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**Self-Concept Clarity and Alcohol-Related Outcomes:
The Mediating Role of Brooding Rumination**

by

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submitted in partial fulfillment

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Sincerely,

Ralph Baergen, PhD, MPH, CIP
Human Subjects Chair

To John Gilbride, who never, ever lost faith in me.

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No one achieves success alone; it is in the shelter of each other that the people live.

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Self-Concept Clarity and Alcohol-Related Outcomes:
The Mediating Role of Brooding Rumination
Thesis Abstract--Idaho State University (2019)

The relationship between self-knowledge, ruminative processes, and coping styles is unclear, especially as they relate to alcohol use, motivations, and problems. The present study examined the relationship between self-concept clarity and alcohol-related outcomes, and whether rumination mediated these relationships. As past research showed that rumination correlated with depressive and anxiety symptoms, these symptoms were also assessed and used as moderators in the analyses. Subjects were 261 college students who reported they used alcohol in their lifetime. The Self-Concept Clarity Scale, Ruminative Response Styles, Rutgers Alcohol Problems Index, Drinking Motives Questionnaire (Revised), Alcohol Use Disorders Identification Test, Beck Depression Inventory, and Generalized Anxiety Disorder 7-item Scale were administered to participants online. Results yielded a significant relationship between self-concept clarity and drinking to cope, which was mediated by brooding rumination. The relationship between self-concept clarity and alcohol-related problems was not significant, though the indirect effect of brooding rumination was significant. Depressive and anxiety symptoms did not moderate either relationship. No significant relationship was apparent between self-concept clarity and either frequency or quantity of alcohol use, nor was there an indirect effect of brooding rumination. Study limitations, its contribution to the literature and future research directions were discussed.

Keywords: Self-Concept Clarity, Rumination, Drinking to Cope, Alcohol Problems, College Students, Identity Development, Coping

Chapter 1

Introduction and Literature Review

Even though prevention programs have been in effect for decades, hazardous drinking by college students persists (Branscum & Sharma, 2010; Dimeff, Baer, Kivlahan, & Marlatt, 1999; Johnston et al., 2010). The National Institute of Alcohol Abuse and Alcoholism (NIAAA, 2015) has identified the misuse of alcohol as the most important health hazard for college students because of the negative alcohol-related consequences and prevalence of alcohol use disorders. Approximately 25% of college students will experience consequences - ranging from academic problems to injuries and death - related to their drinking at some point during their college career (Wechsler, Dowdall, Maenner, Gledhill-Hoyt, & Lee, 1998), and nearly 30% of individuals with at least some college education will experience an alcohol use disorder in their lifetime (Gilman et al., 2008). Full-time college students were more likely to drink (and drink heavily) compared to same-age peers not in college (SAMHSA, 2014); almost 40% of college students in the United States reported a recent episode of binge-drinking in the two weeks leading up to their assessment (Johnston et al. 2010) compared to approximately 17% of U.S. adults (Kanny, Naimi, Liu, Lu, & Brewer, 2018).

To tailor interventions best suited to the college student population, it is useful to consider the unique characteristics of this population that may contribute to their elevated risk. Statistics provided by the National Center for Education Statistics (NCES, 2017) indicated that 62% of college students were under the age of 24; this rises to 76% if we include those under 30. Students of this age are likely engaged in the protracted psychological process of forging an identity. According to Erikson (1968), this evolving sense of self provides a sense of continuity with the past and direction for future growth. Identity formation is no easy task – young adults

explore various lifestyles, values, groups, and interests, while simultaneously taking on different roles and crucially, developing a multitude of disparate selves related to these many roles (Harter, Bresnick, Bouchev, & Whitesell, 1997). This may be especially salient for the young college student, who is navigating the difficult transition to adulthood. The college experience poses unique identity challenges: students are exposed to a variety of complex new ideas and ideologies, and the curriculum demands that these ideas be reflected on and critically evaluated for truth and self-relevance, often in a residential environment rife with social pressures that bears little resemblance to home. While identity challenges are an obstacle faced by all young adults to some degree, the college environment presents these challenges with a frequency and urgency greater than for those in other environments.

When navigated successfully, this emerging self-definition should provide the developing individual a sense of order and purpose and assist that person in making decisions about future behaviors. Unfortunately, there is evidence that the opposite is also true – an unclear sense of self can make it difficult to evaluate self-relevant feedback and make choices consistent with our idea of who we are or who we want to be (Baumeister, 1986), leading to a diminished ability to select appropriate coping responses to stress (Smith & Wethington, 1996). For some individuals, efforts to overcome this lack of clarity can lead to rumination (Campbell et al., 1996), which has been related to increases in negative affect (Lyubomirsky et al., 1999; Lyubomirsky & Nolen-Hoeksema, 1995; Selby, Anestis, Bender, & Joiner, 2009; Watkins, 2008, 2011) and indirectly to alcohol problems through elevated levels of drinking to cope with the increased levels of negative affect (Bravo, Pearson, & Henson, 2017; Harwell, Cellucci, & Iwata, 2011).

The present study sought to clarify the links among unclear self-concept, depressive rumination, and drinking to cope with negative affect. To do so requires a sharpening of our

conceptual and empirical focus. To that end, I provided working definitions of self-concept clarity, depressive rumination, and coping motives for alcohol use. Next, I discussed how the interplay of low self-concept clarity and rumination may limit the coping skills available to an individual to deal with stress, leading to reduced self-efficacy, increased negative affect, and increased coping motives for alcohol use. Finally, I outlined a study to test the hypothesized relationships.

Self-Concept Clarity

The self-concept is defined as a cognitive schema - an organized knowledge structure that contains traits, values, and episodic and semantic memories about the self, provides goals to direct behavior, conveys a consistent self-image to others, and controls the processing of self-relevant information (Greenwald & Pratkanis, 1984; Kihlstrom & Cantor, 1984, Kihlstrom et al., 1988; Markus, 1977). This structure contains both knowledge components (beliefs, roles, values, goals) and evaluative components (valence of beliefs and self-esteem). The extent to which this structure is clearly and confidently defined, internally consistent, and temporally stable is defined as *self-concept clarity* (SCC; Campbell, 1990; Campbell & Lavelle, 1993; Campbell et al., 1996).

While SCC is correlated with self-esteem, it is not the same. Self-esteem is one subcomponent (evaluative) of a person's self-concept. Further, the correlations between measures of SCC and self-esteem are asymmetrical. While an individual with high self-esteem typically has positive, well-articulated beliefs about the self, the typical low self-esteem individual does not have negative, well-articulated beliefs about the self. Instead, the self-concept of a low-self-esteem individual is more accurately described as neutral, or *undefined*.

Importantly, the undefined nature of the low self-esteem individual's self-concept is characterized by high levels of uncertainty, instability, and inconsistency (Campbell et al., 1996).

High SCC can be conceptualized as a fully synthesized identity, where the individual has a clear self-definition and a consistent, predictable way to process self-relevant information (Campbell, 1990; Campbell et al., 1996; Erikson, 1968). In contrast, an absence of SCC can be conceptualized as identity instability, as individuals lack a clear sense of self over time (Lear & Pepper, 2016). This unclear sense of self can present problems in choosing a coping response to stress. Although numerous past studies have demonstrated an association between coping behavior and self-esteem (e.g., Jorgensen & Dusek, 1990), recent studies have suggested that self-esteem is not an adequate way to account for the influence of self-concept on coping. It can be argued that individuals who have a hard time defining themselves may also have a hard time selecting the appropriate coping response because they find it difficult to define the situation *as it relates to themselves* (Smith & Wellington, 1996). If this were true, individuals with low self-concept clarity should tend to withdraw or be resigned to difficult situations, or to use passive (denial, mental/behavioral disengagement, drug/alcohol use) coping strategies instead of active (taking action, planning, positive reinterpretation) strategies. Indeed, previous studies have confirmed these associations (Smith & Wellington, 1996) even after controlling for gender, perceived social support, anxiety, depression, and self-esteem. Low measures of SCC have also been related to maintenance of emotion dysregulation (Linehan, 1993) and to other maladaptive coping strategies (Roepke et al., 2011). Although some research has implicated specific *types* of self-concept being related to alcohol problems (see Bishop, Weisgram, Holleque, Lund, & Wheeler-Anderson (2005) for a review), no study to date has examined the relationship of SCC

to alcohol problems or drinking to cope with negative affect. This may be because the influence of low SCC is felt through rumination.

Repetitive Thought and Depressive Rumination

Repetitive thought (RT) is defined by Segerstrom, Stanton, Alden, Shortridge, and Diener (2003) as “the process of thinking attentively, repetitively, or frequently about one’s self and one’s world” (p. 909) and has been the source of considerable debate. While theorists such as Martin and Tesser (1996) have argued that rumination is an adaptive cognitive function that facilitates attentional focus on a problem, other theorists have tended to focus on the myriad ways in which rumination has maladaptive outcomes (Nolen-Hoeksema, 1998, 2008). RT appears in several different forms, such as worry, rumination, perseverative cognition, emotional processing, cognitive processing, mental simulation, rehearsal, reflection, and problem solving (Martin & Tesser, 1996; Mor & Winquist, 2002; Papageorgiou & Wells, 2004). Research has shown that although each of these constructs has significant overlap, they also have distinctly diverse outcomes (Watkins, 2008) which have been associated with productive consequences (such as insight, positive changes in appraisal of events, and meaning-making), as well as unconstructive consequences (such as interruption of problem solving and prolonging and elevating negative mood). Unconstructive or maladaptive RT generally takes three forms:

1. *Worry*, an internal focus on possible future negative events which is difficult to dismiss and perceived as uncontrollable (Borkovec, Shadick, & Hopkins, 1991).
2. *Rumination*, which revolves around an instrumental theme and arises from failure to progress towards a goal. Like worry, it is a repetitive and aversive pattern of thought that is difficult to control (Martin & Tesser, 1996; Martin, Tesser, & McIntosh, 1993; Pyszczynski & Greenberg, 1987).

3. *Depressive rumination*, or rumination that accompanies depressed mood and is focused on the depressed mood itself – its symptoms, causes, meanings, and consequences. While those who utilize this as a coping strategy often report that they believe they gain insight from it (Lyubomirsky & Nolen-Hoeksema, 1993), it most often leads to longer periods of depressed mood and interferes with problem solving (Lyubomirsky & Nolen-Hoeksema, 1995; Lyubomirsky, Tucker, Caldwell, & Berg, 1999; Nolen-Hoeksema & Morrow, 1991, 1993; Nolen-Hoeksema, Morrow, & Fredrickson, 1993). Like worry and rumination, it is aversive and difficult to control.

This study was concerned with the consequences of depressive rumination. Accordingly, it is important to clarify the difference between rumination and depressive rumination - and how one may be the antecedent of the other. Several theories of goal pursuit and self-regulation describe rumination as resulting from failure to resolve a goal discrepancy. Whether the discrepancy is between one's self concept and one's standards (Objective Self Awareness Theory; Duval & Wicklund, 1972), between the ought self and the ideal self (Self-Discrepancy Theory; Higgins, 1987), or between a reference point and any goal at all (Control Theory; Carver & Schreier, 1982), RT is instantiated to bring attentional resources to bear on the problem. If progress towards the goal is resumed, RT ceases. However, when the individual is unable to make progress in resolving the discrepancy, and is unable to modify or abandon the goal, the increased attentional focus serves only to make the discrepancy more salient, thus increasing negative affect and moving the individual from RT to rumination.

When rumination happens often enough in the context of feeling sad, down, or depressed, the individual risks forming the habit of depressive rumination. Explicitly considering rumination in its habitual (trait) form lends additional insight and explanatory power to the

proposed model. Wood and Neal (2007) propose that “habits typically are the residue of past goal pursuit: they arise when people repeatedly use a particular behavioral means in particular contexts to pursue their goals” (p. 844). Using this definition, an individual who has acquired the habit of depressive rumination has used rumination to pursue a goal in the context of negative affect often enough that negative affect now cues rumination directly. Recall that RT is constructive when its use causes the individual to resume goal progress, modify the goal to become attainable, or abandon the goal. In this case, negative affect is reduced. Consequently, if negative affect and RT are covarying consistently enough to have become a habit, it would seem to indicate a preponderance of *unresolved* goals – either because they are difficult to modify or abandon, and/or because the individual lacks the coping or problem-solving skills to resume goal progress. Indeed, Watkins and Nolen-Hoeksema (2014) hypothesized these conditions as the likely developmental antecedents of depressive rumination, and the experience of having hard-to-abandon personally relevant goals thwarted (Conway, Mendelson, Giannopoulos, Csank, & Holm, 2004; Nolen-Hoeksema, Larson, & Grayson, 1999; Spasojevic & Alloy, 2002) and a reduced repertoire of coping behaviors and/or a reduced flexibility in selecting behaviors within this repertoire (Cimpian, Arce, Markman & Dweck, 2007; Kamins & Dweck, 1999; Watkins, 2008, 2011) have both been associated with the development and maintenance of depressive rumination.

Although 80% of self-identified ruminators (Watkins & Baracaia, 2001) and 100% of individuals with major depression (Papageorgiou & Wells, 2001) reported various perceived benefits of rumination, such as providing them with insight into their problems or greater efficacy in problem-solving, previous research has demonstrated that rumination interfered with instrumental behavior (Carver, Scheier, & Weintraub, 1989; Lewinsohn, Antonucci,

Breckenridge, & Teri, 1984; Lyubomirsky, Kasri, & Chang, 2003; Miller, 1975; Musson & Alloy, 1988; Pyszczynski & Greenberg, 1987), impaired motivation (Lyubomirsky, S., Tucker, K. L., Caldwell, N. D., & Berg, K., 1999), interfered with problem solving (Morrow, 1990; Morrow & Nolen-Hoeksema, 1990), negatively biased thinking (Greenberg, Pyszczynski, Burling, & Tibbs, 1992; Lyubomirsky & Nolen-Hoeksema, 1995; Lyubomirsky et al., 1999), and may result in increased social isolation and social distance (Nolen-Hoeksema & Davis, 1999; Nolen-Hoeksema, Parker, & Larson, 1994; Schwartz & McCombs-Thomas, 1995). This cascade of negative outcomes has the cumulative effect of prolonging and exacerbating negative mood, such that Lyubomirsky and Tkatch (2003) have suggested that the ultimate negative consequence of depressive rumination is continued depressive rumination.

Relationship Between Self-Concept Clarity and Rumination

One way to understand the relationship between rumination and SCC is through identity theory. According to identity theory, the identity process is a control system (Carver & Scheier, 1982). Burke (1991) explained this control system as a feedback loop with four components: a standard or reference setting (self-concept); an input from the environment (reflected appraisals or self-relevant information); an evaluative process that compares the two; and an output to the environment (behavior) that results from the comparison. This system modifies the output (behavior) to get the input (reflected appraisals) to match the standard (self-concept). This process is largely automatic until the discrepancy becomes too large for automatic processes to handle, at which time conscious attention is brought to bear. Further increases in incongruence bring about increases in distress. This is known as the *identity disruption model of stress* (Burke, 1991).

