

Illinois State University

ISU ReD: Research and eData

Theses and Dissertations

3-15-2022

Narcissism and Alcohol Outcomes: The Role of Drinking Motives

Jake Robert Solka

Illinois State University, jsolka74@gmail.com

Follow this and additional works at: <https://ir.library.illinoisstate.edu/etd>

Recommended Citation

Solka, Jake Robert, "Narcissism and Alcohol Outcomes: The Role of Drinking Motives" (2022). *Theses and Dissertations*. 1577.

<https://ir.library.illinoisstate.edu/etd/1577>

This Thesis is brought to you for free and open access by ISU ReD: Research and eData. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of ISU ReD: Research and eData. For more information, please contact ISUREd@ilstu.edu.

NARCISSISM AND ALCOHOL OUTCOMES: THE ROLE OF DRINKING MOTIVES

JAKE ROBERT SOLKA

76 Pages

Given that young adults have the highest prevalence rates of excessive drinking and associated adverse outcomes (CDC, 2019), it is important to examine factors that contribute to this health risk behavior. Previous research suggests that subclinical narcissistic grandiosity is related to alcohol use, whereas both subclinical narcissistic grandiosity and vulnerability are both independently related to negative alcohol-related outcomes. In addition, all four drinking motives (Cooper et al., 1994) are independently related to alcohol use, and negative alcohol-related outcomes (Kramer et al., 2019; Kuntsche et al., 2005; Wahesh et al., 2015). However, it is unclear how subclinical narcissistic traits and drinking motives work together to contribute to student alcohol use and related negative outcomes. Therefore, this study examined the unique and moderating roles of all four drinking motives (i.e., enhancement, coping, conformity, and social) on relations between subclinical narcissistic traits (i.e., grandiose, and vulnerable) and three alcohol use outcomes (i.e., past-month alcohol use, heavy episodic drinking frequency (HED), and negative alcohol-related outcomes experienced). Participants were undergraduate and graduate college students from a large, Midwestern university ($N = 406$; 81% female; $M_{age} = 20.13$, $SD = 1.69$; 10% Hispanic, 85% White). Using a cross-sectional design, I used survey methods to gather data on college student subclinical grandiosity and vulnerability traits, drinking motives, past-month alcohol use, HED frequency, and negative alcohol-related outcomes experienced. Controlling for gender, age, and ethnicity, Poisson regression analyses were conducted to examine associations between subclinical grandiosity and vulnerability,

drinking motives, and the three identified alcohol outcomes. Results indicated that subclinical grandiose traits were positively associated with all three alcohol outcomes, whereas subclinical vulnerable traits were negatively associated with past-month alcohol use and HED frequency. In addition, enhancement motives, coping motives, and social motives were each positively associated with all three alcohol outcomes, whereas conformity motives were negatively associated to past-month alcohol use. Furthermore, enhancement, conformity, and social motives independently positively moderated the relation between subclinical grandiose traits with past-month use. Similarly, enhancement and social motives positively moderated the relation between subclinical grandiose traits and HED frequency. Conversely, each of the four drinking motives independently negatively moderated the relation between subclinical vulnerable traits and past-month alcohol use. Moreover, enhancement and social motives negatively moderated the relation between subclinical vulnerable traits and HED frequency. Contrary to initial hypotheses, none of the four drinking motives significantly interact with either subclinical grandiose or vulnerable traits in models predicting negative alcohol-related outcomes experienced. Findings illustrate that targeting motivations for alcohol use as well as addressing narcissistic personality traits may prove beneficial in therapeutic services and substance use prevention activities for young people, particularly in academic settings.

