arias, I. (2004). The role of shame in predicting adult anger and depressive symptoms among victims of child psychological maltreatment. *Journal of Family Violence, 19*(6), 359-367. https://doi.org/10.1007/s10896-004-0681-x

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, *76*(4), 408-420. https://doi.org/10.1080/03637750903310360

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford publications.

Held, P., Owens, G. P., & Anderson, S. E. (2015). The interrelationships among trauma-related guilt and shame, disengagement coping, and PTSD in a sample of treatment-seeking substance users. *Traumatology, 21*(4), 285–292. https://doi.org/10.1037/trm0000050

Heleniak, C., Jenness, J. L., Vander Stoep, A., McCauley, E., & McLaughlin, K. A. (2016). Childhood maltreatment exposure and disruptions in emotion regulation: A transdiagnostic pathway to adolescent internalizing and externalizing psychopathology. *Cognitive Therapy and Research, 40*(3), 394-415. https://doi.org/10.1007/s10608-015-9735-z

Hussong, A. M. (2007). Predictors of drinking immediacy following daily sadness: An application of survival analysis to experience sampling data. *Addictive Behaviors, 32*(5), 1054-1065. https://doi.org/10.1016/j.addbeh.2006.07.011

Ireland, T., & Widom, C. S. (1994). Childhood victimization and risk for alcohol and drug arrests. *International Journal of the Addictions*, *29*(2), 235–274. https://doi.org/10.3109/10826089409047380

Kendler, K. S., Bulik, C. M., Silberg, J., Hettema, J. M., Myers, J., & Prescott, C. A. (2000). Childhood sexual abuse and adult psychiatric and substance use disorders

in women: An epidemiological and cotwin control analysis . *Archives of General Psychiatry, 57*(10), 953. https://doi.org/10.1001/archpsyc.57.10.953

Korcuska, J.S., & Thombs, D.L. (2003). Gender role conflict and sex-specific drinking norms: Relationships to alcohol use in undergraduate women and men. *Journal of College Student Development, 44*(2), 204-216. https://doi.org/10.1353/csd.2003.0017.

Kubany, E. S., & Watson, S. B. (2003). Guilt: Elaboration of a multidimensional model. *Psychological Record, 53*(1), 51-90.

Kubany, E. S., Haynes, S. N., Abueg, F. R., Manke, F. P., Brennan, J. M., & Stahura, C. (1996). Development and validation of the trauma-related guilt inventory (TRGI). *Psychological Assessment, 8*(4), 428. https://doi.org/10.1037/1040-3590.8.4.428

Kubany, E. S., Leisen, M. B., Kaplan, A. S., Watson, S. B., Haynes, S. N., Owens, J. A., & Burns, K. (2000). Development and preliminary validation of a brief broad-spectrum measure of trauma exposure: The Traumatic Life Events Questionnaire. *Psychological Assessment, 12*(2), 210–224. https://doi.org/10.1037/1040-3590.12.2.210

Kuntsche, E., Knibbe, R., Gmel, G., & Engels, R. (2005). Why do young people drink? A review of drinking motives. *Clinical Psychology Review*, *25*(7), 841–861. https://doi.org/10.1016/j.cpr.2005.06.002

LaBrie, J. W., Ehret, P. J., Hummer, J. F., & Prenovost, K. (2012). Poor adjustment to college life mediates the relationship between drinking motives and alcohol consequences: A look at college adjustment, drinking motives, and drinking

outcomes. *Addictive Behaviors*, *37*(4), 379-386. https://doi.org/10.1016/j.addbeh.2011.11.018

Lee, D. A., Scragg, P., & Turner, S. (2001). The role of shame and guilt in traumatic events: A clinical model of shame-based and guilt-based PTSD. *British journal of medical psychology*, *74*(4), 451-466. https://doi.org/10.1348/000711201161109

Leeies, M., Pagura, J., Sareen, J., & Bolton, J. M. (2010). The use of alcohol and drugs to self-medicate symptoms of posttraumatic stress disorder. *Depression and Anxiety*, *27*(8), 731–736. https://doi.org/10.1002/da.20677

Linehan, M. M. (1993). *Cognitive–behavioral treatment of borderline personality disorder*. New York: The Guilford Press.

Lu, F. Y., Wen, S., Deng, G., & Tang, Y. L. (2017). Self-concept mediate the relationship between childhood maltreatment and abstinence motivation as well as self-efficacy among drug addicts. *Addictive Behaviors*, *68*, 52-58. https://doi.org/10.1016/j.addbeh.2017.01.017

Luoma, J., Guinther, P., Potter, J., & Cheslock, M. (2017). Experienced-based versus scenario-based assessments of shame and guilt and their relationship to alcohol consumption and problems. *Substance Use & Misuse*, *52*(13), 1692-1700. https://doi.org/10.1080/10826084.2017.1305416

MacDonald, K., Thomas, M. L., Sciolla, A. F., Schneider, B., Pappas, K., Bleijenberg, G., ... & Wingenfeld, K. (2016). Minimization of childhood maltreatment is common and consequential: Results from a large, multinational sample using the childhood trauma questionnaire. *PloS one*, *11*(1), e0146058. https://doi.org/10.1371/journal.pone.0146058

Mezquita, L., Ibánez, M. I., Moya, J., Villa, H., & Ortet, G. (2014). A longitudinal examination of different etiological pathways to alcohol use and misuse. *Alcoholism: Clinical and Experimental Research*, *38*(6), 1770-1779. https://doi.org/10.1111/acer.12419

Mullings, J. L., Hartley, D. J., & Marquart, J. W. (2004). Exploring the relationship between alcohol use, childhood maltreatment, and treatment needs among female prisoners. *Substance Use & Misuse*, *39*(2), 277–305. https://doi.org/10.1081/ja-120028491

Najavits, L. M., Weiss, R. D., & Shaw, S. R. (1997). The link between substance abuse and Posttraumatic Stress Disorder in women. *The American Journal on Addictions*, *6*(4), 273–283. https://doi.org/10.1111/j.1521-0391.1997.tb00408.x

Najavits, L. M. (2002). *Seeking safety, a treatment manual for PTSD and substance abuse*. New York, NY: Guilford Press.