Structured this way, the identity control system can be understood as having a goal – matching the inputs from the external environment to internal standards. Thus, a lack of SCC leads to difficulty in processing the types of self-relevant information that are necessary to guide behavior in certain situations (Baumeister, 1986; Watkins 2008) - without a stable reference point for comparison, the identity control system fails, and goal discrepancy remains. In this framework, even a negative self-concept may be more useful than an unstable one (Epstein, 1992). Recall that conscious attention is brought to bear when automatic processes fail to reduce goal discrepancy. If the standard of comparison (self-concept) remains sufficiently unclear or unstable, the discrepancy may remain unresolvable despite attentional efforts. If the individual is unable to disengage their attention, this process may result in RT; too much of which can lead to habitual depressive rumination (Carver & Schier, 1982, 1990, 1998; Martin & Tesser, 1989, 1996; Watkins, 2008; Watkins & Nolen-Hoeksema, 2014).

The relationship between rumination and SCC comes into sharper focus when we consider how coping styles may affect the type of rumination in which an individual engages. An investigation into the psychometric properties of the original Response Styles Questionnaire (Nolen-Hoeksema, 1991) found support for a two-factor solution unconfounded by depressive symptoms (Treynor, Gonzales, & Nolen-Hoeksema, 2003). These two factors, *reflection* and *brooding* have been correlated with different coping styles and different outcomes.

Treynor and colleagues (2003) defined brooding as a “*passive* comparison of one’s current situation with some unachieved standards” (p. 256), while reflection was operationalized as “a *purposeful* turning inward to engage in cognitive *problem solving* to alleviate one’s depressive symptoms” (p. 256). Brooding has been associated with passive, maladaptive coping strategies, while reflection has been associated with active, adaptive coping strategies (Burwell

& Shirk, 2007). Treynor et al. (2003) found that reflection was associated with less depression over time, while brooding was associated with more depression. Similarly, Willem, Bijttebier, Claes, and Raes (2011) found that lower levels of reflection were associated with higher drug consumption in adolescents, while higher levels of brooding were associated with higher levels of substance abuse problems.

Levels of SCC may be driving the differences between these two styles. Low levels of SCC make it difficult to engage in problem solving, as it is difficult to achieve congruence between self-relevant feedback and an internal standard when the internal standard is unstable or inconsistent. Instead, people may find themselves relegated to a passive coping style (questioning “why?” and focusing on emotions) because they have no real way of moving to concrete problem-solving steps. Indeed, Smith and Wethington (1996) have demonstrated that high levels of self-concept clarity were associated with active coping styles, while low levels of self-concept clarity were associated with passive coping styles – even after controlling for gender, perceived social support, anxiety, depression, and self-esteem. Additionally, Campbell et al. (1996) has demonstrated that low levels of self-concept clarity were associated with brooding, while higher levels were weakly associated with reflection, albeit while using a different scale (RRQ; Trapnell & Campbell, 1995). Despite the abundance of inferential links between SCC and rumination, no study to date has directly examined this relationship.

Drinking Motives and Drinking to Cope

Investigation of risk factors for alcohol problems necessarily requires an understanding of the motivations that underlie drinking behavior. Motivational models of alcohol use share two assumptions: first, it is assumed that people use alcohol to obtain an important outcome (Cox & Klinger, 1988); second, it is assumed that alcohol use that is driven by different needs (or that

serves different functions) will be characterized by distinctive patterns of precursors and consequences (Cutter & O'Farrell, 1984; Cooper, 1994). It follows that if we understand the motive for alcohol use, we should also gain insight into the circumstances that may invoke those motivations, how much the person may drink to achieve their desired end, and the likely consequences of their drinking behavior. Simply put, people drink for a reason, and those reasons can tell us a great deal about what came before and what is likely to come after.

Cooper (1994) demonstrated a framework for characterizing drinking motives along two dimensions: valence (positive or negative) and source (internal or external). Crossing these dimensions results in four types of motivation:

1. *Enhancement*, which is internally generated and positively reinforced. An example is a person who drinks to enhance their own positive mood.
2. *Social Rewards*, which is externally generated and positively reinforced. An example is a person who drinks while socializing because it makes the experience more fun.
3. *Coping with negative affect*, which is internally generated and negatively reinforced. An example of this is someone who drinks to manage an aversive affective state like sadness, rejection, frustration, or disappointment.
4. *Conformity*, which is externally generated and negatively reinforced. An example of this is someone who drinks to be liked, or to fit in.

Though all result in some form of drinking behavior, motivational models of alcohol use assume that each of these motives represents a distinct pattern of behavior. Hence, it should be more fruitful to study a specific motivation for drinking (and thus its related pattern of antecedents and consequences) than to inquire about alcohol use in general.

Although not all individuals who drink develop alcohol-related problems, young adults who use alcohol to cope with negative affect (hereafter referred to as Drinking to Cope or DTC) may be at greater risk (Wray, 2012; Williams, Vik, & Wong, 2015). Previous studies have demonstrated that endorsement of DTC motives predicted more problematic drinking than those who reported social drinking or drinking for enhancement effects (Cooper, 1994; Cooper, Russell, Skinner, & Windle, 1992; Holyfield, Ducharme, & Martin, 1995; Kuntsche, Knibbe, Gmel, & Engels, 2005; Rafnsson, Jonsson, & Windle, 2006), and those who drink to cope were more likely to drink alone, possibly exacerbating isolation and social distance. Further, previous research has demonstrated that DTC was significantly positively related to drinking problems, even after controlling for usual alcohol use (Cooper, 1994). In a recent study examining the relationship between difficulties with emotion regulation and problematic drinking behavior, Aurora and Klanecky (2016) found that coping motives fully mediated the relationship, consistent with previous research suggesting that drinking to cope is related to emotion regulation difficulties (Cooper, 1994; Newcomb et al., 1988; Shaver, Vellieux, & Ham, 2013; Vellieux, Skinner, Reese, & Shaver, 2014). Additionally, reliance on alcohol to cope has been shown to lead to further reductions in adaptive coping and increased reliance on alcohol to meet one's needs (Cooper, Russell, & George, 1988). Together, these findings suggest that DTC is indicative of a more maladaptive type of alcohol use than drinking to pursue positive goals.

Relationship Between Drinking to Cope and Rumination

There has been a fair amount of research examining the relationship between rumination and drinking to cope motivations. Bravo and colleagues (2017) examined the role of proposed sub-components of rumination (problem-focused thoughts, counterfactual thinking, repetitive thoughts, and anticipatory thoughts; see Smith & Alloy (2009) for a review) as mediators

between depressive symptoms and DTC and found that the total indirect effect of all the proposed sub-components was significantly related to DTC. Similarly, Nolen-Hoeksema and Harrell (2002) found that rumination was associated with a greater tendency to turn to alcohol and other drugs to cope with depressive symptoms and negative affective states. Nolen-Hoeksema (1991) found a significant positive relationship between using ruminative responses to negative mood and engaging in reckless behavior; she further hypothesized that this reckless behavior, as well as alcohol and substance abuse, was driven by a ruminator's need to "turn to drastic measures to stop their ruminations" (p. 573). Along the same lines, Cisela, Dickson, Anderson and Neal (2011) found that some facets of negative RT were related to increased alcohol use and binge drinking in a college sample. Based on their findings, they also suggested that although affective states such as hostility, anger, anxiety, and sadness are all aversive and prompt a coping response, "It is possible that individuals may drink in order to interrupt the repetitive, obsessive thoughts which exacerbate and prolong negative moods, rather than simply drinking due to the affective state itself" (p. 149).

Relationship Between Drinking to Cope and Self-Concept Clarity

To date, there has been little research directly examining the relationship between self-concept clarity and alcohol use or drinking to cope motivations. However, there have been several studies that suggest a relationship between the two. Baumeister (1991) argued that excessive alcohol consumption can be an attempt to "escape from the self," particularly among individuals high in self-consciousness. Scala et al. (2018) found that negative affect predicted greater subsequent urges to self-injure in a clinical population, but only when self-concept clarity was low; they suggested that self-concept clarity has a protective effect against self-injurious urges in the context of negative affect, and further suggested that this effect may be trans-

diagnostic. Similarly, Ritche, Sedikides, Arndt, and Gidron (2011) found that self-concept clarity either fully or partially mediated the relationship between stress and subjective well-being, and this effect was independent of neuroticism. Stucke and Sporer (2002) found that low levels of self-concept clarity predicted negative emotions and aggression following failure, while Bechtoldt, DeDreu, Nijstad, and Zapf (2010) found that elevated levels of self-concept clarity were associated with cooperation with others during problem solving. Finally, in a study examining links among the self, stress, and psychopathological distress during emerging adulthood, Schiller, Hammen, and Sharar (2016) found that only low self-concept clarity emerged as a significant predictor of psychopathological distress. While none of these studies point to a direct relationship with coping motives for alcohol use, they do suggest that low levels of self-concept clarity may be a key variable in determining whether the coping response to stress is adaptive or maladaptive. If we add this to self-concept clarity's relationship to ruminative style and general coping styles, it is reasonable to suspect that the interaction of ruminative style and self-concept clarity may also predict coping motives for alcohol use. That no one has explored this relationship to date underscores the need for this study to clarify what relationships exist.

The Present Study

The relationship between self-concept clarity and rumination is empirically and theoretically supported but is often unclear and quite possibly reciprocal. The relationship between ruminative response styles and drinking to cope motivations is similarly supported but is difficult to test experimentally. Given that Trapnell and Campbell (1995) and Treynor et al. (2003) have demonstrated support for brooding rumination as a distinct construct, I focused on brooding rumination as a mediator rather than the broader construct of depressive rumination.

Brooding rumination has an established relationship with low self-concept clarity, passive coping styles, and substance abuse. Further, Treynor et al. (2003) have demonstrated that the brooding rumination subscale of the Ruminative Response Scale produces a measure of rumination that is not as strongly correlated with depressive symptoms as the full scale. Therefore, focusing on brooding rumination as a mediator should result in a more parsimonious model. The relationship between self-concept clarity and alcohol use, motivations, and related problems has not been established, but similar research on self-concept clarity, coping motives, and other maladaptive outcomes suggest a relationship is plausible. The present study examined the relationships among these variables using a mediation model. A mediation model seeks to explain the relationship between an independent variable (e.g., SCC) and a dependent variable (e.g., DTC and alcohol-related problems) through the inclusion of a third, or mediating, variable (e.g., brooding rumination). Rather than directly inferring a causal relationship, a mediation model suggests that the independent variable influences the mediator variable, which then influences the dependent variable. Mediation analyses are most effective when the independent variable and the dependent variable do not have a clear or definite connection, as in the present study. Four hypotheses were tested.

Hypothesis 1.

Brooding rumination mediates the relationship between SCC and DTC. Specifically, I predicted that low levels of SCC are associated with increased brooding rumination, and that increased brooding rumination is related to increased DTC. Though I did not measure negative affect or subjective distress, the literature has well-established that rumination is, itself, an aversive emotional state which tends to increase the longer it persists. Thus, in this hypothesis, rumination represents the negative affect that an individual may be drinking to cope with.

Rumination as a mediator between distress and maladaptive coping has a fair amount of theoretical and empirical support (Selby et al., 2009; Bravo et al., 2017; Magidson et al., 2013). If we conceptualize low self-concept clarity as a form of identity distress and DTC as a form of maladaptive coping, this model is plausible.

Hypothesis 2.

Brooding rumination mediates the relationship between SCC and alcohol-related problems. As in the first hypothesis, low self-concept clarity may increase an individual's tendency to ruminate, which may in turn lead to an increase in DTC. Past research has shown that using alcohol and drugs to cope with stress or distress increases the probability that individuals will develop problems suggesting abuse or dependence (Cooper, Frone, Russell, & Pierce, 1997; Lengua & Stormshak, 2001, Nolen-Hoeksema & Harrell, 2002).

Hypotheses 3 & 4.

Brooding rumination mediates the relationship between SCC and both frequency and quantity of drinking. If alcohol use covaries enough with negative mood - either as a response to the negative mood or as a response to the rumination that accompanies it - the individual risks alcohol becoming a habitual response. In this case, it is reasonable to expect that the frequency of alcohol use would increase. Similarly, if alcohol is deployed as a coping response with increasing frequency, quantity should also increase to maintain a similar psychoactive affect as the individual builds up a tolerance.

Exploratory analyses.

The literature supports some examination of factors that are not the focus of this study. Firstly, examination of the effects of depressive and anxiety symptoms as possible moderators is warranted. Although focusing on brooding rumination may alleviate some of the statistical

overlap between rumination and depression, there is evidence that rumination predicts depressive symptoms, depressive disorders, anxiety symptoms, and mixed anxiety depression (Nolen-Hoeksema, 2000), and it has been hypothesized that ruminative thinking may be a root cause of anxiety and depression. Accordingly, depressive and anxiety symptoms were examined as possible moderators in each path of the analysis. Secondly, examination of gender differences is warranted. It has been established that women tend to ruminate more than men (Nolen-Hoeksema & Harrell, 2002), and that men tend to drink to cope with distress more than women (Cooper et al., 1992; Cooper, Frone, Russell, & Pierce, 1997). While this study sought to determine the effects of rumination beyond the contributions of gendered effects, an exploratory analysis of these effects was conducted to determine group differences on ruminative style and drinking to cope. Thirdly, the literature supports an examination of the effect of time spent in college on identity development, such that those in their first year in college may differ significantly on SCC than those in later years. Accordingly, an exploratory analysis was conducted to determine if an individual's year in college contributed significantly to the model. Fourthly, it seems plausible that an individual's religion, spiritual practice, or existential worldview may have an effect on their self-concept, though its effect on the *clarity* of self-concept is unknown. While it is beyond the scope of this study to determine this effect, an exploratory analysis was conducted to determine if individuals who report a spiritual practice differ significantly from those who do not. Finally, I examined whether any racial (white vs. non-white) differences were apparent.