KEYWORDS: college alcohol use, drinking motives, narcissistic traits, heavy episodic drinking, negative outcomes

NARCISSISM AND ALCOHOL OUTCOMES: THE ROLE OF DRINKING MOTIVES

JAKE ROBERT SOLKA

A Thesis Submitted in Partial
Fulfillment of the Requirements
for the Degree of

MASTER OF SCIENCE

Department of Psychology

ILLINOIS STATE UNIVERSITY

2022

© 2022 Jake Robert Solka

NARCISSISM AND ALCOHOL OUTCOMES: THE ROLE OF DRINKING MOTIVES

JAKE ROBERT SOLKA

COMMITTEE MEMBERS:

Laura J. Finan, Chair

Dan Lannin

ACKNOWLEDGMENTS

First and foremost, I wish to express my sincere gratitude to Dr. Laura J. Finan. Laura, I cannot emphasize enough how deeply I value you as a mentor, colleague, and friend. Despite your seemingly endless list of commitments, you selflessly dedicated your time and attention towards working with me on each step of this project. Your support has motivated me since I was an undergraduate, and I attribute much of my success to you. Each discussion with you is its own education and profoundly influenced my development as a scholar. I have learned so much through our time together. Most importantly, you taught me that any challenge can be overcome with enough rigor. I am honored to have worked alongside you and am lucky to have you in my corner.

Dr. Dan Lannin, thank you for not only offering your guidance and valuable insight to this project, but for your faith in my own capabilities. You have demonstrated how to remain calm under pressure, which I often kept in mind throughout this process. Your fun and inclusive approach to collaborative learning made me feel at home throughout my time at Illinois State, and I am grateful for the time you committed towards strengthening my development both as a writer and clinician.

Dr. Matthew Hesson-McInnis, thank you for being so engaged throughout my proposal and defense. I am greatly appreciative of your unique perspective and early advocacy in my project, as I hold you in high regard. Additionally, your authentic positivity during my proposal was refreshing and truly helped me that day.

Finally, I would like to express my gratitude towards several individuals who assisted me as it relates to this project. Dr. Jeffrey Kahn, thank you for your patience and thoroughness when teaching Regression Analysis. Your teaching style made me feel confident in something I was greatly intimidated by. Dr. Karen Mark, thank you for your hand in granting me this opportunity

at Illinois State, and for your continuous assistance, support, and encouragement with every opportunity that came with our program. Thank you, Nick Shilney, Lindsay Chassay, Amanda Martin, David Knapp, Connor Dolezal, Robbie Gleeson, Sammie Easley, Will Easley, and Louie Simbajon for your comradery and solidarity. Lastly, but certainly not least, thank you, Mom, Dad, Madison, Jordyn, and Victoria for your love and support. Without these individuals, this project would have been an impossible task for me.

J. R. S.

CONTENTS

	Page
ACKNOWLEDGMENTS	i
TABLES	vi
FIGURES	vii
CHAPTER I: INTRODUCTION	1
Drinking Motives and Alcohol Use	3
Alcohol Use	3
Hazardous Drinking	5
Drinking Motives and Negative Alcohol-Related Outcomes	6
Summary	10
Personality and Alcohol Use	11
Cluster B Personality Disorders and Alcohol Use and Outcomes	11
Narcissism	12
Personality Traits and Drinking Motives	14
Present Study	17
Research Questions	18
CHAPTER II: METHOD	21
Participants	21
Procedure	21
Measures	22
Past-Month Alcohol Use	22
Heavy Episodic Drinking	22

Negative Alcohol-Related Outcomes	23
Subclinical Narcissistic Personality Traits	23
Drinking Motives	24
Demographic Survey	25
CHAPTER III: ANALYTIC STRATEGY	26
Analyzing Participant Response	26
Descriptive Statistics	26
Hypothesis Testing	27
CHAPTER IV: RESULTS	28
Descriptive Statistics	28
Research Questions and Hypothesis Testing	30
Main Effects	30
Past-Month Alcohol Use Interactions	34
HED Frequency Interactions	37
Negative Alcohol-Related Outcomes Interactions	40
CHAPTER V: DISCUSSION	41
Past-Month Alcohol Use and HED Frequency	41
Subclinical Grandiose Traits and Drinking Motives	41
Subclinical Vulnerable Traits and Drinking Motives	46
Negative Alcohol-Related Outcomes	48
Subclinical Narcissistic Traits	48
Drinking Motives	49
Interaction Effects	51

Strengths of the Present Study	52
Limitations	53
Implications and Conclusions	54
REFERENCES	56
APPENDIX A: DEMOGRAPHIC QUESTIONNAIRE	73
APPENDIX B: UNIVERSITY RECRUITMENT EMAIL TARGETING YOUNG ADULTS	75
APPENDIX C: IRB APPROVAL	76