Neighbors, C., Lee, C. M., Lewis, M. A., Fossos, N., & Larimer, M. E. (2007). Are social norms the best predictor of outcomes among heavy-drinking college students? *Journal of Studies on Alcohol and Drugs*, *68*(4), 556–565. https://doi.org/10.15288/jsad.2007.68.556

Park, C. L., & Levenson, M. R. (2002). Drinking to cope among college students: Prevalence, problems and coping processes. *Journal of Studies on Alcohol*, *63*(4), 486–497. https://doi.org/10.15288/jsa.2002.63.486

Passanisi, A., Gervasi, A. M., Madonia, C., Guzzo, G., & Greco, D. (2015). Attachment, self-esteem and shame in emerging adulthood. *Procedia-Social and Behavioral Sciences*, *191*(1), 342-346. https://doi.org/10.1016/j.sbspro.2015.04.552

Patock-Peckham, J. A., Canning, J. R., & Leeman, R. F. (2018). Shame is bad and guilt is good: An examination of the impaired control over drinking pathway to alcohol use and related problems. *Personality and Individual Differences*, *121*, 62-66. https://doi.org/10.1016/j.paid.2017.09.023

Piccinelli, M., & Wilkinson, G. (2000). Gender differences in depression: Critical review. *British Journal of Psychiatry, 177*(6), 486-492. https://doi.org/10.1192/bjp.177.6.486

Platt, M., & Freyd, J. (2012). Trauma and negative underlying assumptions in feelings of shame: An exploratory study. *Psychological Trauma: Theory, Research, Practice, and Policy*, *4*(4), 370. https://doi.org/10.1037/a0024253

Puengtum, C., & Blauw, J. N. (2018). The impact of negative behavior evaluations/guilt and negative self-evaluations/shame of Thai Undergraduate Students in Bangkok on their personal growth initiative both directly and indirectly, being mediated by their repair and withdrawal tendencies. *Scholar: Human Sciences*, *10*(1), 86.

Randolph, K. A., Russell, D., Harker Tillman, K., & Fincham, F. D. (2010). Protective influences on the negative consequences of drinking among youth. *Youth & Society*, *41*(4), 546-568. https://doi.org/10.1177/0044118X09333664

Read, J. P., Kahler, C. W., Strong, D. R., & Colder, C. R. (2006). Development and preliminary validation of the young adult alcohol consequences questionnaire. *Journal of Studies on Alcohol*, *67*(1), 169-177. https://doi.org/10.15288/jsa.2006.67.169

Read, J. P., Merrill, J. E., Kahler, C. W., & Strong, D. R. (2007). Predicting functional outcomes among college drinkers: Reliability and predictive validity of the Young

Adult Alcohol Consequences Questionnaire. *Addictive Behaviors, 32*(11), 2597-2610. https://doi.org/10.1016/j.addbeh.2007.06.021

Read, J. P., Wood, M. D., Kahler, C. W., Maddock, J. E., & Palfai, T. P. (2003). Examining the role of drinking motives in college student alcohol use and problems. *Psychology of Addictive Behaviors, 17*(1), 13–23. https://doi.org/10.1037/0893-164x.17.1.13

Reichert, E. L., & Flannery-Schroeder, E. (2014). Posttraumatic cognitions as mediators between childhood maltreatment and poorer mental health among young adults. *Journal of Child & Adolescent Trauma, 7*(3), 153-162. https://doi.org/10.1007/s40653-014-0021-0

Resick, P. A., Monson, C. M., & Chard, K. M. (2016). *Cognitive processing therapy for PTSD: A comprehensive manual*. New York, NY: Guilford Press.

Rice, K. G., & Van Arsdale, A. C. (2010). Perfectionism, perceived stress, drinking to cope, and alcohol-related problems among college students. *Journal of Counseling Psychology, 57*(4), 439–450. https://doi.org/10.1037/a0020221

Robinson, J., Sareen, J., Cox, B. J., & Bolton, J. M. (2011). Role of self-medication in the development of comorbid anxiety and Substance Use Disorders. *Archives of General Psychiatry, 68*(8), 800. https://doi.org/10.1001/archgenpsychiatry.2011.75

Roos, S., Hodges, E. V. E., & Salmivalli, C. (2014). Do guilt- and shame-proneness differentially predict prosocial, aggressive, and withdrawn behaviors during early adolescence? *Developmental Psychology, 50*(3), 941-946. https://doi.org/10.1037/a0033904

Saunders, J. B., Aasland, O. G., Babor, T. F., De la Fuente, J. R., & Grant, M. (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. https://doi.org/10.1111/j.1360-0443.1993.tb02093.x

Schwandt, M. L., Heilig, M., Hommer, D. W., George, D. T., & Ramchandani, V. A. (2013). Childhood trauma exposure and alcohol dependence severity in adulthood: mediation by emotional abuse severity and neuroticism. *Alcoholism: Clinical and Experimental Research*, *37*(6), 984–992. https://doi.org/10.1111/acer.12053

Shahar, B., Doron, G., & Szepsenwol, O. (2015). Childhood maltreatment, shame-proneness and self-criticism in social anxiety disorder: A sequential mediational model. *Clinical psychology & psychotherapy*, *22*(6), 570-579. https://doi.org/10.1002/cpp.1918

Shin, S. H., Jiskrova, G. K., & Wills, T. A. (2019). Childhood maltreatment and alcohol use in young adulthood: the role of self-regulation processes. *Addictive behaviors, 90*, 241-249. ttps://doi.org/10.1016/j.addbeh.2018.11.006

Shin, S. H., Miller, D. P., & Teicher, M. H. (2013). Exposure to childhood neglect and physical abuse and developmental trajectories of heavy episodic drinking from early adolescence into young adulthood. *Drug and Alcohol Dependence*, *127*(1-3), 31–38. https://doi.org/10.1016/j.drugalcdep.2012.06.005

Simons, J. S., Gaher, R. M., Correia, C. J., Hansen, C. L., & Christopher, M. S. (2005). An affective-motivational model of marijuana and alcohol problems among college students. *Psychology of Addictive Behaviors, 19*(3), 326–334. https://doi.org/10.1037/0893-164X.19.3.326

Stuewig, J., & McCloskey, L. A. (2005). The relation of child maltreatment to shame and guilt among adolescents: Psychological routes to depression and delinquency. *Child Maltreatment*, 10(4), 324–336. https://doi.org/10.1177/1077559505279308

Stuewig, J., Tangney, J. P., Heigel, C., Harty, L., & McCloskey, L. (2010). Shaming, blaming, and maiming: Functional links among the moral emotions, externalization of blame, and aggression. *Journal of research in personality*, *44*(1), 91-102. https://doi.org/10.1016/j.jrp.2009.12.005

Tangney, J. P. (Ed.). (2012). Self-conscious emotions. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (p. 446–478). The Guilford Press.