Chapter 2

Methods

Participants

Participants were recruited using Idaho State University's Psychology Department Subject Pool. Age was restricted to those 18 or above. Although research examining the effect of rumination as a mediator between various measures of psychological distress and maladaptive outcomes have found medium effect sizes (Bravo et al., 2017; Caselli et al., 2010; Harwell, Cellucci, & Iwata, 2011), the paucity of research on self-concept clarity makes estimating an effect size for the hypothesized relationship difficult. Consequently, G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) was utilized to calculate sample size using Linear multiple regression: Fixed model, R² deviation from zero with an effect size of $f^2 = .06$. This represents a compromise approach between a small effect size ($f^2 = .02$) and a medium effect size ($f^2 = .15$) while still being slightly more conservative towards the smaller effect size. I also specified a Type I error rate of $\alpha = .05$, 7 predictors, and power ($1 - \beta$) = .80. This resulted in a suggested sample size of 247. The final data set consisted of 261 currently enrolled students who reported using alcohol in their lifetime. The mean age was 22.89 (SD = 6.68) with most participants identifying as White (80.5%) and female (78.9%). More than half of the sample reported a religion or spiritual practice (57.9%), as compared to those who reported themselves as None/Atheist/Agnostic (32.6%), or those who preferred not to answer (9.6%). Participants were mostly in their first year of college (41.4%), followed by second year (27.2%), third year (17.2%), fourth year (9.2%), and fifth year and beyond (4.2%). Participants were compensated for their time with course credit.

Measures

Self-Concept Clarity Scale (SCCS; see Appendix A): The SCC Scale (Campbell et al., 1996) is a 12-item self-report measure of the degree to which participants have a clear notion of who they believe themselves to be. Respondents were asked to indicate on a 5-point Likert-type scale the strength of their agreement with each statement (e.g., “My beliefs about myself often conflict with one another”). The scale ranges from 1 (*strongly disagree*) to 5 (*strongly agree*), though some items are reverse coded. Lower scores indicate less clarity. Scores on each item were summed to produce the total score used in the analysis. Previous research has demonstrated that this scale has high internal consistency ($\alpha = .86$) as well as adequate test-retest reliability ($r = .79$ and $r = .70$). In this study, the internal consistency remained high ($\alpha = .88$).

Ruminative Response Scale (RRS; see Appendix B): The RRS (Treynor et al., 2003) is a self-report measure that assesses the frequency of thinking or doing certain things while sad, down, or depressed. Respondents were asked to indicate on a 4-point Likert-type scale how often they engage in each item (e.g., “think about how alone you feel”) when they feel sad, down, or depressed. The scale ranges from 1 (*almost never*) to 4 (*almost always*). The RRS has three subscales: Brooding, Reflection, and Depression-related; for each, higher scores reflect a greater tendency to engage in the specified form of rumination in response to stress. As previously stated, this study focused only on the brooding subscale, although the full scale was administered. In previous research, the brooding subscale has demonstrated acceptable internal consistency ($\alpha = 0.77$) and test-retest reliability ($r = 0.62$) (Conway, Csank, Holm, & Blake, 2000; Treynor et al. 2003; Roelofs et al. 2006). Scores on each item in the scale were summed to produce the total score used in the analysis. In this study, internal consistency of the brooding subscale was slightly higher than what was reported in the current literature ($\alpha = .84$).

Drinking Motives Questionnaire - Revised (DMQ-R; see Appendix C): The DMQ-R (Cooper, 1994) was used to assess participants' motives for drinking alcohol. The DMQ-R is a 20-item self-report questionnaire for use among adolescents, designed to measure the relative frequency of drinking for four conceptually and empirically distinct reason dimensions (i.e. enhancement, social, conformity, and coping motives). Respondents were instructed to consider all the times they have drunk alcohol and to indicate how often they drink for each given motive (e.g., "To forget your worries"). Respondents rated relative frequency of drinking for each of the 20 items on a 5-point Likert-type scale ranging from 1 (*almost never/never*) to 5 (*almost always/always*). Higher scores on each of the four scales indicates a higher frequency of drinking for that motive. Scores on each item in a scale were summed to produce the total score used in the analysis. Only the coping motives scale was used in this study. An examination of the psychometric properties of the measure by Kuntsche, Stewart, and Cooper (2008) revealed that the DMQ-R exhibited good internal consistency ($\alpha = .86$). In this study, internal consistency of the coping motives subscale was similar to previous studies ($\alpha = .86$).

Alcohol Use Disorders Identification Test (AUDIT; see Appendix D): The AUDIT is a 10-item alcohol screen that reliably identifies individuals who are hazardous drinkers or have active alcohol use disorders. Each AUDIT question has five answer choices that assess frequency (i.e., "4 or more times a week") or quantity (i.e., "5 or 6") of alcohol use. In this study, the AUDIT will only be used to assess frequency and quantity of drinking. Question 1 ("How often do you have a drink containing alcohol?") was used to assess frequency. Question 2 ("How many standard drinks containing alcohol do you have on a typical day when drinking?") was used to assess quantity. In this study, internal consistency of the measure was high ($\alpha = .83$).

Rutgers Alcohol Problems Index (RAPI; see Appendix E): The RAPI (White & Labouvie, 2000) is an 18-item well-validated self-report measure of drinking problems commonly experienced by both clinical and community samples of adolescents and young adults (Leccese & Waldron, 1994; White & Labouvie, 1989, 2000). Respondents were asked to indicate on a 4-point Likert-type scale how many times during the last 3 years they had experienced specific negative consequences (e.g., “Neglected your responsibilities”) due to their alcohol use. The scale ranges from 0 (*none*) to 3 (*more than 5 times*). Previous research has demonstrated that this measure has high internal consistency ($\alpha = .91$). Scores on each item were summed to produce the total score used in the analysis. In this study, internal consistency was slightly lower than what has been reported in the literature ($\alpha = .89$), though it remained adequate.

Generalized Anxiety Disorder 7-item scale (GAD-7; see Appendix F): The GAD-7 (Spitzer, Kroenke, Williams, & Löwe, 2006) was used to assess participants’ Generalized Anxiety Disorder symptoms. The GAD-7 is a short seven item self-report questionnaire designed to screen for symptoms of generalized anxiety disorder. Respondents were asked to consider how many times in the past two weeks they had been bothered by each item. Respondents rated the relative frequency of being bothered by each of seven items (e.g., “Worry too much about different things”) on a 4-point Likert-type scale. The scale ranges from 0 (*not at all*) to 3 (*nearly every day*). The points are summed to produce a score that is reflective of the severity of anxiety symptoms, with 0-5 considered insignificant, 6-10 considered mild, 10-15 considered moderate, and 15-21 considered severe. The GAD-7 demonstrates adequate internal consistency ($\alpha = .79 - .91$) and has been shown to have good reliability and validity when compared to older measures such as the Generalized Anxiety Disorder Questionnaire IV and the Penn State Worry

Questionnaire (Dear, et al., 2011). In this study, internal consistency was on the high end of the range of previously reported results ($\alpha = .91$).

Beck Depression Inventory (BDI; see Appendix G): The BDI (Beck, 1961) was used as a screening measure to control for the presence of depressive symptoms. The BDI is a 21-item self-report rating inventory that measures characteristic attitudes and symptoms of depression. Respondents were presented with 21 groups of four statements each (e.g., “I do not feel sad”, “I feel sad”, “I feel sad all the time and I can’t snap out of it”, “I am so sad and unhappy that I can’t stand it”) and, for each group, were asked to choose the statement that best describes themselves over the past two weeks. Items are rated from 0 to 3 based on the severity of each item. Scores on each item were summed to produce the total score used in the analysis. Total score of 0-13 is considered minimal range, 14-19 is mild, 20-28 is moderate, and 29-63 is severe. The BDI demonstrates high internal consistency ($\alpha = .81$) for non-psychiatric populations (Beck, Steer, & Garbin, 1988). In this study, internal consistency was higher than previously reported results ($\alpha = .92$).

Demographic Questionnaire (see Appendix H): Participants were asked to complete a brief demographics questionnaire. This questionnaire included questions about their age, race, gender, year in college, and religion.

Procedures

Measures enumerated above were administered online using Qualtrics software. Participants completed the surveys on their own computers. Participants were first shown an informational page to introduce them to the study. This page included information about the purpose of the study and what would be required of participants. Persons were eligible to participate in the study if they were 18 years of age or older, were able to read and write English,

were currently enrolled students at Idaho State University, and had used alcohol in their lifetime. After being introduced to the study, participants were instructed to fill out the consent form, after which the surveys were presented to them. There was some concern about priming effects, as questions on the RSS explicitly ask people what they do when they feel sad down or depressed. Participants who are presented with the BDI first may have had a negative mood already instantiated. To address this issue, the SCCS, RSS, AUDIT, and RAPI were always administered first (though in random order), while the BDI, GAD-7, and Demographics measures were administered last, and in this order. After completing all surveys, participants were presented with a list of resources, thanked, and awarded course credit.

Plan of Analyses

The means, standard deviations, and distribution of all variables were examined to assess conformity with statistical assumptions of multiple linear regression models. Continuous variables that were not normal were transformed or recoded as dichotomous variables. I examined the correlations among all major variables. The primary hypothesis, that brooding rumination mediates the relationship between self-concept clarity and the four outcome variables (drinking to cope, alcohol-related problems, frequency of alcohol use, and quantity of alcohol use) were subjected to mediation analysis as represented by Figure 1. Mediation analysis is accomplished by conducting multiple linear regression analyses to examine the relationship from the independent variable (i.e. SCC) to the mediator (i.e. brooding rumination) (the *a* path), the mediator to the outcome variable (i.e. DTC, quantity/frequency of alcohol use, and alcohol-related problems) controlling for the effect of the independent variable (the *b* path), and the predictor to the outcome variable after accounting for the effect of the mediator (*c'*). The significance of the indirect effect (*ab*) is evaluated by the asymmetric confidence interval

(MacKinnon, Lockwood, & Williams, 2004). This approach to mediational analysis takes the shape of the distribution into account when calculating the confidence limits. Simulation studies have found that the asymmetric confidence interval is less conservative and has accurate Type I error when compared to other methods. Consequently, the mediated effect was tested via the PRODCLIN2 program (MacKinnon, Fritz, Williams, & Lockwood, 2007). Confidence intervals that do not include zero are considered significant. Age, gender, ethnicity, depressive symptoms, and anxiety symptoms were entered into the regression models as covariates. Upon conducting the regression analyses, I inspected the outcomes to determine if each covariate contributed significantly to the model. Covariates that did not contribute significantly were dropped from the final analysis to increase statistical power. Additionally, depression (BDI; Figure 2) and anxiety (GAD7; Figure 3) were examined as potential moderators of each path in the regression analyses. If the analysis indicated that depression or anxiety significantly moderated a regression path, the interaction effect was included as a moderator of that path in the final mediation model.

If the analysis indicated that depression or anxiety did not significantly moderate a path, the interaction term was dropped from the model.

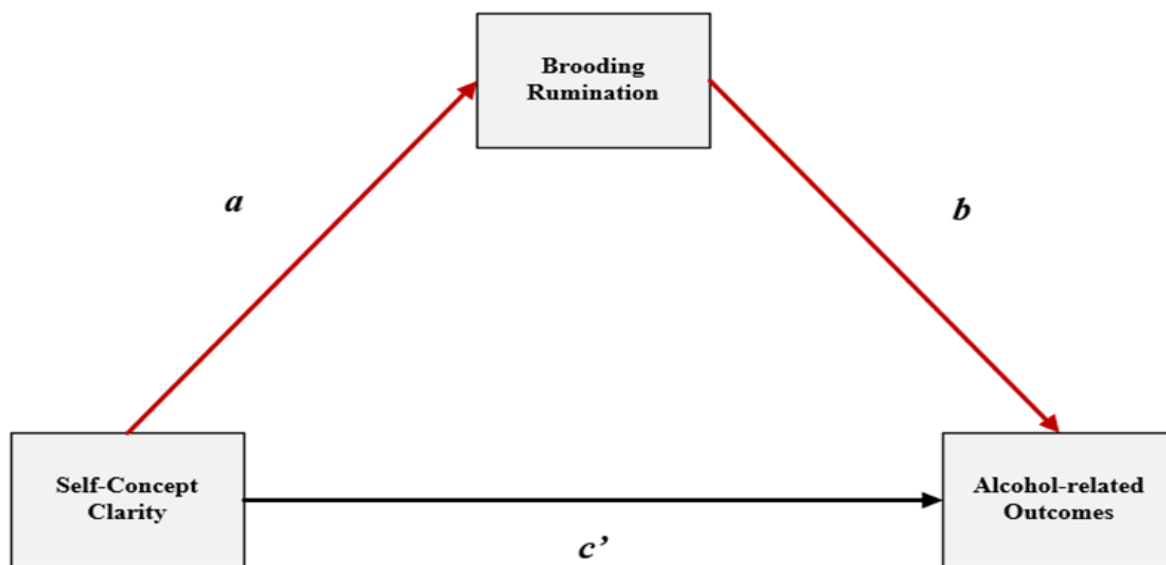


Figure 2. The model used for this study, with mediation path highlighted

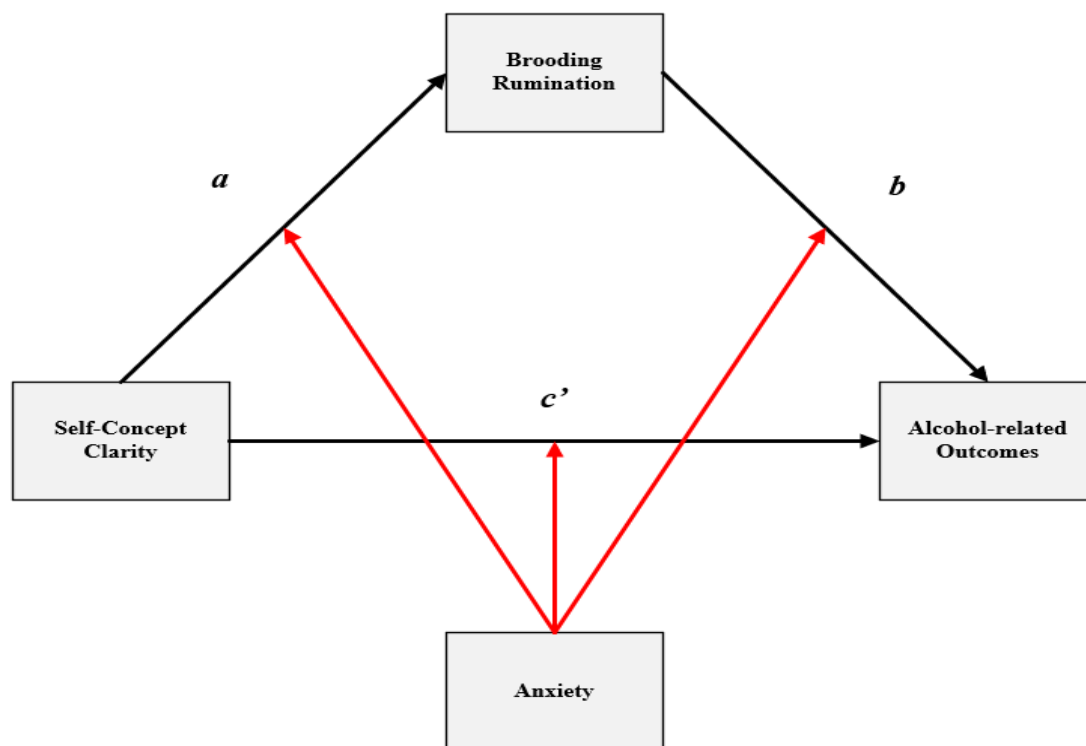


Figure 1. The model used in this study, with potential moderation paths of anxiety highlighted