TABLES

Table	Page
1. Bivariate Associations and Descriptive Information Among Study Variables	29
2. Poisson Regression Analyses Predicting Past-Month Alcohol Use with Subclinical Narcissistic Subtypes and Drinking Motives	30
3. Poisson Regression Analyses Predicting HED Frequency with Subclinical Narcissistic Subtypes and Drinking Motives	32
4. Poisson Regression Analyses Predicting Negative Alcohol-Related Outcomes Experienced with Subclinical Narcissistic Subtypes and Drinking Motives	33

FIGURES

Figure	Page
1. Simple Slopes of Subclinical Narcissistic Traits Predicting Past-month Alcohol Use for 1 SD Below the Drinking Motive Score and 1 SD Above the Drinking Motive Score	36
2. Simple Slopes of Subclinical Narcissistic Traits Predicting HED Frequency for 1 SD Below the Drinking Motive Score and 1 SD Above the Drinking Motive Score	39

CHAPTER I: INTRODUCTION

According to the 2019 National Survey on Drug Use and Health (NSDUH), 69.5% of people ages 18 or older reported they drank alcohol in the past year, and 54.9% reported they drank in the past month (Substance Abuse and Mental Health Services Administration [SAMHSA], 2019). Alarming, young adults ages 18-24 have the highest prevalence rates of alcohol dependence, heavy episodic drinking (HED), and excessive drinking (Center for Disease Control [CDC], 2019). College students seem to be particularly at risk as they are routinely exposed to factors that foster alcohol use, such as Greek systems and a campus culture promoting drinking (Presley et al., 2002). By sophomore year nearly all students report having the opportunity to try alcohol, making it the earliest substance to which college students are exposed (Arria et al., 2008).

College students are also at risk for engaging in potentially risky drinking, such as HED. HED is defined as alcohol use which results in a blood alcohol concentration of at least 0.08 g/dl. For men, this means five drinks or more within a two-hour period. For women, four drinks or more within the same timeframe (CDC, 2019). Of the full-time college students who reported past-month alcohol use, one-third admitted they engage in HED behavior (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2020). HED is a precursor to hazardous alcohol use, which can be defined as frequent and heavy drinking without signs of physical alcohol dependence (Walitzer & Connors, 1999). Both HED and hazardous drinking are associated with many negative alcohol-related outcomes, such as the development of an alcohol use disorder, which 9% of college students meet the criteria for (SAMHSA, 2019). Negative alcohol-related outcomes can even prove fatal, with an estimated average of 1,519 college students ages 18-24 dying annually due to alcohol-related incidents (CDC, 2019). In addition to fatality, possible

negative outcomes of college student's alcohol use include physical injury and struggles with academia (Murphy et al., 2005).

There are numerous reasons why college students engage heavily in alcohol use behaviors. One consideration are a person's drinking motives, which is defined as motivations to engage in alcohol use behaviors (Cooper, 1994). Drinking motive theory addresses motivations for alcohol use, particularly motives that influence an individual's affect. Motives are important to consider given they precede one's alcohol use and may play a role in the negative outcomes that stem from drinking. Drinking motives (or "reasons to drink" as used interchangeably in previous literature [Baer et al., 2002; Kuntsche et al., 2005]) are often rationalized with a presumption of what alcohol can provide, which leads to a reason for drinking.

Cooper et al. (1994) suggests there are four drinking motives that can be categorized as either internal or external. Internal drinking motives directly correspond to affect regulation, while external motives indirectly correspond to affect regulation through environmental factors (Roos et al., 2015). Internal motives are drinking to cope and to enhance whereas external motives are drinking to conform and for social benefit or reward. Coping motives are present if a person drinks to relieve themselves of negative emotionality such as distress, shame, or guilt. Elements of coping motives include drinking to increase confidence, reduce anxiety, and improve one's mood. Enhancement motives are present if a person drinks to magnify any positive effect from alcohol. Elements of enhancement motives include drinking for fun, the enjoyment of getting drunk, and the taste of alcoholic drinks. A social motive is drinking to improve one's experience with relevant contextual factors. Social motives are often observed when a person goes out with friends, celebrates special occasions, or drinks with a meal when dining out. Conformity motives are present when one drinks to "fit in" with others or drinks out

of peer pressure. Notable signs of conformity motives are drinking to feel like one belongs with a group and to avoid exclusion from friends or peers.