Tangney, J. P., & Dearing, R. L. (2002). *Shame and guilt*. Guilford Press.

Tangney, J. P., & Fisher, K. W. (1995). Self-conscious emotions: the psychology of shame, guilt and pride.

Tangney JP, Dearing R, Wagner P, Gramzow R. The Test of Self - Conscious Affect (TOSCA-3). Fairfax, VA: George Mason University, 2000.

Tracy, J. L., & Robins, R. W. (2004). " Putting the Self Into Self-Conscious Emotions: A Theoretical Model". *Psychological Inquiry*, *15*(2), 103-125. https://doi.org/10.1207/s15327965pli1502_01

Treeby, M., & Bruno, R. (2012). Shame and guilt-proneness: Divergent implications for problematic alcohol use and drinking to cope with anxiety and depression

symptomatology. *Personality and Individual Differences*, *53*(5), 613-617. https://doi.org/10.1016/J.PAID.2012.05.011

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (2018). *National Survey on Drug Use and Health 2018* (NSDUH-2018-DS0001). SAMSHSA. https://datafiles.samhsa.gov/

Veilleux, J. C., Skinner, K. D., Reese, E. D., & Shaver, J. A. (2014). Negative affect intensity influences drinking to cope through facets of emotion dysregulation. *Personality and Individual Differences*, *59*, 96–101. https://doi.org/10.1016/j.paid.2013.11.012

Vernig, P. M., & Orsillo, S. M. (2015). Drinking motives and college alcohol problems: A prospective study. *Journal of Substance Use*, *20*(5), 340-346. https://doi.org/10.3109/14659891.2014.923053

Webb, M., Heisler, D., Call, S., Chickering, S. A., & Colburn, T. A. (2007). Shame, guilt, symptoms of depression, and reported history of psychological maltreatment. *Child Abuse & Neglect*, *31*(11-12), 1143-1153. https://doi.org/10.1016/j.chiabu.2007.09.003

Woien, S. L., Ernst, H. A., Patock-Peckham, J. A., & Nagoshi, C. T. (2003). Validation of the TOSCA to measure shame and guilt. *Personality and Individual Differences*, *35*(2), 313-326. https://doi.org/10.1016/S0191-8869(02)00191-5

Young-Wolff, K. C., Kendler, K. S., Ericson, M. L., & Prescott, C. A. (2010). Accounting for the association between childhood maltreatment and alcohol-use

disorders in males: A twin study. *Psychological Medicine, 41*(1), 59–70. https://doi.org/10.1017/s0033291710000425

Zahn-Waxler, C., Kochanska, G., Krupnick, J., & McKnew, D. (1990). Patterns of guilt in children of depressed and well mothers. *Developmental Psychology, 26*(1), 51-59. https://doi.org/10.1037/0012-1649.26.1.51

Table 1

Descriptive Statistics of Model Variables and Bivariate Correlations

Variable	*n*	Mean (SD)	1	2	3	4	5	6	7
1. Childhood maltreatment	243	33.17 (10.67)	--						
2. Trauma-related guilt	237	4.30 (3.69)	.39**	--					
3. Shame-proneness	246	53.01 (10.71)	.13	.20**	--				
4. Guilt-proneness	247	66.36 (9.26)	-.14*	-.11	.55**	--			
5. Drinking-to-cope	245	22.79 (10.72)	.20**	.27**	.23**	-.03	--		
6. Alcohol consumption	252	4.48 (2.73)	-.11	.01	-.12	-.13*	.38**	--	
7. Alcohol-related consequences	244	8.76 (8.29)	.01	.04	.03	-.04	.41**	.66**	--

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

Table 2

Bivariate Correlations using Residual Shame-proneness and Guilt-proneness

Variable	1	2	3	4	5	6	7
1. Childhood maltreatment	--						
2. Trauma-related guilt	.39**	--					
3. Shame-proneness residual	.30**	.30**	--				
4. Guilt-proneness residual	-.29**	-.23*	.55**	--			
5. Drinking-to-cope	.20**	.27**	.27**	-.13	--		
6. Alcohol consumption	-.11	.01	-.09	-.03	.38**	--	
7. Alcohol-related consequences	.01	.04	.01	.02	.41**	.66**	--