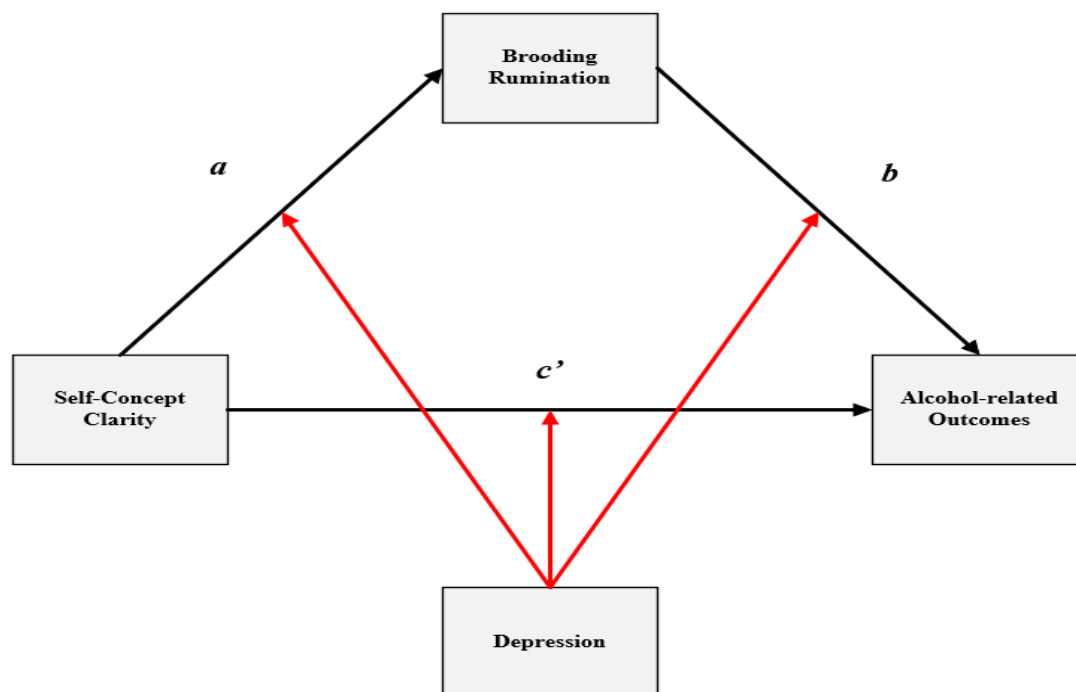


Figure 3. The model used for this study, with potential moderation paths of depression highlighted

Chapter 3

Results

Descriptive Analyses

Tests of normality for major variables.

The assumption of normality was assessed in all major variables. Both predictor variables (SCC and RRS-brooding) were normally distributed. However, examination of the outcome variables revealed that none were normally distributed. For DTC, calculations indicated that skewness ($S = .73$, $S_s = .15$, $z = 4.76$) significantly deviated from normal, while kurtosis ($K = -.34$, $S_K = .30$, $z = -.04$) did not. Analysis of the histogram indicated that the variable had a negative skew, such that the majority of observations fell to the left of the mean. The probability plots also indicated that the variable substantially deviated from normality. A log transformation was applied, yielding a variable with normally distributed skewness ($S = .07$, $S_s = .15$, $z = .44$). The transformation increased kurtosis ($K = -1.08$, $S_K = .30$, $z = -1.46$), though it remained normally distributed. Inspection of the histogram and probability plots confirmed that the variable no longer deviated from normal. The transformed variable was used in subsequent analyses, and further discussion of the DTC variable will refer to the transformed variable.

For the RAPI, calculations indicated that skewness ($S = 1.89$, $S_s = .15$, $z = 12.50$) and kurtosis ($K = 4.54$, $S_K = .30$, $z = 15.13$) deviated severely from normal. Analysis of the histogram indicated that the variable had a negative skew, which was further supported by examination of the probability plots. Additionally, the distribution exhibited a pronounced peak. A log transformation was applied, yielding a variable with more normally distributed skewness ($S = -.33$, $S_s = .15$, $z = -2.21$) and kurtosis ($K = -.33$, $S_K = .30$, $z = -1.11$), though skewness remained

slightly significant. Inspection of the histogram and probability plots of the transformed variable indicated that the shape of the distribution was in the acceptable range. The transformed variable was used in subsequent analyses, and further discussion of RAPI scores will refer to the transformed variable.

Frequency of drinking was not normally distributed, as calculations indicated that while kurtosis was within normal range ($K = .14$, $S_K = .30$, $z = .46$), skewness was not ($S = .85$, $S_S = .15$, $z = 5.60$). Visual inspection of the histogram revealed that the variable exhibited substantial negative skew. Viewing the probability plots confirmed that the variable deviated substantially from normality. A log transformation was applied, yielding a variable with normal skewness ($S = .14$, $S_S = .15$, $z = .94$) and kurtosis ($K = -.14$, $S_K = .30$, $z = -.45$). Inspection of the histogram and probability plots of the transformed variable confirmed that the transformed variable was normally distributed. The transformed variable for frequency of drinking was used in the subsequent analyses, and further discussion of frequency of drinking will refer to the transformed variable.

Quantity of drinking was not normally distributed, as analyses revealed that while kurtosis approached the acceptable range ($K = .60$, $S_K = .30$, $z = 1.99$), skewness did not ($S = .92$, $S_S = .15$, $z = 6.09$). Visual inspection of the histogram affirmed that the variable was negatively skewed, which was confirmed by viewing the probability plots. A log transformation was applied, yielding a variable with more normally distributed skewness ($S = .05$, $S_S = .15$, $z = .33$) though kurtosis was increased ($K = -1.09$, $S_K = .30$, $z = -3.62$). Inspection of the histogram and probability plots of the transformed variable confirmed that the distribution of the transformed variable was acceptable. The transformed variable for quantity of drinking was used in the

subsequent analyses, and further discussion of frequency of drinking will refer to the transformed variable.

Descriptive statistics for all major variables used in the analyses are presented in Table 1.

Table 1

Mean, SD, Skewness, and Kurtosis of major predictor and outcome variables

	Mean	SD	Skewness	Kurtosis
Self-Concept Clarity	36.671	10.270	.156	-.864
Brooding Rumination	10.926	3.830	.352	-.780
Drinking to Cope (log)	.995	.199	.067	-1.078
Alcohol Problems (log)	.831	.388	-.334	-.333
Frequency of Drinking (log)	.423	.135	.142	-.136
Quantity of Drinking (log)	.261	.211	.049	-1.090

Tests of normality for covariates.

The assumption of normality was tested in all continuous covariates, none of which were normally distributed. For age, analysis indicated that skewness ($S = 2.64$, $S_s = .15$, $z = 17.60$) and kurtosis ($K = 8.43$, $S_K = .30$, $z = 28.10$) deviated substantially from normal, which was supported by inspection of the histogram and probability plots. A log transformation was applied, yielding a variable with more normally distributed skewness ($S = 1.80$, $S_s = .15$, $z = 12.00$) and kurtosis ($K = 3.27$, $S_K = .30$, $z = 10.90$), though both remained significantly deviated from normal. The transformed variable for age was used in the subsequent analyses, and further discussion of age will refer to the transformed variable.

For BDI scores, calculations indicated that skewness ($S = .77$, $S_s = .15$, $z = 5.13$) deviated moderately from normal, while kurtosis ($K = -.09$, $S_K = .30$, $z = -.30$) did not. Both the histogram and the probability plots confirmed that the variable deviated from normality. A square root transformation was applied, yielding a variable with normally distributed skewness ($S = -.19$, S_s

= .15, $z = -1.27$) and kurtosis ($K = -.37$, $S_K = .30$, $z = -1.23$) which was used in subsequent analyses. Further discussion of BDI scores will refer to the transformed variable.

Regarding GAD-7 scores, analysis revealed that skewness ($S = .54$, $S_s = .15$, $z = 3.60$) deviated moderately from normality, while kurtosis ($K = -.61$, $S_K = .30$, $z = -2.03$) deviated slightly. Visual inspection of the histogram and probability plots confirmed that the variable deviated from normality. A square root transformation was applied, yielding a variable with improved skewness ($S = -.45$, $S_s = .15$, $z = -3.00$) and normal kurtosis ($K = -.27$, $S_K = .30$, $z = -.90$), though skewness remained significant. The transformed variable for GAD-7 was used in the subsequent analyses, and further discussion of GAD-7 scores will refer to the transformed variable.

Due to majority of White participants in the current sample relative to other ethnic groups, the ethnicity variable was recoded into a dichotomous variable consisting of White (80.5%) vs. Non-white (19.2%) participants. Similarly, though data were collected on which spiritual practice participants identified with, the variable was recoded into a dichotomous variable representing the presence (57.9%) or absence (32.6%) of a spiritual practice, with 9.6% declining to answer the question.

Correlations among major variables.

Zero-order correlations between predictor variables and the outcome variables were examined and are presented in Table 2. Several variables were transformed due to lack of normality (see above).

For predictor variables, SCC was significantly correlated with RRS-brooding ($r = -.53$, $p < .001$), DTC ($r = -.35$, $p < .001$), and the RAPI, ($r = -.18$, $p = .004$), such that participants with

lower self-concept clarity tended to brood more often, have increased drinking to cope motivations, and experience more alcohol-related problems. RRS-brooding (in addition to the aforementioned correlation with SCC) was significantly correlated with DTC ($r = .36, p < .001$), and the RAPI ($r = .28, p < .001$). Participants who brooded tended to experience greater drinking to cope motivations and reported more alcohol-related problems.

For outcome variables, DTC (in addition to the aforementioned correlations with SCC and RRS-brooding) was significantly correlated with quantity of drinking ($r = .24, p < .001$), frequency of drinking ($r = .30, p < .001$), and the RAPI ($r = .55, p < .001$). These correlations indicate that participants with increased drinking to cope motivations tended to drink greater quantities of alcohol, drink more often, and experience more problems related to their drinking. Frequency of drinking (in addition to the aforementioned correlation with DTC) was significantly correlated with the RAPI ($r = .30, p < .001$) and quantity of drinking ($r = .29, p < .001$). The data indicate that participants who drank more frequently also tended to drink a greater quantity of alcohol and experience more problems from their drinking. Finally, quantity of drinking was significantly correlated with the RAPI ($r = .29, p < .001$), affirming that participants who drank greater quantities of alcohol tended to experience more problems related to their drinking.

With regard to covariates, SCC was significantly correlated with age ($r = .20, p = .002$), such that older participants tended to have higher self-concept clarity scores. SCC was also significantly correlated with GAD-7 ($r = -.50, p < .001$), and BDI ($r = -.63, p < .001$), such that participants with higher self-concept clarity tended to have lower scores on measures of depression and anxiety. Similarly, RRS-brooding was significantly correlated with GAD-7 ($r = .49, p < .001$) and BDI ($r = .57, p < .001$), such that participants who scored higher on brooding

rumination tended to have higher scores on measures of depression and anxiety. There was no relationship between RRS-brooding and age, nor were there significant correlations were found for ethnicity or gender with either of the predictor variables. For outcome variables, DTC was significantly correlated with BDI ($r = .45, p < .001$) and GAD-7 ($r = .49, p < .001$), indicating that participants with more depressive and anxious symptoms also reported higher levels of drinking to cope motivations. RAPI was significantly correlated with age ($r = .15, p = .02$), which suggests that older participants tended to report more alcohol-related problems. Additionally, RAPI was significantly correlated with BDI ($r = .33, p < .001$) and GAD-7 ($r = .33, p < .001$), demonstrating that participants who reported more depressive and anxious symptoms tended to have more problems related to their drinking. Similarly, frequency of drinking was significantly correlated with age ($r = .18, p = .003$), such that older participants reported more frequent drinking. Quantity of drinking was not significantly correlated with any covariate.

Table 2

Zero-order correlations of all major predictor and outcome variables

	1	2	3	4	5	6
1. Self-Concept Clarity	---					
2. Brooding Rumination	-.532**	---				
3. Drinking to Cope	-.352**	.359**	---			
4. Alcohol Problems (log)	-.181*	.282**	.550**	---		
5. Frequency of Drinking (log)	-.003	-.022	.238**	.299**	---	
6. Quantity of Drinking (log)	.067	.051	.299**	.282**	.285**	---

Note. * $p < .05$, ** $p < .01$.

Group differences on demographic items.

Before conducting analyses of the proposed hypotheses, an examination of the relationship between major variables and demographic variables was conducted.

Predictor variables.

Gender and ethnicity had no significant relationship with SCC (gender: $t(254) = 1.46, p = .14$; ethnicity: $t(255) = -.64, p = .52$). In each case, the magnitude of the differences in means was small (gender: $M_{diff} = 2.34$, 95% CI [- .81, 5.48], $\eta^2 = .008$; ethnicity: $M_{diff} = -1.04$, 95% CI [-4.23, 2.16], $\eta^2 = .002$). Similarly, neither variable had a significant relationship with RRS-brooding (gender: $t(252) = -1.76, p = .08$; ethnicity: $t(253) = 1.55, p = .12$) and the magnitude of differences in means was small (gender: $M_{diff} = -1.06$, 95% CI [-2.25, .124], $\eta^2 = .01$; ethnicity: $M_{diff} = .97$, 95% CI [-.26, 2.19], $\eta^2 = .01$).

Outcome variables.

There were no significant gender differences ($t(254) = -1.90, p = .06$), or ethnicity differences ($t(255) = -.29, p = .78$) in DTC, and the magnitude of the differences in means was small (gender: $M_{diff} = -.06$, 95% CI [-.12, .002], $\eta^2 = .01$; ethnicity: $M_{diff} = -.009$, 95% CI [-.07, .05], $\eta^2 = .0003$). There were no significant gender differences ($t(257) = -.28, p = .78$) or ethnicity differences ($t(258) = -.33, p = .74$) in the RAPI, and the magnitude of differences in means was small (gender: $M_{diff} = -.02$, 95% CI [-.13, .10], $\eta^2 = .0003$; ethnicity: $M_{diff} = -.02$, 95% CI [-.14, .10], $\eta^2 = .0004$). Gender and ethnicity had no significant relationship with frequency of drinking (gender: $t(257) = -1.80, p = .07$; ethnicity: $t(258) = -1.10, p = .27$), and the magnitude of the differences in means was small (gender: $M_{diff} = -.04$, 95% CI [-.08, .003], $\eta^2 = .01$; ethnicity: $M_{diff} = -.02$, 95% CI [-.07, .02], $\eta^2 = .004$). Finally, gender and ethnicity had no relationship with quantity of drinking (gender: $t(256) = 1.17, p = .24$; ethnicity: $t(257) = -.32, p = .75$), and the magnitude of differences in means was small (gender: $M_{diff} = -.04$, 95% CI [-.03, .10], $\eta^2 = .001$; ethnicity: $M_{diff} = -.01$, 95% CI [-.08, .06], $\eta^2 = .0003$).