Previous research shows that drinking motives are significantly associated with alcohol use and negative-related outcomes among college students. The following sections will review extant research examining the associations between drinking motives to college student alcohol use and negative alcohol-related outcomes.

Drinking Motives and Alcohol Use

Alcohol Use

Multiple studies have shown conformity and social motives are associated with college student alcohol use, either in terms of quantity or frequency. For example, Choi et al., (2016) collected cross-sectional data from Korean college students to assess the prevalence of social and conformity motives in relation to their quantity and frequency of alcohol use. Social and conformity motives were significantly related to alcohol use frequency. However, although social motives were positively related to alcohol use quantity, conformity motives were negatively related. This finding means that students who drank to “fit in” with others drank more often but in lesser amounts on such occasions. Although it is possible results are influenced by the omission of two items from the conformity motives subscale used, results align with additional literature (Fisher et al., 2020; Skalisky et al., 2019). Contrarily, using cross-sectional data, Wahesh et al., (2015) reported that conformity and social motives were not correlated to alcohol use intensity, which was conceptualized as the overall quantity of one’s alcohol use, as well as frequency of both one’s alcohol use and binge-drinking. Taken together, extant research highlights inconsistent relations between conformity and social motives with college student alcohol use.

As with conformity and social motives, coping motives share a complex relation with college student alcohol use. Wemm et al., (2018) used cluster analyses to explore underlying groups of undergraduate students based on their drinking expectancies, coping motives, anxiety, and depression. Across two studies and samples, a cluster of students emerged which displayed elevated levels for each of these four variables. Of these four elevated variables, coping motives displayed the highest level reported. Importantly, this group of students was found more likely to drink alcohol. However, this relation is contested. When collecting cross-sectional data from college students identifying as “alcohol-only users”, Skalisky et al. (2019) found coping motives shared no significant association to alcohol use frequency whereas social motives did, supporting previous literature (Kuntsche et al., 2014). Additionally, enhancement motives demonstrated marginal significance to alcohol use frequency. These findings correspond with cross-sectional analyses by Fisher et al., (2020) who reported enhancement and social motives to be significantly associated with alcohol use quantity, whereas coping motives shared no relation to alcohol consumption. Taken together, coping motives and college student alcohol use share a complex relation in need of further study.

Of the four drinking motives, drinking to enhance arguably shares the most empirically consistent relation to college student alcohol use. Read et al., (2003) collected cross-sectional and longitudinal data from an undergraduate student sample in which students reported quantity and frequency of their alcohol use within the past three months. Students also reported alcohol consumption for coping, social, or enhancement motives. Conformity motives were not measured. Cross-sectional analyses indicated enhancement motives were significantly associated with alcohol use. Longitudinal analyses also demonstrated that enhancement motives predicted future alcohol use. Conversely, coping motives shared nonsignificant associations to alcohol use

through cross-sectional and longitudinal analyses. Results suggest enhancement motives may be particularly important drivers of college student's alcohol use. This finding is supported by additional cross-sectional research stating enhancement motives share the strongest association with alcohol use (Cook et al., 2020).

Overall, the literature on relations between college students drinking motives and alcohol use are complicated as findings are mixed. It is important to note that some studies opted to test certain drinking motives as predictors of alcohol use independently (Choi et al., 2016; Read et al., 2003; Wemm et al., 2018) rather than all at once, which may have contributed to the disparate findings across samples. However, given how each motive has been identified by prior studies as sharing a positive relation to alcohol use among college students, there is collective support for the idea that all drinking motives share a notable relation to alcohol use (Kuntsche et al., 2005). Future research is necessary for a more conclusive understanding of the relation between drinking motives and alcohol use.

Hazardous Drinking

Hazardous drinking is a significant concern when it comes to college student well-being (Scholly et al., 2014). Hazardous drinking differs from HED in that hazardous drinking is a pattern of HED, whereas HED can be a single occurrence (Linden-Carmichael et al., 2017; World Health Organization, 2021). “Hazardous drinking” is used interchangeably with “problematic”, “heavy drinking” or “high-intensity drinking” in past literature (Davoren et al., 2015; Linden-Carmichael et al., 2017; Reid et al., 1999; Walitzer & Connors, 1999).