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

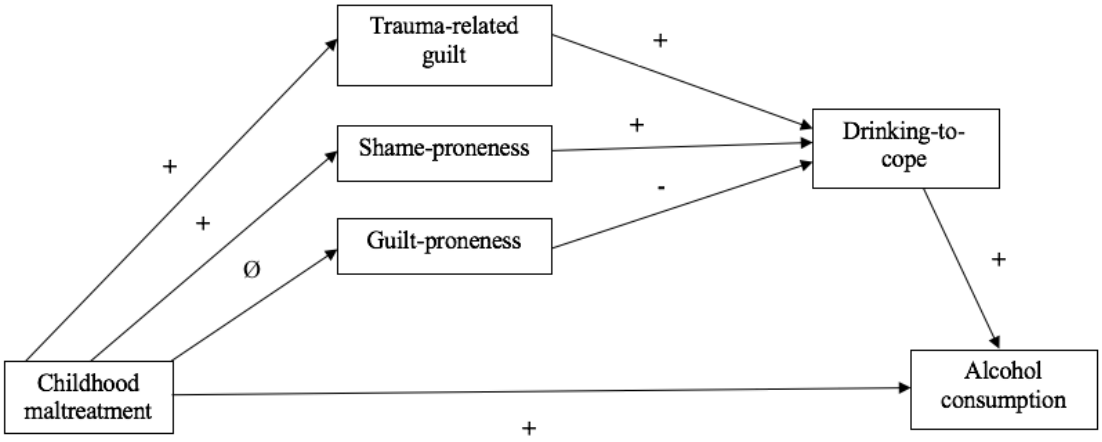

Figure 1

Hypothesized Model 1

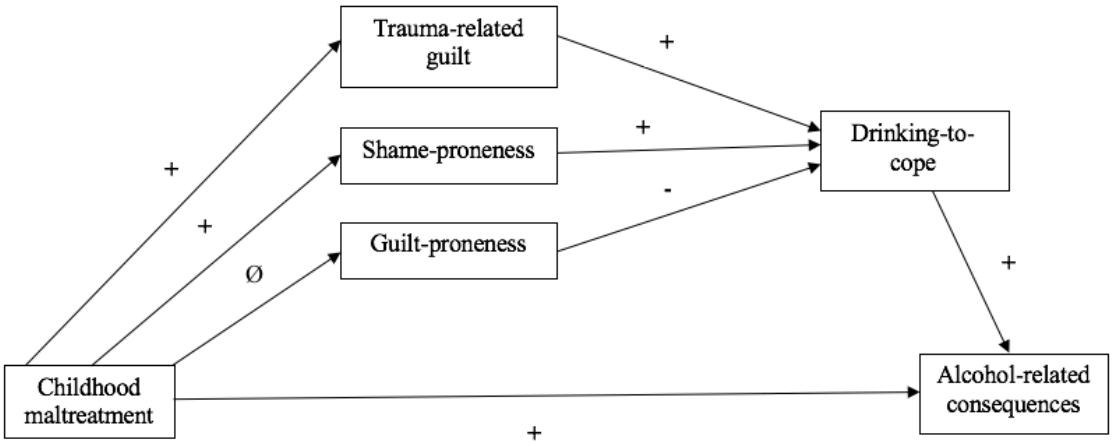

Figure 2

Hypothesized Model 2

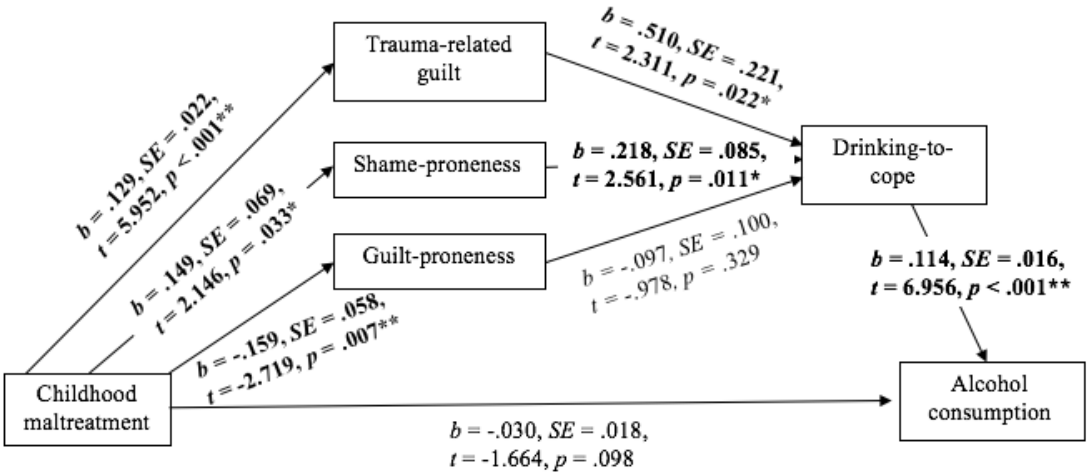

Figure 3

*Main effects of Model 1, *p < .05. **p < .01*

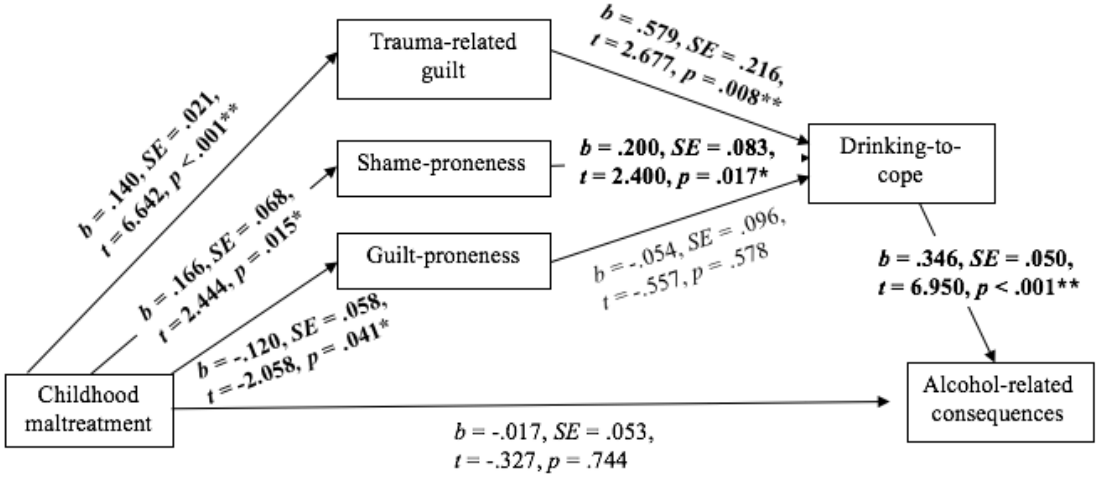

Figure 4

*Main effects of Model 2, *p < .05. **p < .01*

APPENDIX A

Demographic Questions

If you are concerned that your pattern of responses to the following questions could make you identifiable, please select "wish to not answer" to one of the following questions.