Regression Analyses

Drinking to Cope.

In order to test the direct relationship between SCC and DTC (the c' path), an ordinary least squares regression was run with all covariates included. The analysis showed that SCC was a significant predictor of DTC ($\beta = -.15$, $t(245) = -2.04$, $p = .04$). However, gender, race, and BDI were non-significant predictors in this model. After dropping these variables from the model, SCC remained a significant predictor of DTC ($\beta = -.19$, $t(250) = -3.00$, $p = .003$), affirming that participants with lower SCC exhibited increased drinking to cope motivation. A moderation analysis was conducted to determine the significance of the interaction effects of BDI and GAD7 with SCC on this path. Results of the analysis indicated that neither the BDI x SCC interaction ($t(245) = .29$, $p = .77$) nor the GAD7 x SCC interaction ($t(245) = -.13$, $p = .90$) were significant. Consequently, neither variable was included as a moderator on this path in the final model. This regression is summarized in Table 3.

Table 3

Predicting drinking to cope from self-concept clarity, age, and anxiety symptoms

	Drinking to Cope				
	B	SE_B	β	t	p
Self-Concept Clarity	-.004	.001	-.190	-2.998	.003**
Age	.327	.109	.165	3.004	.003**
GAD-7	.066	.109	.388	6.217	< .001**
$F(3,251) = 31.58$, $p < .001$ **, $R^2 = .27$					

Note. * $p < .05$, ** $p < .01$.

To test the relationship between SCC and RRS-brooding (the a path), an ordinary least squares regression was run with all covariates included. SCC was a significant predictor of RRS-brooding ($\beta = -.29$, $t(243) = -4.37$, $p < .001$). However, age, gender, race, and GAD-7 were non-

significant predictors. After dropping these variables from the model, SCC remained a significant predictor of RRS-brood ($\beta = -.29$, $t(248) = 4.48$, $p < .001$), indicating that participants with lower SCC tended experience more frequent brooding. A moderation analysis was conducted to determine the significance of the interaction effects of BDI and GAD7 with SCC on this path. Results of the analysis indicated that neither the BDI x SCC interaction ($t(243) = -.97$, $p = .33$) nor the SCC x GAD7 interaction ($t(243) = -1.59$, $p = .11$) were significant. Consequently, neither variable was included as a moderator on this path in the final model. This regression is summarized in Table 4.

Table 4

Predicting brooding rumination from self-concept clarity and depressive symptoms

	Brooding Rumination				
	B	SE_B	B	t	p
Self-Concept Clarity	-.109	.024	-.292	-4.479	< .001**
BDI	.956	.165	.377	5.788	< .001**
$F(2, 249) = 72.37$, $p < .001$ **, $R^2 = .37$					

Note. * $p < .05$, ** $p < .01$.

To test the relationship between RRS-brooding and DTC (the *b* path), an ordinary least squares regression was run using SCC and RRS as predictors of DTC with all covariates included. RRS-brooding was not a significant predictor of DTC ($\beta = .11$, $t(240) = 1.52$, $p = .13$). However, gender, race and BDI were non-significant predictors in this model. After dropping these variables, RRS-brooding remained non-significant ($\beta = .12$, $t(243) = 1.78$, $p = .08$). A moderation analysis was conducted to determine the significance of the interaction effects of BDI and GAD7 with RRS-brooding on this path. Results of the analysis indicated that neither the BDI x RRS-brooding interaction ($t(240) = -.90$, $p = .37$) nor the GAD7 x RRS-brooding

interaction ($t(240) = -.66, p = .51$) were significant. Consequently, neither variable was included as a moderator on this path in the final model. This regression is summarized in Table 5.

Table 5

Predicting drinking to cope from brooding rumination, self-concept clarity, age, and anxiety symptoms

	Drinking to Cope				
	B	SE_B	β	<i>t</i>	<i>p</i>
Brooding Rumination	.006	.003	.120	1.777	.077
Self-Concept Clarity	-.003	.001	-.135	-1.930	.055
Age	.304	.109	.156	2.785	.006**
GAD-7	.058	.011	.345	5.221	< .001**
$F(4, 244) = 22.42, p < .001^{**}, R^2 = .27$					

Note. * $p < .05$, ** $p < .01$.

To determine the significance of the mediated effect, the coefficient and standard error for SCC in the *a* path ($b = -.109, S_b = .024$) and the coefficient and standard error of RRS-brooding in the *b* path ($b = .006, S_b = .003$) were entered into the PRODCLIN 2 program (MacKinnon, Fritz, Williams, & Lockwood, 2007) with a significance level of $p = .05$ for calculation of an asymmetric confidence interval. Confidence intervals that do not include zero are considered significant at the tested level. Results indicated that the mediated effect was significant (95% ACI = -0.001, -0.0001). This model is depicted in Figure 4

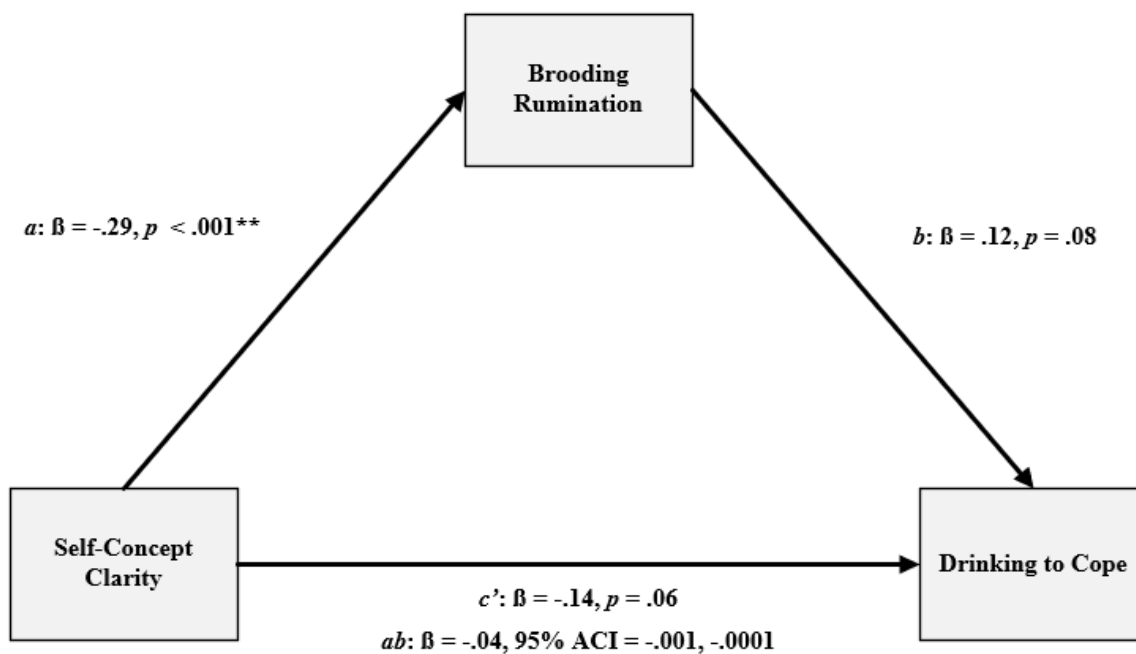


Figure 4. Brooding Rumination mediates the relationship between self-concept clarity and drinking to cope

Alcohol-related problems.

SCC was a not significant predictor of RAPI ($\beta = .01$, $t(247) = .15$, $p = .88$). However, gender and race were also not significant predictors in this model. After dropping these variables, SCC remained non-significant ($\beta = .02$, $t(251) = .28$, $p = .78$). Results of the moderation analysis indicated that neither the BDI x SCC interaction ($t(247) = .56$, $p = .58$) nor the GAD7 x SCC interaction ($t(247) = 1.09$, $p = .28$) were significant. Consequently, neither variable was included as a moderator on this path in the final model. This regression is summarized in Table 6.

Table 6

Predicting alcohol-related problems from self-concept clarity, age, depressive symptoms, and anxiety symptoms

	Alcohol-Related Problems				
	B	SE_B	B	<i>t</i>	<i>p</i>
Self-Concept Clarity	.001	.003	.021	.279	.780
Age	.621	.227	.162	2.734	.007**
BDI	.056	.024	.218	2.347	.020*
GAD-7	.063	.028	.188	2.261	.025*
$F(4, 252) = 11.36, p = .001^{**}, R^2 = .15$					

Note. * $p < .05$, ** $p < .01$.

While some approaches to mediation suggest that a non-significant relationship between the independent variable (SCC) and the dependent variable (RAPI) preclude any mediation analysis (Baron & Kenny, 1986), recent work in methodology of mediation analysis has cautioned that the requirement of a significant total effect prior to examining indirect effects should be abandoned (Hayes, 2009; MacKinnon, Krull, & Lockwood, 2000; Shrout & Bolger, 2002; Zhao, Lynch, & Chen, 2010). Consequently, I have proceeded with mediational analysis in this instance, even in absence of a significant direct effect.

The relationship between SCC and RRS-brooding (the *a* path) and potential moderators of this path was summarized in the section on drinking to cope (above) and in Table 4.

RRS-brooding was a significant predictor of RAPI ($\beta = .16, t(242) = 2.08, p = .04$), such that higher RRS-brooding predicted higher RAPI. However, BDI, GAD-7, gender, and race were non-significant predictors in this model. After dropping these variables, RRS-brooding remained significant ($\beta = .25, t(247) = 3.46, p = .001$). Results of moderation analysis indicated that neither the BDI x RRS-brooding interaction ($t(242) = .02, p = .98$) nor the GAD7 x RRS-brooding interaction ($t(242) = .142, p = .89$) were significant. Consequently, neither variable

was included as a moderator on this path in the final model. This regression is summarized in Table 7.

Table 7

Predicting alcohol-related problems from brooding rumination, self-concept clarity, and age

	Alcohol-Related Problems				
	B	SE_B	β	<i>t</i>	<i>p</i>
Brooding Rumination	.025	.007	.246	3.464	.001**
Self-Concept Clarity	-.003	.003	-.077	-1.064	.289
Age	.625	.233	.165	2.680	.008**
$F(3, 248) = 9.89, p < .001^{**}, R^2 = .11$					

Note. * $p < .05$, ** $p < .01$.

Analysis of the indirect effect (a path: $b = -.109$, $SE_b = .024$; b path: $b = .025$, $SE_b = .007$) indicated that it was significant (95% ACI = $-.005$, $-.001$), as the confidence interval does not include zero. This model is depicted in Figure 5.

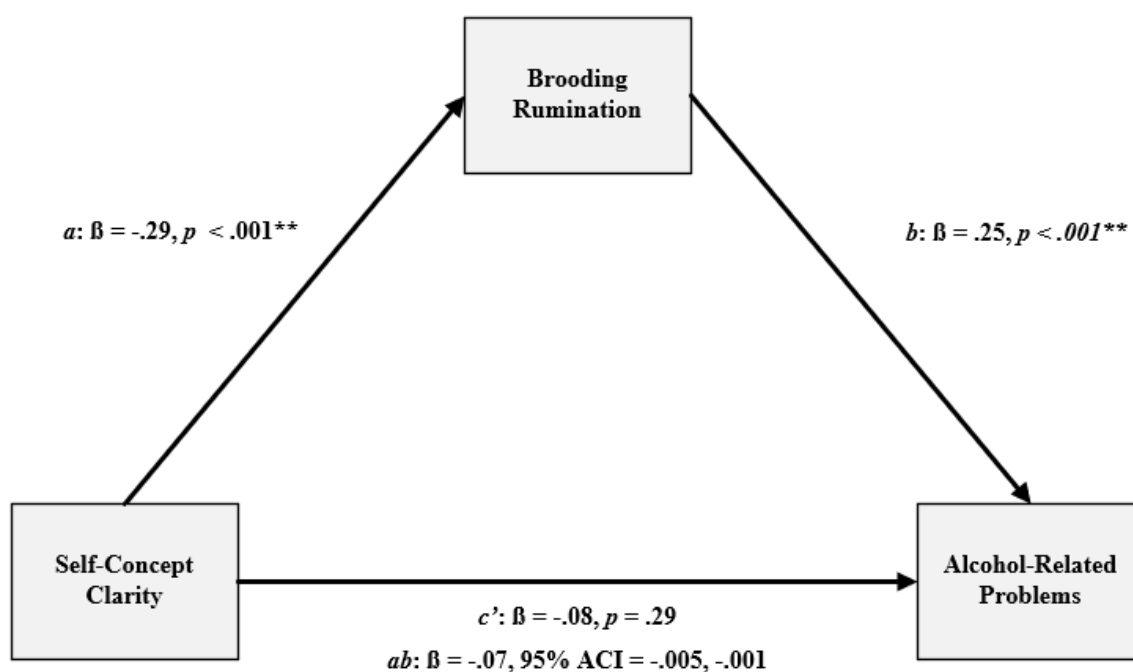


Figure 5. Brooding rumination mediates the relationship between self-concept clarity and alcohol-related problems

Frequency of alcohol use.

SCC was not a significant predictor of frequency of drinking ($\beta = -.05$, $t(247) = -.65$, $p = .52$). Gender, race, BDI, and GAD-7 were also non-significant predictors. After dropping these variables, SCC remained non-significant ($\beta = -.04$, $t(254) = -.62$, $p = .52$). Results of the moderation analysis indicated that both the BDI x SCC interaction ($\beta = -.42$, $t(247) = -2.45$, $p = .02$) and the GAD7 x SCC interaction ($\beta = -.41$, $t(247) = -2.10$, $p = .04$) were significant. Consequently, both interaction terms and their main effects were added on this path. SCC remained a non-significant predictor of frequency of drinking ($\beta = .27$, $t(249) = 1.63$, $p = .10$). This regression is summarized in Table 8.