1. Gender:

_____Male
_____Female
_____Described another way: _____
_____Wish to not answer

2. Age:

_____years old
_____Wish to not answer

3. Race:

_____American Indian or Alaskan Native
_____Hawaiian or Other Pacific Islander
_____Asian or Asian American
_____Black or African American
_____Hispanic or Latino
_____Non-Hispanic White
_____Other; If other, please list_____
_____Wish to not answer

4. Parental education:

Parent 1	Parent 2
_____Less than high school	_____Less than high school
_____High school Graduate	_____High school Graduate
_____Associate's Degree	_____Associate's Degree
_____Bachelor's Degree	_____Bachelor's Degree
_____Graduate Degree	_____Graduate Degree
_____Wish not to answer	_____Wish not to answer

5. Family annual household income:

_____0-$40,000
_____$40,000-$80,000
_____$80,000-$120,000
_____$120,000-$160,000
_____$160,000+
_____$120,000-$160,000
_____I don't know
_____Wish not to answer

APPENDIX B

Childhood Trauma Questionnaire (CTQ Short Form)

Childhood Trauma Questionnaire not appended due to copyright

APPENDIX C

Trauma Related Guilt Inventory (TRGI)

Individuals who have experienced traumatic events—vary considerably in their response to these events. Some people do not have any misgivings about what they did during these events, whereas other people do. They may have misgivings about something they did (or did not do), about beliefs or thoughts they had, or for having had certain feelings (or lack of feelings). The purpose of this questionnaire is to evaluate your response to a traumatic experience.

Please take a few moments to think about any negative or unpleasant experiences you may have indicated on the previous measure, even if it only happened once. All the items below refer to this experience. Circle the answer that best describes how you feel about each statement.

	Extremely or always true	Very or frequently true	Somewhat or sometimes true	Slightly or rarely true	Not at all or never true
1. I could have prevented what happened.	1	2	3	4	5
2. I am still depressed about what happened.	1	2	3	4	5
3. I had some feelings that I should not have had.	1	2	3	4	5
4. What I did was completely justified.	1	2	3	4	5
5. I was responsible for causing what happened.	1	2	3	4	5
6. What happened causes me	1	2	3	4	5

emotional pain.					
7. I did something that went against my values.	1	2	3	4	5
8. What I did made sense.	1	2	3	4	5
9. I knew better than to do what I did.	1	2	3	4	5
10. I feel sorrow or grief about the outcome.	1	2	3	4	5
11. What I did was inconsistent with my beliefs.	1	2	3	4	5
12. If I knew today—only what 1knew when the event(s) occurred—I would do exactly the same thing.	1	2	3	4	5
13. I experience intense guilt that relates to what happened.	1	2	3	4	5
14. I should have known better.	1	2	3	4	5

15. I experience severe emotional distress when I think about what happened.	1	2	3	4	5
16. I had some thoughts or beliefs that I should not have had.	1	2	3	4	5
17. I had good reasons for doing what I did.	1	2	3	4	5
18.Indicate how frequently you experience guilt that relates to what happened.	1 (never)	2 (seldom)	3 (occasionally)	4 (often)	5 (always)
19. I blame myself for what happened.	1	2	3	4	5
20. What happened causes a lot of pain and suffering.	1	2	3	4	5

21. I should have had certain feelings that I did not have.	1	2	3	4	5
22. Indicate the intensity or severity of guilt that you typically experience about the event(s).	1 (none)	2 (slight)	3 (moderate)	4 (considerate)	5 (extreme)
23. I blame myself for something 1 did, thought, or felt.	1	2	3	4	5
24. When I am reminded of the event(s), I have strong physical reactions such as sweating, tense muscles, dry mouth, etc.	1	2	3	4	5
25. Overall, how guilty do you feel about the event(s)?	1 (not guilty at all)	2 (slightly guilty)	3 (moderately guilty)	4 (very guilty)	5 (extremely guilty)
26. I hold myself responsible for what happened.	1	2	3	4	5

27. What I did was not justified anyways.	1	2	3	4	5
28. I violated personal standards of right and wrong.	1	2	3	4	5
29. I did something that I should not have done.	1	2	3	4	5
30. I should have done something that I did not do.	1	2	3	4	5
31. What I did was unforgivable.	1	2	3	4	5
32. I didn’t do anything wrong.	1	2	3	4	5

APPENDIX D

Test of Self-Conscious Affect-3 (TOSCA-3)

Below are situations that people are likely to encounter in day-to-day life, followed by several common reactions to those situations. As you read each scenario, try to imagine yourself in that situation. Then indicate how likely you would be to react in each of the ways described. We ask you to rate *all* responses because people may feel or react more than one way to the same situation, or they may react different ways at different times.

For example: *You wake up early one Saturday morning. It is cold and rainy outside.*

	Not likely				Very likely
a) You would telephone a friend to catch up on news.	1	2	3	4	5
b) You would take the extra time to read the paper	1	2	3	4	5
c) You would feel disappointed that it's raining.	1	2	3	4	5
d) You would wonder why you woke up so early.	1	2	3	4	5

1. *You make plans to meet a friend for lunch. At 5 o'clock, you realize you stood your friend up.*

	Not likely				Very likely
a) You would think: "I'm inconsiderate."	1	2	3	4	5
b) You would think: "Well, my friend will understand."	1	2	3	4	5
c) You'd think you should make it up to your friend as soon as possible.	1	2	3	4	5
d) You would think: "My boss distracted me just before lunch."	1	2	3	4	5

2. You break something at work and then hide it.

	Not likely				Very likely
a) You would think: "This is making me anxious. I need to either fix it or get someone else to."	1	2	3	4	5
b) You would think about quitting.	1	2	3	4	5
c) You would think: "A lot of things aren't made very well these days."	1	2	3	4	5
d) You would think: "It was only an accident."	1	2	3	4	5

3. *You are out with friends one evening, and you're feeling especially witty and attractive. Your best friend's spouse seems to particularly enjoy your company.*

	Not likely				Very likely
a) You would think: "I should have been aware of what my best friend was feeling."	1	2	3	4	5
b) You would feel happy with your appearance and personality.	1	2	3	4	5
c) You would feel pleased to have made such a good impression.	1	2	3	4	5
d) You would think your best friend should pay attention to his/her spouse.	1	2	3	4	5
e) You would probably avoid eye contact for a long time.	1	2	3	4	5

4. *At work you wait until the last minute to plan a project, and it turns out badly.*

	Not likely				Very likely
a) You would feel incompetent.	1	2	3	4	5
b) You would think: "There are never enough hours in the day."	1	2	3	4	5
c) You would feel: "I deserve to be reprimanded for mismanaging the project."	1	2	3	4	5
d) You would think: "What's done is done."	1	2	3	4	5

5. *You make a mistake at work and find out a coworker is blamed for the error.*

	Not likely				Very likely
a) You would think the company did not like the worker.	1	2	3	4	5
b) You would think: "Life is not fair."	1	2	3	4	5
c) You would keep quiet and avoid the coworker.	1	2	3	4	5
d) You would feel unhappy and eager to correct the situation.	1	2	3	4	5

6. *For several days you put off making a difficult phone call. At the last minute you make the call and are able to manipulate the conversation so that all goes well.*

	Not likely				Very likely
a) You would think: "I guess I'm more persuasive than I thought."	1	2	3	4	5
b) You would regret that you put it off.	1	2	3	4	5
c) You would feel like a coward.	1	2	3	4	5
d) You would think: "I did a good job."	1	2	3	4	5
e) You would think you shouldn't have to make calls you feel pressured into.	1	2	3	4	5

7. *While playing around, you throw a ball and it hits your friend in the face.*

	Not likely				Very likely
a) You would feel inadequate that you can't even throw a ball.	1	2	3	4	5
b) You would think maybe your friend needs more practice at catching.	1	2	3	4	5
c) You would think: "It was just an accident."	1	2	3	4	5
d) You would apologize and make sure your friend feels better.	1	2	3	4	5

8. *You have recently moved away from your family, and everyone has been very helpful. A few times you needed to borrow money, but you paid it back as soon as you could.*

	Not likely				Very likely
a) You would feel immature.	1	2	3	4	5
b) You would think: "I sure ran into some bad luck."	1	2	3	4	5
c) You would return the favor as quickly as you could.	1	2	3	4	5
d) You would think: "I am a trustworthy person."	1	2	3	4	5
e) You would be proud that you repaid your debts.	1	2	3	4	5

9. You are driving down the road, and you hit a small animal.

	Not likely				Very likely
a) You would think the animal shouldn't have been on the road.	1	2	3	4	5
b) You would think: "I'm terrible."	1	2	3	4	5
c) You would feel: "Well, it was an accident."	1	2	3	4	5
d) You'd feel bad you hadn't been more alert driving down the road.	1	2	3	4	5

10. You walk out of an exam thinking you did extremely well. Then you find out you did poorly.

	Not likely				Very likely
a) You would think: "Well, it's just a test."	1	2	3	4	5
b) You would think: "The instructor doesn't like me."	1	2	3	4	5
c) You would think: "I should have studied harder."	1	2	3	4	5
d) You would feel stupid.	1	2	3	4	5

11. You and a group of coworkers worked very hard on a project. Your boss single you out for a bonus because the project was such a success.

	Not likely				Very likely
a) You would feel the boss is rather short-sighted.	1	2	3	4	5
b) You would feel alone and apart from your colleagues.	1	2	3	4	5
c) You would feel your hard work paid off.	1	2	3	4	5
d) You would feel competent and proud of yourself.	1	2	3	4	5
e) You would feel you should not accept it.	1	2	3	4	5

12. While out with a group of friends, you make fun of a friend who's not there.

	Not likely				Very likely
a) You would think: "It was all in fun; its harmless."	1	2	3	4	5
b) You would feel small… like a rat.	1	2	3	4	5
a) You would think that perhaps that friend should have been there to defend him/herself.	1	2	3	4	5
b) You would apologize and talk about that person's good points.	1	2	3	4	5

13. *You make a big mistake on an important project at work. People were depending on you, and your boss criticizes you.*

	Not likely				Very likely
a) You would think your boss should have been more clear about what was expected of you.	1	2	3	4	5
b) You would feel like you wanted to hide.	1	2	3	4	5
c) You would think: "I should have recognized the problem and done a better job."	1	2	3	4	5
d) You would think: "Well, nobody's perfect."	1	2	3	4	5

14. *You volunteer to help with the local Special Olympics for handicapped children. It turns out to be frustrating and time-consuming work. You think seriously about quitting, but then you see how happy the kids are.*

	Not likely				Very likely
a) You would feel selfish, and you'd think you are basically lazy.	1	2	3	4	5
b) You would feel you were forced into doing something you did not want to do.	1	2	3	4	5
c) You would think: "I should be more concerned about people who are less fortunate."	1	2	3	4	5
d) You would feel great that you had helped others.	1	2	3	4	5
e) You would feel very satisfied with yourself.	1	2	3	4	5

15. *You are taking care of your friend's dog while your friend is on vacation, and the dog runs away.*

	Not likely				Very likely
a) You would think, "I am irresponsible and incompetent."	1	2	3	4	5
b) You would think your friend must not take very good care of the dog or it wouldn't have run away.	1	2	3	4	5
c) You would vow to be more careful next time.	1	2	3	4	5

16. *You attend your coworker's housewarming party and you spill red wine on a new cream-colored carpet, but you think no one notices.*

	Not likely				Very likely
a) You think your coworker should have expected some accidents at such a big party.	1	2	3	4	5
b) You would stay late to help clean up the stain after the party.	1	2	3	4	5
c) You would wish you were anywhere but at the party.	1	2	3	4	5
d) You would wonder why your coworker chose to serve red wine with new light carpet.	1	2	3	4	5

APPENDIX E

The Alcohol Use Disorders Identification Test (AUDIT-C): Self-Report Version

INSTRUCTIONS: Please read the following questions carefully. Circle the response that best describes your answer to each question. When needed, please refer to the standard drink table on next page. Your answers will remain confidential so please be honest.