Table 8

Predicting frequency of alcohol use from self-concept clarity, depressive symptoms, anxiety symptoms, interaction terms, and demographic variables

	Frequency of Alcohol Use				
	B	SE_B	β	<i>t</i>	<i>p</i>
Self-Concept Clarity	.004	.002	.268	1.632	.104
BDI	.020	.029	.222	.686	.493
GAD-7	.033	.038	.286	.866	.387
SCC * BDI	-.001	.001	-.260	-1.002	.317
SCC * GAD-7	-.001	.001	-.158	-.534	.594
Age	.237	.084	.178	2.823	.005**
$F(6, 250) = 2.62$, $p = .02^*$, $R^2 = .06$					

Note. * $p < .05$, ** $p < .01$.

The relationship between SCC and RRS-brooding (the *a* path) and potential moderators of this path was summarized in the section on drinking to cope and in Table 4.

RRS-brooding was not a significant predictor of frequency of drinking ($\beta = -.08$, $t(242) = -.95$, $p = .35$). Race, BDI, and GAD-7 were also non-significant predictors in this model; after dropping them, RRS-brooding remained non-significant ($\beta = -.08$, $t(245) = -1.03$, $p = .30$).

Results of the moderation analysis indicated that neither the BDI x RRS-brooding interaction ($t(242) = 1.07, p = .28$) nor the GAD7 x RRS-brooding interaction ($t(242) = .40, p = .69$) were significant. Consequently, neither variable was included as a moderator on this path in the final model. This regression is summarized in Table 9.

Table 9

Predicting frequency of alcohol use from brooding rumination, self-concept clarity, and demographic variables

	Frequency of Alcohol Use				
	B	SE_B	β	t	p
Brooding Rumination	-.003	.003	-.076	-1.032	.303
Self-Concept Clarity	-.001	.001	-.066	-.890	.375
Age	.286	.084	.217	3.422	.001**
Gender	.051	.021	.150	2.403	.017*
$F(4, 246) = 4.16, p = .003**, R^2 = .06$					

Note. * $p < .05$, ** $p < .01$.

Analysis of the indirect effect (a path: $b = -.109, SE_b = .024$; b path: $b = -.003, SE_b = .003$) indicated that it was not significant (95% ACI = $-.0003, .001$), as the confidence interval includes zero. This model is depicted in Figure 6.

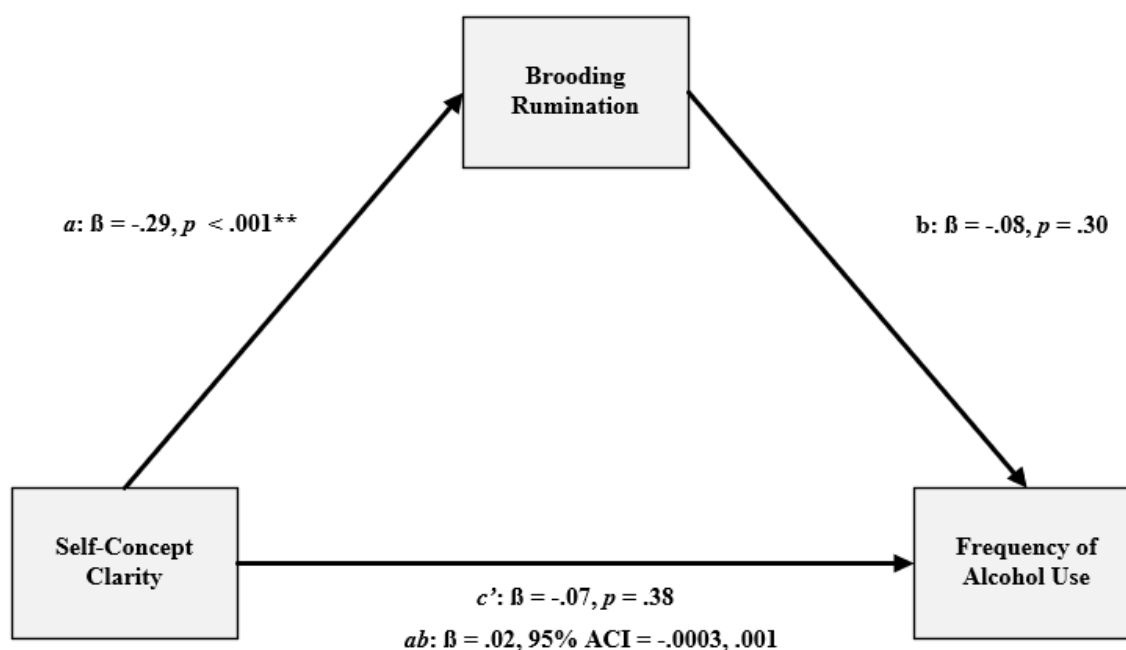


Figure 6. Brooding rumination does not mediate the relationship between self-concept clarity and frequency of alcohol use

Quantity of alcohol use.

SCC was not a significant predictor of quantity of drinking ($\beta = .10$, $t(246) = 1.18$, $p = .32$), nor were any of the other predictor variables. After dropping them, SCC remained non-significant ($\beta = .07$, $t(254) = 1.08$, $p = .28$). Results of the moderation analysis indicated that neither the BDI x SCC interaction ($t(246) = -.77$, $p = .44$) nor the GAD7 x SCC interaction ($t(246) = -1.05$, $p = .30$) were significant. Consequently, neither variable was included as a moderator on this path in the final model. This regression is summarized in Table 10.

Table 10

Predicting quantity of alcohol use from self-concept clarity

	Quantity of Alcohol Use				
	B	SE_B	β	<i>t</i>	<i>p</i>
Self-Concept Clarity	.001	.001	.067	1.079	.282
$F(1, 255) = 1.16, p = .28, R^2 = .005$					

Note. * $p < .05$, ** $p < .01$.

The relationship between SCC and RRS-brooding (the *a* path) and potential moderators of this path was summarized in the section on drinking to cope and in Table 4.

RRS-brooding was not a significant predictor of quantity of drinking ($\beta = .11, t(241) = 1.41, p = .16$), nor were the remaining predictor variables. After dropping them, RRS-brooding remained non-significant ($\beta = .10, t(247) = 1.40, p = .16$). Results of the moderation analysis indicated that neither the BDI x RRS-brooding interaction ($\beta = .16, t(245) = .60, p = .55$) nor the GAD7 x RRS-brooding interaction ($\beta = .23, t(245) = .93, p = .36$) were significant. Consequently, neither variable was included as a moderator on this path in the final model. This regression is summarized in Table 11.

Table 11

Predicting quantity of alcohol use from brooding rumination and self-concept clarity

	Alcohol-Related Problems				
	B	SE_B	β	<i>t</i>	<i>p</i>
Brooding Rumination	.006	.004	.104	1.402	.162
Self-Concept Clarity	.003	.002	.122	1.648	.101
$F(2, 248) = 1.554, p = .21, R^2 = .01$					

Note. * $p < .05$, ** $p < .01$.

Analysis of the indirect effect (*a* path: $b = -.109$, $SE_b = .024$; *b* path: $b = .006$, $SE_b = .004$) indicated that it was not significant (95% ACI = $-.002$, $.0002$), as the confidence interval includes zero. This model is depicted in Figure 7.

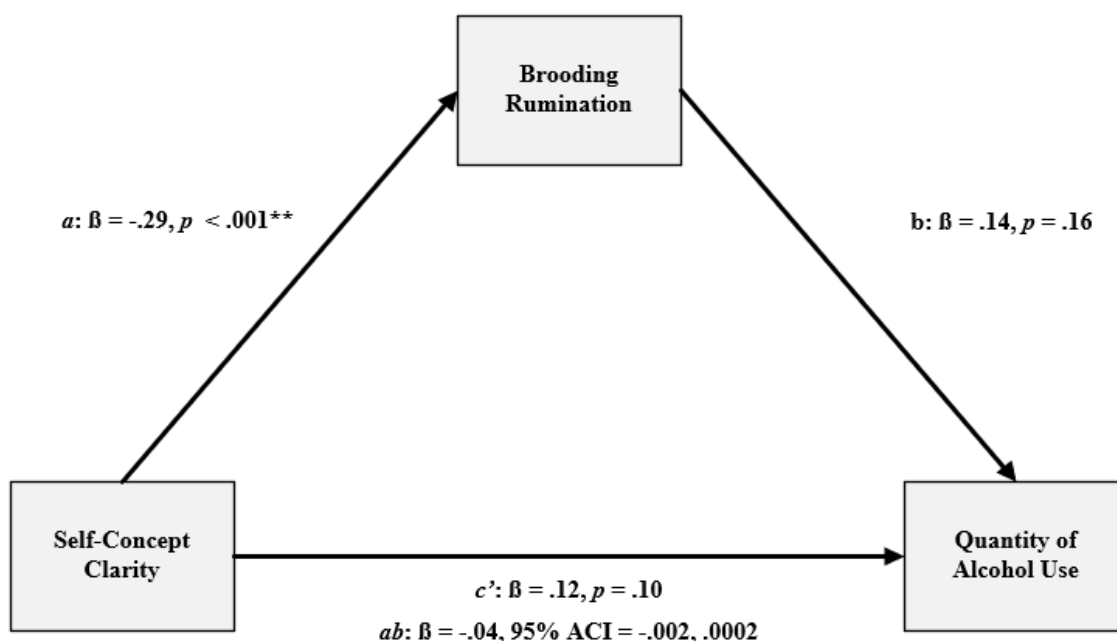


Figure 7. Brooding rumination does not mediate the relationship between self-concept clarity and quantity of alcohol use

Exploratory Analyses

Gender differences.

Gender was not a significant factor in any of the analyses conducted. The differences reported in previous research were partially supported in the present study. Counter to previous studies, females scored higher on DTC ($M = 1.00$) than males ($M = .95$), though the difference only approached significance ($t(254) = -1.90$, $p = .06$), and the magnitude of the difference in means was small ($M_{diff} = -.06$, 95% CI $[-.12, .002]$, $\eta^2 = .01$). As in previous studies, females

tended to score higher on measures of RRS-brooding ($M = 11.12$) than males ($M = 10.06$), though this difference also only approached significance ($t(254) = -1.76, p = .08$), and the magnitude of differences in means was small ($M_{diff} = -1.06$, 95% CI $[-2.25, .124]$, $\eta^2 = .01$)

Contribution of year in college.

There was a statistically significant difference between groups as determined by one-way ANOVA ($F(4, 251) = 3.819, p = .005$). A Tukey post hoc test revealed that 3rd year students ($M = 39.43, SD = 10.69, p = .03$) and 4th year students ($M = 41.00, SD = 10.08, p = .02$) had higher SCC scores than 1st year students ($M = 34.11, SD = 9.69$). The magnitude of differences in means was similar for each group (3rd year: $M_{diff} = 5.32$, 95% CI $[10.28, .36]$; 4th year: $M_{diff} = 6.89$, 95% CI $[13.14, .63]$), though the overall effect was of medium size ($\eta^2 = .06$). There was no significant difference for 2nd year ($M = 37.20, SD = 9.55, p = .27$) or 5th year and beyond ($M = 38.73, SD = 14.15, p = .60$), and magnitude of the difference in means was correspondingly smaller (2nd year: $M_{diff} = 3.09$, 95% CI $[7.34, -1.17]$; 5th year and beyond: $M_{diff} = 4.62$, 95% CI $[13.38, -4.15]$). Despite this, year in college did not significantly contribute to the final regression models for DTC ($\beta = .042, p = .46$), RAPI ($\beta = -.059, p = .34$), frequency of drinking ($\beta = .015, p = .85$) or quantity of drinking ($\beta = -.029, p = .65$).

Effect of spiritual practice on self-concept clarity scores.

More than half of the sample ($N = 261$) reported a religion or spiritual practice ($n = 151$; 57.9%), as compared to those who reported themselves as None/Atheist/Agnostic ($n = 85$; 32.6%), or those who preferred not to answer ($n = 25$; 9.6%). There was no significant difference in SCC scores ($t(231) = .165, p = .87$) between those who reported a spiritual practice ($M =$

36.57) and those who reported no spiritual practice ($M = 36.81$), and the magnitude of differences in means was small ($M_{diff} = .23$, 95% CI [-2.56, 3.03], $\eta^2 = .0001$).

Chapter 4

Discussion

The current study assessed the relationship between self-concept clarity and alcohol-related outcomes in a college student population. Specifically, the association between clarity (and lack thereof) of the self-concept and the motivation to drink alcohol to cope with negative affect, alcohol-related problems, frequency of alcohol use, and quantity of alcohol use was examined. Additionally, the role of brooding rumination was analyzed as a potential mediator that may account for the hypothesized relationships between self-concept clarity and alcohol-related outcomes.

Drinking to Cope

Hypothesis one, that self-concept clarity would significantly predict the motivation to drink alcohol to cope with negative affect and that brooding rumination would mediate this relationship, was supported. Results indicated that low self-concept clarity was associated with increased drinking to cope, and that this effect operated through increased levels of brooding rumination. These results suggest that low levels of self-concept clarity may be considered to be a form of identity distress that merits a coping response, and that those with low levels of self-concept clarity likely choose alcohol as their coping response significantly more often than those with higher levels of self-concept clarity. Further, these findings suggest that a significant amount of this effect is attributable to whether the individual also engages in brooding rumination.

Although the correlational nature of this study does allow support for causal claims, the results of hypothesis one bolster evidence from previous research that suggest a causal relationship between self-concept clarity and drinking to cope is plausible. For example, in a study of first-year college students, Bishop, Weisgram, Holleque, Lund, and Wheeler-Anderson (2005) found that those with a more sophisticated identity status (e.g., achieved or moratorium as opposed to diffused or foreclosed) tended to have less alcohol consumption. Similarly, Moeller and Crocker (2009) found that individuals with chronic self-image goals often experience high levels of self-consciousness and high levels of identity confusion as a result of these goals. Self-image goals were defined as goals in which people seek to construct, maintain, and defend positive self-views. This construct is similar to self-concept clarity, in that it requires the individual to construct a concept of the self, to maintain it over time, and to defend it from disconfirming information. The study demonstrated that although chronic self-image goals did not have a direct effect on heavy-episodic drinking behavior, it did contribute indirectly through drinking to cope motives.

Building on this, this study provides additional evidence that the strength of one's self-concept clarity may be related to how a person copes with stress more broadly - both directly through its influence on drinking to cope motivations, and indirectly through its relationship with brooding rumination. Though total effect of SCC on DTC was significant ($\beta = -.190, p = .003$), it is worth noting that even when the effect of brooding was accounted for, the direct effect of SCC was just short of significance ($\beta = -.135, p = .055$). Clearly, levels of self-concept clarity are exerting an influence on DTC motivations - both through brooding rumination and independent of it. This may be because low levels of SCC preclude an individual from engaging meaningfully in problem-focused coping, as a hazy or unstable self-concept may make it difficult to

adequately appraise a situation, or to appraise one's capacity to cope with the situation. Instead, individuals with low SCC tend to make greater use of passive coping strategies (Smith & Wellington, 1996) that are focused on managing the emotions brought about by the stressor instead of the underlying problem. Both alcohol use and rumination are considered passive (or avoidant) methods of coping, and participants with low self-concept clarity tended to deploy both methods.