	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	0 to 2	3 or 4	5 or 6	7 to 9	10 or more
3. How often do you have six or more drinks on one occasion ?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily

STANDARD DRINK EQUIVALENTS	APPROXIMATE NUMBER OF STANDARD DRINKS IN:
BEER or COOLER	
12 oz. **~5% alcohol** 	12 oz. = 1 16 oz. = 1.3 22 oz. = 2 40 oz. = 3.3
MALT LIQUOR	
8-9 oz. **~7% alcohol** 	12 oz. = 1.5 16 oz. = 2 22 oz. = 2.5 40 oz. = 4.5
TABLE WINE	
5 oz. **~12% alcohol** 	a 750 mL (25 oz.) bottle = 5
80-proof SPIRITS (hard liquor)	
1.5 oz. **~40% alcohol** 	a mixed drink = 1 or more* a pint (16 oz.) = 11 a fifth (25 oz.) = 17 1.75 L (59 oz.) = 39 *Note: Depending on factors such as the type of spirits and the recipe, one mixed drink can contain from one to three or more standard drinks.

http://pubs.niaaa.nih.gov/publications/Practitioner/pocketguide/pocket_guide2.ht

APPENDIX F

The Modified Drinking Motives Questionnaire – Revised in Undergraduates (MDMQR)

INSTRUCTIONS: Listed below are 28 reasons people might be inclined to drink alcoholic beverages. Using the five-point scale below, decide how frequently your own drinking is motivated by each of the reasons listed.

If you have never had a sip of alcohol, please check here ☐ and leave this questionnaire blank.

YOU DRINK …

	Almost never/ never	Some of the time	Half of the time	Most of the time	Almost always/ always
1. As a way to celebrate	1	2	3	4	5
2. To relax	1	2	3	4	5
3. Because I like the feeling	1	2	3	4	5
4. Because it is what most of my friends do when we get together	1	2	3	4	5
5. To forget my worries	1	2	3	4	5
6. Because it is exciting	1	2	3	4	5
7. To be sociable	1	2	3	4	5
8. Because I feel more self-confident or sure of myself	1	2	3	4	5
9. To get a high	1	2	3	4	5
10. Because it is customary on special occasions	1	2	3	4	5
11. Because it helps me when I am feeling nervous	1	2	3	4	5

12. Because it's fun	1	2	3	4	5
13. Because it makes a social gathering more enjoyable	1	2	3	4	5
14. To cheer me up when I'm in a bad mood	1	2	3	4	5
15. To be liked	1	2	3	4	5
16. To numb my pain	1	2	3	4	5
17. Because it helps me when I am feeling depressed	1	2	3	4	5
18. So that others won't kid me about not using	1	2	3	4	5
19. To reduce my anxiety	1	2	3	4	5
20. To stop me from dwelling on things	1	2	3	4	5
21. To turn off negative thoughts about myself	1	2	3	4	5
22. To help me feel more positive about things in my life	1	2	3	4	5
23. To stop me from feeling so hopeless about the future	1	2	3	4	5
24. Because my friends pressure me to use	1	2	3	4	5
25. To fit in with a group I like	1	2	3	4	5
26. Because it makes me feel good	1	2	3	4	5
27. To forget painful memories	1	2	3	4	5
28. So I won't feel left out	1	2	3	4	5

APPENDIX G

Young Adult Alcohol Consequences Questionnaire (YAACQ)

INSTRUCTIONS: Below is a list of things that sometimes happen to people either during, or after they have been drinking alcohol. Next to each item below, please mark an "X" in either the YES or NO column to indicate whether that item describes something that has happened to you **IN THE PAST YEAR.**

If you have never had a sip of alcohol, please check here ☐ and leave this questionnaire blank.

In the **past year**…

	NO	YES
1. While drinking, I have said or done embarrassing things.		
2. The quality of my work or schoolwork has suffered because of my drinking.		
3. I have felt badly about myself because of my drinking.		
4. I have driven a car when I knew I had too much to drink to drive safely.		
5. I have had a hangover (headache, sick stomach) the morning after I had been drinking.		
6. I have passed out from drinking.		
7. I have taken foolish risks when I have been drinking.		
8. I have felt very sick to my stomach or thrown up after drinking.		
9. I have gotten into trouble at work or school because of drinking.		
10. I often drank more than I originally had planned.		
11. My drinking has created problems between myself and my boyfriend/girlfriend/spouse, parents, or other near relatives.		
12. I have been unhappy because of my drinking.		
13. I have gotten into physical fights because of drinking.		
14. I have spent too much time drinking.		
15. I have not gone to work or missed classes at school because of drinking, a hangover, or illness caused by drinking.		
16. I have felt like I needed a drink after I'd gotten up (that is, before breakfast).		
17. I have become very rude, obnoxious or insulting after drinking.		
18. I have felt guilty about my drinking.		

	NO	YES
19. I have damaged property, or done something disruptive such as setting off a false fire alarm, or other things like that after I had been drinking.		
20. Because of my drinking, I have not eaten properly.		
21. I have been less physically active because of drinking.		
22. I have had "the shakes" after stopping or cutting down on drinking (eg., hands shake so that coffee cup rattles in the saucer or have trouble lighting a cigarette).		
23. My boyfriend/girlfriend/spouse/parents have complained to me about my drinking.		
24. I have woken up in an unexpected place after heavy drinking.		
29. When drinking, I have done impulsive things that I regretted later.		
30. I have often found it difficult to limit how much I drink.		
31. My drinking has gotten me into sexual situations I later regretted.		
32. I've not been able to remember large stretches of time while drinking heavily.		
33. While drinking, I have said harsh or cruel things to someone.		
34. Because of my drinking I have not slept properly.		
35. My physical appearance has been harmed by my drinking.		
36. I have said things while drinking that I later regretted.		
37. I have awakened the day after drinking and found that I could not remember a part of the evening before.		
38. I have been overweight because of drinking.		
39. I haven't been as sharp mentally because of my drinking		
40. I have received a lower grade on an exam or paper than I ordinarily could have because of my drinking.		
41. I have tried to quit drinking because I thought I was drinking too much.		
42. I have felt anxious, agitated, or restless after stopping or cutting down on drinking.		
43. I have not had as much time to pursue activities or recreation because of drinking.		
44. I have injured someone else while drinking or intoxicated.		

	NO	YES
45. I often have thought about needing to cut down or stop drinking.		
46. I have had less energy or felt tired because of my drinking.		
47. I have had a blackout after drinking heavily (i.e., could not remember hours at a time).		
48. Drinking has made me feel depressed or sad.		