Finally, this study extends findings from Nolen-Hoeksema and Harrell (2002) that demonstrated that depressive rumination predicted drinking to cope with distress in a longitudinal study. In the previous study, rumination was assessed using the full RRS, which contains items related to reflective, brooding, and depressive rumination. Recent research has identified these items as distinct constructs (Trapnell & Campbell, 1999; Treynor et al., 2003) that have differential effects on both self-concept clarity and coping (Campbell et al., 1996; Campbell, 1990; Trapnell & Campbell, 1999). Additionally, the previous study assessed DTC with summed scores of two questions on a coping scale which also included drugs (i.e., "I've been using alcohol or other drugs to make myself feel better"). In contrast, this study narrowed the focus to brooding rumination and alcohol use, providing more parsimonious results. This study's findings are novel in that this is the first study to demonstrate a relationship between self-concept clarity and brooding rumination, and between self-concept clarity and drinking to cope. While the aforementioned studies may have suggested a link, none had tested one directly.

Alcohol-Related Problems

Hypothesis two, that self-concept clarity would significantly predict alcohol-related problems and that brooding rumination would mediate this relationship, was partially supported. Results indicated that low self-concept clarity was not associated with increased alcohol-related

problems, but that there was a significant indirect effect of brooding rumination. This may be because of the similarities between the effects of anxiety and depressive symptoms and the effects of brooding rumination. In estimating the *c* path, age, depressive symptoms and anxiety symptoms are all significant predictors of alcohol-related problems, while SCC is not. When brooding rumination is included in the final model, both anxiety symptoms and depressive symptoms become non-significant predictors; brooding rumination “takes up” some of the predictive power of those variables. This may indicate that the depressive and anxious symptoms that participants are describing are better accounted for as arising from brooding ruminative processes. This is consistent with previous research that has demonstrated that rumination mediates the relationship between alcohol use and both depressive symptoms (Bravo, et al., 2017) and anxiety symptoms (Harwell, et al., 2011), and that rumination has not only predicted alcohol use, but that it independently predicted alcohol problems over and above depressive symptoms (Caselli et al., 2008). This study adds to the growing body of research that has demonstrated that ruminative processes may be a more precise target of therapy than anxiety and depressive symptoms alone.

Frequency and Quantity of Alcohol Use

Hypothesis three, that self-concept clarity would significantly predict frequency of drinking and that brooding rumination would mediate this relationship, was not supported. Results indicated that self-concept clarity had no significant relationship with how often an individual drinks alcohol, although the relationship approached significance ($p = .08$). Similarly, hypothesis four, that self-concept clarity would significantly predict quantity of drinking, and that brooding rumination would mediate this relationship, was unsupported. Results indicated that self-concept clarity had no significant relationship with how much alcohol a person drinks.

These results do not contradict those of hypotheses one and two. Rather, it provides information with regards to the effects of SCC and brooding rumination on alcohol outcomes. The findings of this study indicate that these constructs are associated with alcohol problems, rather than alcohol consumption.

Conceptually, it is not necessary for there to be a relationship between self-concept clarity and frequency or quantity of drinking for the associations with drinking to cope and alcohol problems to be meaningful. Firstly, although the purpose of this study is to examine the relationship of self-concept clarity and rumination to alcohol-related outcomes, alcohol is not the only substance or strategy available for soothing negative affect. Disordered eating (Wang & Borders, 2018; Sala, Brosio, & Levinson, 2019), substance use (Adrian, McCarty, King, McCauley, & Vander Stoep, 2014; Nolen-Hoeksema, Stice, Wade, & Bohon, 2007), and non-suicidal self-injury (Selby et al., 2009) have all been studied as maladaptive responses to intense rumination precisely because they deliver a psychoactive effect potent enough to serve as a distraction that can interrupt the repetitive thought process (Selby et al., 2009). As such, the processes described herein may end with increased drinking as only one maladaptive choice among many. Secondly, endorsement of coping motives for alcohol use have been shown to predict alcohol-related problems even after accounting for frequency or quantity of drinking (Cooper, 1994). The argument here is that even if the individual does not have significantly different frequency or quantity of drinking from their peers, they may still have more severe consequences – both directly as a consequence of their drinking, and indirectly, as a consequence of deficits in coping skills – than their peers.

Even though it is not conceptually necessary for self-concept clarity to be related to frequency or quantity of alcohol use for the results of the first two hypotheses to be meaningful,

it is important to note that, methodologically, this study relies on self-reports of drinking behavior. Previous research has investigated whether individuals accurately reported their alcohol usage and found that self-reported alcohol consumption may be underreported by as much as 60% (Boniface & Shelton, 2015; Livingston & Callinan, 2016). Secondly, this effect may be further amplified by the population demographics in this sample, in that more than half of the sample was below the legal drinking age of 21 ($n = 132$, 50.6%). Participants who are underage and reporting drinking behavior would be reporting illegal activity in a survey conducted on a university system, so it is possible that they may have been reluctant to disclose the nature of their alcohol usage. Additionally, a significant number of participants ($n = 36$, 13.9%) reported ascribing to the LDS/Mormon faith, which considers the use of alcohol to be a sin. This percentage of the sample may be motivated to underreport or conceal their alcohol usage.

General Discussion

Overall, these findings support the argument for applying cognitive self-regulation models to the understanding of alcohol as a coping mechanism and of problematic alcohol behaviors (e.g., Wells, 2000; Nolen-Hoeksema et al., 2007; Caselli et al., 2008). The data suggest that alcohol is being used as a regulatory agent to control repetitive thought patterns, and that the consequences of doing so are costly to the individual. It follows that if low self-concept clarity can be conceived as a form of identity distress that merits not one, but two maladaptive coping responses (brooding rumination and drinking to cope), then treatment programs aiming at an individual's ability to manage emotional distress alone are incomplete. Ideally, treatment should include practice in skills that facilitate a direct change in habits of thought that exacerbate distress and interfere with problem solving. Brooding rumination may be a critical target of

therapy, as it has been established that it contributes to the escalation and persistence of the negative affective states that can trigger maladaptive coping responses such as alcohol use, and that it may directly activate alcohol use as a regulatory strategy to interrupt rumination. Possible interventions include those that facilitate a direct change in ruminative thinking patterns. For example, interventions targeted at changing beliefs about the efficacy of rumination as a method of gaining insight or clarity (Papageorgiou & Wells, 2001; Watson & Baracaia, 2001) may help the individual to overcome their reliance on ruminative processes and be open to learning different methods of coping or distraction. In a similar vein, Rumination Focused Cognitive Behavioral Therapy (RFCBT; Watkins et al., 2007) has shown some promise in treating residual rumination in chronically depressed patients at risk of relapse. Treatment is focused specifically on the brooding subtype of rumination, and attempts to change clients' thinking from the abstract, evaluative thinking common in brooding to a more concrete and process-focused style. This has the added effect of changing coping styles as well. RFCBT differs from traditional CBT in that while CBT attempts to change the content of thoughts, RFCBT is attempting to change the process of thinking. In short, it is not only what a person thinks, but how they think that can determine emotions and one's control over them.

Similarly, self-concept clarity may also be a useful point of intervention, as these results suggest that the identity distress inherent in low self-concept clarity may directly trigger ruminative processes. While the results of previous research examining the effects of self-concept clarity suggest that an established identity and a clear sense of self would result in higher self-esteem (Campbell, 1990; Campbell et al., 1996), greater psychological well-being (Campbell, 1990; Campbell et al., 1996; Trapnell & Campbell, 1999), increases in active problem solving (Smith & Wellington, 1996), and better adaptive functioning overall

(Baumeister, 1986, 1991), there has been little research on how to aid developing individuals to nurture their identity development and bolster their self-concept clarity. There is currently no empirically supported treatment or intervention for improving self-concept clarity (Nardone, 2012; Wu & Watkins, 2009).

The lack of self-concept clarity interventions may be due to the nature of the construct. Recall that an important caveat to the idea of a clear and consistent self-concept is that self-concept clarity does not address the accuracy of the self-concept and does not necessarily reflect actual self-knowledge (Campbell et al., 1996). Prior research shows a negative correlation between self-concept clarity and self-analysis, despite a positive correlation with internal state awareness (Fenigstein, Scheier, & Buss, 1975; Campbell et al., 1996). Individuals with lower levels of self-concept clarity seem to show a tendency to engage in more reflection on the self, but that self-reflection does not result in greater perceived understanding of the self – whether that understanding is quantified as self-concept clarity or as internal state awareness. Instead – in a way quite reminiscent of rumination – repeated self-analysis may serve to undermine self-understanding, a concept known as the self-absorption paradox (Alloy & Abramson, 1979; Trapnell & Campbell, 1999).

The resolution of this paradox seems to lie not in the amount of self-focus the individual participates in, but in the kind. Although this study did not directly test the differences, it has been fairly well-established that brooding and reflection are distinct constructs (Trapnell & Campbell, 1999; Treynor et al., 2003) that differ in content and motivation. Reflection has been linked to problem-focused coping, intellectual curiosity, epistemic interest in the self, and conscientiousness. It follows that persons who direct their attention towards themselves in this fashion will likely derive solutions and insight from the information they uncover, which will

likely tend to strengthen their confidence in their self-concept. In contrast, brooding has been linked with emotion-focused coping, neuroticism, and perception of threat, loss, or injury to the self. Persons directing their attention inward under these conditions seem to also find solutions, but they tend to be maladaptive, short-term fixes for the accompanying emotions rather than for the underlying problem. As this generates no true insight or answers - and, importantly, leads to no increases in self-regulation skills - this process likely tends to weaken self-concept clarity. To modify a previous statement – it is not only what a person reflects on, but how they reflect on it that may determine the clarity of the self-concept. Similar to RFCBT, an effective self-concept clarity intervention may rely more heavily on changing thinking and coping styles than on self-concept clarity itself, though the relationship between rumination/reflection style and self-concept clarity is likely bi-directional.

In the context of this study, it is useful to consider the college environment. After all, the premise of this study was that the identity challenge presented by the college environment may threaten or reduce an individual's self-concept clarity enough that it produces different coping behaviors than in similar-aged non-college populations. Though we did not test this relationship directly, the results of this study seem to suggest that diminished self-concept clarity is associated with maladaptive outcomes. If this is the case, educators must bear some responsibility to aid in self-concept clarity repair. Especially in a time when college has become less about intellectual exploration and more about credential seeking; when being educated is less about changes to the self and more of a commodity to be obtained; and when decisions on major and careers are made based on external measures of success instead of according to an internal compass, it should be no surprise that students are more concerned about what they are becoming than who they are becoming. Self-concept clarity seems to be nurtured when the

individual shifts from accepting knowledge from authorities to constructing knowledge themselves, and from defining oneself through others' perceptions to defining oneself through one's own internally constructed values. Additionally, it seems to rely on an evolving ability to make meaning from experiences and honing the capacity to respond to events in ways that are not only satisfying, but also perceived to be effectual, just, and in line with one's own values. Difficulty in developing a stable sense of self (as well as in developing active coping skills and concrete operational problem solving) may be the result of social, familial, and educational environments that reward reliance on authority more than independent thinking and self-exploration. A useful counter to this may be encouraging students towards narrative writing as a path towards self-authorship (McLean, Pasupathi, & Pals, 2007; Pasupathi & Weeks, 2011). Exploring self-event connections through writing may be a path for the developing individual to organize their thoughts through writing in a way that encourages integration of newly learned perspectives and resolution of conflict. Viewing writing as an exercise in constructing meaning - rather than as a mechanical skill - makes the self central to learning and encourages the developing adult to nurture and value their own voice – a clear step towards self-concept clarity.

Likewise, in the age of the constant and hyper-individualistic public self that is present in social media, it may be important to pay closer attention to how developing youth learn to make sense of the constant stream of social evaluation and comparison. Those who react to this information passively, avoidantly, or in a way that focuses on the emotions brought about by events (rather than the events themselves) may miss an opportunity for self-discovery and self-definition, instead accepting the definition imposed on them from circumstance. In contrast, those that are taught problem focused coping skills and concrete process-oriented thinking styles

more explicitly may have an opportunity to respond to events in a manner that allows for problems to be resolved in a way that fosters self-determination.

Limitations

This study has several limitations that will have to be addressed by future research. Firstly, as mentioned previously, all the measures used in this study were self-report. We have no way of independently verifying any of the information provided by the participants. Consequently, recall and response biases, social desirability, and context effects may have contributed to errors in reporting. Secondly, the presence of concurrent psychological disorder was not assessed. A concurrent psychological disorder could influence nearly all of the variables measured in this study. However, symptoms of depression and anxiety were assessed and tested to ascertain if they moderate each path in the analysis, which confers a degree of confidence in the specificity of the results, as in all but one path the interactions were not significant. Thirdly, the sample composition makes generalizability difficult. My sample was mostly female (78.9%) and White (80.5%), which leaves it unclear as to whether the effects uncovered in this study would be similar in a more balanced sample. Fourthly, this research was conducted at one university with a rather homogeneous population. It remains unclear if the effects uncovered in this study are artifacts of the culture of this region or can be broadly generalized. Further, no data on other key variables that may impact my variables of interest were collected. For example, whether a person was married or single could affect their self-concept clarity and regulatory strategies, as committed couples tend to engage in co-regulation (Sbarra & Hazan, 2008). Socio-economic status could also affect the nature of self-analysis or social comparison, as well as the presence of rumination. Recall that repetitive thought is hypothesized to originate from frustrated goal progress and an inability to modify or abandon the goal (Carver & Scheier, 1982; Watkins,

2008). Certainly, poverty can place an individual in a position where safety and security goals are threatened, the individual has limited means to reach those goals, and they remain difficult or impossible to modify or abandon. Repeated experiences of disempowerment may promote a ruminative thinking style (Watkins & Nolen-Hoeksema, 2014).

Finally, the cross-sectional nature of this study makes assessing temporal relations of effects difficult. It is possible that individuals who drink alcohol at a certain level or frequency suffer cognitive impairments from the effects of alcohol that interfere with their ability to disengage their attention from self-analysis, and that this difficulty in attentional disengagement interferes with their ability to coalesce their thinking around a coherent self-concept. Determining causality and causal direction would require a longitudinal study with an experimental design and randomization.

Future Directions of Research

Future directions of research would include examining further the role of rumination in the motivation to drink to cope with negative affect and in maintaining problematic drinking behaviors – as well as considering the possible reciprocal effects of elevated alcohol consumption on rumination. For example, it has been argued that reflection is a more adaptive and beneficial form of self-focused attention than brooding. Further, it has been shown that although reflection leads to more depressive symptoms initially, it leads to fewer over time – presumably because the reflection process leads to more effective problem solving. One way to look at this in relation to drinking to cope would be to compare groups of those who reflect and those who brood on measures of drinking to cope and alcohol problems at several time points. If alcohol follows the same trajectory as depressive symptoms, we would expect to see similar drinking to cope motivations at the onset, but likely fewer drinking to cope motivations and

alcohol problems over time. Additionally, it would be interesting to explore the findings in this study in the context of experimentally induced lowering of self-concept clarity. Similarly, it may be useful to look at the effects of a rumination induction on cravings to drink alcohol among high and low self-concept clarity individuals with alcohol use disorders. Longitudinally, it would be informative to examine if those who receive a rumination-focused treatment (e.g., RFCBT) experienced changes in ruminative behaviors, and whether these changes were associated with decreases in drinking and/or elevations in self-concept clarity.

Similarly, the lack of literature on self-concept clarity should be addressed. Over the last several iterations of the Diagnostic and Statistical Manual of Mental Disorders (DSM), there has been a steady downgrading of identity-related distress as a unique construct. In the DSM-III, identity distress was one of the diagnostic criteria for *identity disorder*. In the DSM-IV, *identity disorder* was replaced with *identity problem*. The latest edition, DSM-V, has removed both of these characterizations. This may be particularly problematic as societal changes continue to alter developmental pathways available to young adults (Silva, 2012). An increasing number of young adults delay living independently and postpone marriage and parenthood into their late twenties or later (Settersten, 2012). Economic changes have driven more young adults to attend college and graduate school before committing to a profession, and young adults may transition in and out of jobs, relationships, and social arrangements repeatedly (Arnett, 2006). Taken together, this seems to indicate a lengthening of the period between adolescence and adulthood as the path to attainment of traditional social indicators of adulthood becomes more difficult to discern (Settersten, 2012). More research is needed to understand the effect of these changes on identity development throughout young adulthood. One research direction may be longitudinal studies that engage younger adolescents in dialogue about their “selves” and follow them

through high school and college to uncover patterns in the development of self-concept clarity. Understanding the possible developmental antecedents of self-concept clarity would add to our knowledge and understanding of the construct and would aid in development of interventions intended to improve self-concept clarity.

In conclusion, this study explored the relationships among self-concept clarity, brooding rumination, and alcohol related outcomes. Overall, the relationship between self-concept clarity and alcohol-related outcomes was mixed. While low levels of self-concept clarity successfully predicted increased motivations to drink alcohol to cope with distress, it did not have a direct relationship with alcohol problems or frequency and quantity of alcohol use. Brooding rumination successfully mediated the relationships between self-concept clarity and both drinking to cope motivations and alcohol problems, highlighting the important role that this cognitive process plays in self-regulation difficulties. Moreover, it adds to the growing literature that implicates brooding in difficulties in both identity development and self-regulation.

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Appendix A

Self-Concept Clarity Scale

1. My beliefs about myself often conflict with one another. *
2. On one day I might have one opinion of myself and on another day, I might have a different opinion. *
3. I spend a lot of time wondering about what kind of person I really am.*
4. Sometimes I feel that I am not really the person that I appear to be. *
5. When I think about the kind of person I have been in the past, I'm not sure what I was really like. *
6. I seldom experience conflict between the different aspects of my personality.
7. Sometimes I think I know other people better than I know myself. *
8. My beliefs about myself seem to change very frequently. *
9. If I were asked to describe my personality, my description might end up being different from one day to another day. *
10. Even if I wanted to, I don't think I could tell someone what I'm really like. *
11. In general, I have a clear sense of who I am and what I am.
12. It is often hard for me to make up my mind about things because I don't really know what I want. *

Scale ranges from 1 (*strongly disagree*) to 5 (*strongly agree*).

* Indicates reverse-keyed item.

Appendix B

Ruminative Response Scale

People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you almost never, sometimes, often, or almost always think or do each one when you feel down, sad, or depressed. Please indicate what you *generally* do, not what you think you should do.

1 almost never

2 sometimes

3 often

4 almost always

1. think about how alone you feel
2. think "I won't be able to do my job if I don't snap out of this"
3. think about your feelings of fatigue and achiness
4. think about how hard it is to concentrate
5. think "What am I doing to deserve this?"
6. think about how passive and unmotivated you feel.
7. analyze recent events to try to understand why you are depressed
8. think about how you don't seem to feel anything anymore
9. think "Why can't I get going?"
10. think "Why do I always react this way?"
11. go away by yourself and think about why you feel this way
12. write down what you are thinking about and analyze it
13. think about a recent situation, wishing it had gone better
14. think "I won't be able to concentrate if I keep feeling this way."
15. think "Why do I have problems other people don't have?"
16. think "Why can't I handle things better?"
17. think about how sad you feel.
18. think about all your shortcomings, failings, faults, mistakes
19. think about how you don't feel up to doing anything
20. analyze your personality to try to understand why you are depressed
21. go someplace alone to think about your feelings
22. think about how angry you are with yourself

Appendix C

Drinking Motives Questionnaire

Below is a list of reasons people sometimes give for drinking alcohol. Thinking of all the times you drink, how often would you say that you drink for each of the following reasons?

1 almost never 2 sometimes 3 half of the time 4 most of the time 5 almost always

1. To forget your worries
2. Because your friends pressure you to drink
3. Because it helps you enjoy a party
4. Because it helps you when you feel depressed or nervous
5. To be sociable
6. To cheer you up when you are in a bad mood
7. Because you like the feeling
8. So that others won't kid you about *not* drinking
9. Because it's exciting
10. To get high
11. Because it makes social gatherings more fun
12. To fit in with a group you like
13. Because it gives you a pleasant feeling.
14. Because it improves parties or celebrations
15. Because you feel more self-confident and sure of yourself
16. To celebrate a special occasion with your friends
17. To forget about your problems
18. Because it's fun
19. To be liked
20. So you won't feel left out

Appendix D

Alcohol Use Disorders Identification Test

1. How often do you have a drink containing alcohol?
 - a. Never
 - b. Monthly or less
 - c. 2 - 4 times a month
 - d. 2 -3 times a week
 - e. 4 or more times a week
2. How many standard drinks containing alcohol do you have on a typical day when drinking?
 - a. 1 or 2
 - b. 3 or 4
 - c. 5 or 6
 - d. 7 to 9
 - e. 10 or more
3. How often do you have six or more drinks on one occasion?
 - a. Never
 - b. Less than monthly
 - c. Monthly
 - d. Weekly
 - e. Daily or almost daily
4. During the past year, how often have you found that you were not able to stop drinking once you had started?
 - a. Never
 - b. Less than monthly
 - c. Monthly
 - d. Weekly
 - e. Daily or almost daily
5. During the past year, how often have you failed to do what was normally expected of you because of drinking?
 - a. Never
 - b. Less than monthly
 - c. Monthly
 - d. Weekly
 - e. Daily or almost daily

6. During the past year, how often have you needed a drink in the morning to get yourself going after a heavy drinking session?

- a. Never
- b. Less than monthly
- c. Monthly
- d. Weekly
- e. Daily or almost daily

7. During the past year, how often have you had a feeling of guilt or remorse after drinking?

- a. Never
- b. Less than monthly
- c. Monthly
- d. Weekly
- e. Daily or almost daily

8. During the past year, have you been unable to remember what happened the night before because you had been drinking?

- a. Never
- b. Less than monthly
- c. Monthly
- d. Weekly
- e. Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?

- a. No
- b. Yes, but not in the past year
- c. Yes, during the past year

10. Has a relative or friend, doctor or other health worker been concerned about your drinking or suggested you cut down?

- a. No
- b. Yes, but not in the past year
- c. Yes, during the past year

Appendix E

RUTGERS ALCOHOL PROBLEM INDEX
RAPI (18-item version)

Different things happen to people while they are drinking ALCOHOL or because of their ALCOHOL drinking. Several of these things are listed below. Indicate how many times each of these things happened to you WITHIN THE LAST YEAR.

Use the following code:

- 0 = None
- 1 = 1-2 times
- 2 = 3-5 times
- 3 = More than 5 times

HOW MANY TIMES HAS THIS HAPPENED TO YOU WHILE YOU WERE
DRINKING OR BECAUSE OF YOUR DRINKING DURING THE LAST
YEAR?

- 0 1 2 3 Not able to do your homework or study for a test
- 0 1 2 3 Got into fights with other people (friends, relatives, strangers)
- 0 1 2 3 Missed out on other things because you spent too much money on alcohol

- 0 1 2 3 Went to work or school high or drunk
- 0 1 2 3 Caused shame or embarrassment to someone
- 0 1 2 3 Neglected your responsibilities

- 0 1 2 3 Friends or relatives avoided you
- 0 1 2 3 Felt that you needed more alcohol than you used to in order to get the same effect
- 0 1 2 3 Tried to control your drinking (tried to drink only at certain times of the day or certain places, that is, tried to change your pattern of drinking)

- 0 1 2 3 Had withdrawal symptoms, that is, felt sick because you stopped or cut down on drinking
- 0 1 2 3 Noticed a change in your personality
- 0 1 2 3 Felt that you had a problem with alcohol

- 0 1 2 3 Missed a day (or part of a day) of school or work
- 0 1 2 3 Suddenly found yourself in a place that you could not remember getting to
- 0 1 2 3 Passed out or fainted suddenly

- 0 1 2 3 Kept drinking when you promised yourself not to
- 0 1 2 3 Felt physically or psychologically dependent on alcohol
- 0 1 2 3 Was told by a friend, neighbor or relative to stop or cut down drinking

Appendix F

Generalized Anxiety Disorder 7-item (GAD-7) scale

Over the last 2 weeks, how often have you been bothered by the following problems?	Not at all	Several days	Over half the days	Nearly every day
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it's hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all _____
 Somewhat difficult _____
 Very difficult _____
 Extremely difficult _____

Appendix G

Beck's Depression Inventory

For each group of statements, choose the statement that best describes you over the past two weeks.

1.

- 0 I do not feel sad.
- 1 I feel sad
- 2 I am sad all the time and I can't snap out of it.
- 3 I am so sad and unhappy that I can't stand it.

2.

- 0 I am not particularly discouraged about the future.
- 1 I feel discouraged about the future.
- 2 I feel I have nothing to look forward to.
- 3 I feel the future is hopeless and that things cannot improve.

3.

- 0 I do not feel like a failure.
- 1 I feel I have failed more than the average person.
- 2 As I look back on my life, all I can see is a lot of failures.
- 3 I feel I am a complete failure as a person.

4.

- 0 I get as much satisfaction out of things as I used to.
- 1 I don't enjoy things the way I used to.
- 2 I don't get real satisfaction out of anything anymore.
- 3 I am dissatisfied or bored with everything.

5.

- 0 I don't feel particularly guilty
- 1 I feel guilty a good part of the time.
- 2 I feel quite guilty most of the time.
- 3 I feel guilty all of the time.

6.

- 0 I don't feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished.
- 3 I feel I am being punished.

7.

- 0 I don't feel disappointed in myself.
- 1 I am disappointed in myself.
- 2 I am disgusted with myself.
- 3 I hate myself.

8.

- 0 I don't feel I am any worse than anybody else.
- 1 I am critical of myself for my weaknesses or mistakes.
- 2 I blame myself all the time for my faults.
- 3 I blame myself for everything bad that happens.

9.

- 0 I don't have any thoughts of killing myself.
- 1 I have thoughts of killing myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

10.

- 0 I don't cry any more than usual.
- 1 I cry more now than I used to.
- 2 I cry all the time now.
- 3 I used to be able to cry, but now I can't cry even though I want to.

11.

- 0 I am no more irritated by things than I ever was.
- 1 I am slightly more irritated now than usual.
- 2 I am quite annoyed or irritated a good deal of the time.
- 3 I feel irritated all the time.

12.

- 0 I have not lost interest in other people.
- 1 I am less interested in other people than I used to be.
- 2 I have lost most of my interest in other people.
- 3 I have lost all of my interest in other people.

13.

- 0 I make decisions about as well as I ever could.
- 1 I put off making decisions more than I used to.
- 2 I have greater difficulty in making decisions more than I used to.
- 3 I can't make decisions at all anymore.

14.

- 0 I don't feel that I look any worse than I used to.
- 1 I am worried that I am looking old or unattractive.
- 2 I feel there are permanent changes in my appearance that make me look unattractive
- 3 I believe that I look ugly.

15.

- 0 I can work about as well as before.
- 1 It takes an extra effort to get started at doing something.
- 2 I have to push myself very hard to do anything.
- 3 I can't do any work at all.

16.

- 0 I can sleep as well as usual.
- 1 I don't sleep as well as I used to.
- 2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
- 3 I wake up several hours earlier than I used to and cannot get back to sleep.

17.

- 0 I don't get more tired than usual.
- 1 I get tired more easily than I used to.
- 2 I get tired from doing almost anything.
- 3 I am too tired to do anything.

18.

- 0 My appetite is no worse than usual.
- 1 My appetite is not as good as it used to be.
- 2 My appetite is much worse now.
- 3 I have no appetite at all anymore.

19.

- 0 I haven't lost much weight, if any, lately.
- 1 I have lost more than five pounds.
- 2 I have lost more than ten pounds.
- 3 I have lost more than fifteen pounds.

20.

- 0 I am no more worried about my health than usual.
- 1 I am worried about physical problems like aches, pains, upset stomach, or constipation.
- 2 I am very worried about physical problems and it's hard to think of much else.
- 3 I am so worried about my physical problems that I cannot think of anything else.

21.

- 0 I have not noticed any recent change in my interest in sex.
- 1 I am less interested in sex than I used to be.
- 2 I have almost no interest in sex.
- 3 I have lost interest in sex completely.

Appendix H

Demographics Questionnaire

1. What is your gender?
 1. Male
 2. Female
 3. Other or not reported
2. What is your age?
3. What is your year in college?
 1. 1st year
 2. 2nd year
 3. 3rd year
 4. 4th year
 5. 5th year and beyond
4. What is your race? Choose ONLY one with which you MOST CLOSELY identify.
 1. American Indian or Alaska Native
 2. Asian
 3. Black or African American
 4. Native Hawaiian or Other Pacific Islander
 5. White
 6. More than one race
 7. Unknown or not reported
5. How do you describe your religion, spiritual practice, or existential world view?
 1. Protestant
 2. Catholic
 3. LDS / Mormon
 4. Muslim
 5. Jewish
 6. Other - please specify: _____
 7. None/Atheist/Agnostic
 8. I prefer not to answer.