APPENDIX H:

Informed Consent to Participate in a Research Project (Online)

Project Title:	A Study about Childhood Maltreatment and Alcohol
Investigator(s):	Kelsey Julian and Lucy Allbaugh, PhD (faculty sponsor)
Description of Study:	We are interested in how experiences of childhood maltreatment (i.e., childhood physical, sexual, or emotional abuse or neglect) might be related to feelings of shame and guilt, and how such feelings might influence drinking behaviors and thoughts about drinking. We are also interested in how these pathways may be different for men and women. Participants in this study will be asked to provide demographic information, but may choose not to answer if they are concerned such information might uniquely identify them. Participants will be asked about experience of childhood maltreatment, feelings of shame and guilt, patterns of drinking and thoughts about drinking and its consequences. Participants can choose not to answer any question for any reason and still receive SONA credit. The questionnaires will take approximately 45 minutes to complete and you will receive 1 SONA credit for your participation. You can choose to withdraw from the study at any time with no negative consequences to you; you will still receive credit for the study session.
Adverse Effects and Risks:	Participants might experience negative feelings such as anxiety or distress while answering some questions. Counseling services are provided as a free service to undergraduate students. If you are experiencing anxiety or distress, you may contact the University of Dayton Counseling Center at (937) 229-3141. You may call after normal business hours and the on-call staff member will return your call. If you feel any discomfort or distress while participating in the study, you are free to terminate your participation at any time without penalty.
Duration of Study:	The study will take approximately 45 minutes to complete.
Confidentiality of Data:	Your data, collected via a secure platform (Qualtrics), can only be accessed by the researchers working on this study. When your data is downloaded, it will be kept in an electronic file on a password protected computer. Your responses are confidential. To protect your identity, no identifying information is being collected that could link your responses to your name, and your data will be

	securely stored. Your name will not be revealed in any document resulting from this study and only the investigators named above will have access to the data. If you are completing these measures online, we advise that you complete the questionnaires in a private place in order to ensure that your responses to sensitive questions cannot be observed or viewed by others.
Contact Person:	Participants may contact Kelsey Julian, juliank1@udayton.edu, (847) 477-1976 or Lucy Allbaugh, Ph.D., SJ 305, lallbaugh1@udayton.edu, (734) 417-3073. If you have questions about your rights as a research participant you may also contact the chair of the Research Review and Ethics Committee at rrec@udayton.edu, or (937) 229-2713, or in SJ 329.
Consent to Participate:	I have voluntarily decided to participate in this study. I understand that I may voluntarily terminate my participation in this study at any time and still receive full credit. I also understand that the investigator named above may terminate my participation in this study if s/he feels this to be in my best interest. In addition, I certify that I am 18 (eighteen) years of age or older.
	_____ By checking the box below, I certify that I have read the informed consent and consent to participate in this study. If I do not want to participate, I can discontinue the questionnaire at any time. ☐ I have read the informed consent and I consent to participate in this study.

The University of Dayton supports researchers' academic freedom to study topics of their choice. The topic and/or content of each study are those of the principal investigator(s) and do not necessarily represent the mission or positions of the University of Dayton.

APPENDIX I

Debriefing Form

Information about the A Study about Childhood Maltreatment and Alcohol

Objective:
The goal of this study was to examine how childhood maltreatment and feelings of guilt and shame may influence a person's likeliness to drink alcohol to cope with negative emotions and experience alcohol-related problems. Should the findings from this study be significant, they may help us understand how emotions of shame and guilt may be related to drinking-related problem in college students, specifically those who have experienced childhood maltreatment.

Hypothesis:
It is hypothesized that childhood maltreatment will be associated with more alcohol related problems through two serial mediation pathways, one comprised of heightened shame-proneness and drinking to cope motives and a second comprised of heightened trauma-related guilt and drinking to cope motives. Last, it is hypothesized that a third path through guilt-proneness and drinking to cope will not mediate the pathway between childhood maltreatment and alcohol related problems.

Your Contribution:
Your participation in this study will allow the researcher to evaluate how childhood maltreatment, shame, guilt, and drinking behaviors, may be related. You have contributed to research that will increase the knowledge of personal and interpersonal factors that may influence a person's likeliness to engage in problematic drinking.

Benefits:
Participation in today's study was vital in helping to understand who might be at the greatest risk of drinking to cope with negative emotions. Further, your participation in the present study provides you with hands on psychological research experience. In addition, you will receive 1 credit for SONA in exchange for participation.

Assurance of Privacy:
We are studying the relationships among childhood maltreatment, guilt and shame, and drinking behaviors, and are not evaluating you personally in any way. Your responses will be kept completely confidential and your responses will only be identified by a participant number in the data set with other participant numbers. Your name will not be linked to your data, and your name will not be revealed in any document resulting from this study.

Please note:

- If you have any questions please do not hesitate to contact any of the individuals listed on this page.

Contact Information:

Students may contact Dr. Lucy Allbaugh at 937-229-2751 or lallbaugh1@udayton.edu if you have questions or problems after the study. If you have questions about your rights as a research participant you may also contact the chair of the Research Review and Ethics Committee at rrec@udayton.edu, or (937) 229-2713, or in SJ 329. You may also wish to contact that University of Dayton Counseling Center at 937-229-3141, or in person in Gosiger Hall, if you feel the need to process the effects of the study in a safe and confidential place. Please note, the Counseling Center is free for all University of Dayton undergraduate students. If you believe you may currently be in a dangerous situation, it is strongly encouraged that you immediately contact law enforcement and/or inform a counselor for your safety and protection.

Thank you for your participation. I will update your research credit on the online system.

Disclaimer:

The University of Dayton supports researchers' academic freedom to study topics of their choice. The topic and/or content of each study are those of the principal investigator(s) and do not necessarily represent the mission or positions of the University of Dayton.

References:

Dearing, R. L., & Tangney, J. P. (Eds.). (2011). Shame in the therapy hour. American Psychological Association. https://doi.org/10.1037/12326-000

Dvir, Y., Ford, J. D., Hill, M., & Frazier, J. A. (2014). Childhood maltreatment, emotional dysregulation, and psychiatric comorbidities. *Harvard Review of Psychiatry*, *22*(3), 149–161. https://doi.org/10.1097/hrp.0000000000000014

Park, C. L., & Levenson, M. R. (2002). Drinking to cope among college students: prevalence, problems and coping processes. *Journal of Studies on Alcohol*, *63*(4), 486–497. https://doi.org/10.15288/jsa.2002.63.486`