As with quantity and frequency indicators of alcohol use, coping and enhancement motives share notable relations to hazardous drinking. For example, when assessing the relation between college student drinking motives and alcohol use behaviors, Aurora and Klanecky

(2016) reported that of the four motives, coping and enhancement motives were the strongest predictors of hazardous drinking. This finding encourages the idea that students anticipate alcohol can potentially alleviate senses of shame or guilt, while indulging in the temporary positive effects alcohol provides. Similarly, cross-sectional analysis by Nehlin & Oster (2019) demonstrated that enhancement, coping, and social motives were strongly associated with hazardous drinking, with enhancement motives most frequently reported. The relation between enhancement motives and hazardous drinking is supported by previous literature (Fisher et al., 2020; Madson et al., 2015) and has been observed among similar non-college aged individuals (Holloway & Bennett, 2019).

To my knowledge, past research indicates three of the four drinking motives are significantly associated to hazardous drinking, excluding drinking to conform. As suggested by Choi et al. (2016) if conformity motives are negatively related to alcohol use quantity, students who drink to conform may feel disinclined to engage in hazardous use. Given the potential negative outcomes associated with hazardous drinking, additional research is needed to understand factors that contribute to this health risk behavior.

Drinking Motives and Negative Alcohol-Related Outcomes

In addition to associations with college student alcohol use behaviors, drinking motives have been empirically linked with adverse, or negative, alcohol-related outcomes (Fisher et al., 2020; Howell et al., 2016; Wahesh et al., 2015). Negative alcohol-related outcomes are conceptualized as consequential incidents or behaviors from which alcohol was an associated factor (Pernanen, 2001). Previous literature has used the terms “outcomes”, “consequences” and “alcohol-related problems” interchangeably (Gmel & Rehm, 2003). Memory blackouts, academic distress, physical injury, and risky sexual behavior are a few of the numerous negative

outcomes stemming from alcohol use (Kilwein & Looby, 2018; White & Hingson, 2013). Negative outcomes are often regarded as less concerning to students who engage in hazardous alcohol use compared to students who do not (Crawford et al., 2004). In addition, students who engage in hazardous alcohol use believe they are more capable of avoiding alcohol-related negative outcomes; perhaps this is due to the motivations behind their drinking.

There is a substantial amount of research suggesting coping motives are positively associated with the quantity of negative outcomes students face due to their alcohol use (Armeli et al., 2010; Bravo et al., 2018; Read et al., 2003). As mentioned above, Wemm and colleagues (2018) used cluster analyses to assess undergraduate students' negative alcohol-related within the past year, based on their drinking expectancies, coping motives, anxiety, and depression. The negative alcohol-related outcomes measured included poor test performance, verbal and physical aggression, and driving a vehicle while intoxicated. Of the three clusters that emerged, one cluster consisted of students who displayed high degrees of drinking to cope. Individuals in this cluster reported the highest quantity of negative alcohol-related outcomes. Although these students also exhibited strong symptoms of depression and anxiety, this finding suggests drinking to cope shares an important link to negative alcohol-related outcomes (Bravo et al., 2016).

Coping motives appear not only to be associated directly to negative alcohol-related outcomes but may also mediate two contributing factors: alcohol tolerance and alcohol regulation (Khan et al., 2018). Whereas drinking to cope mediated the relation between negative alcohol-related outcomes and student alcohol regulation, students who displayed a lower degree of alcohol tolerance were more likely to drink to cope while experiencing negative emotions. This relation resulted in a higher number of negative alcohol-related outcomes. Therefore, it is

important for students to recognize their alcohol tolerance level, because negative alcohol-related outcomes could include patterns of HED, guilt over drinking, having a lack of control over drinking (Holloway & Bennett, 2019) and solitary drinking (Waddell et al., 2020).

Enhancement motives are also important to consider, as college students who drink to enhance are at an increased risk of negative alcohol-related outcomes compared to students who do not (Herchenroeder & Bravo et al., 2020; Madson et al., 2015). For example, Madson et al. (2015) collected cross-sectional data to explore relations between drinking motives, protective behavioral strategies, and alcohol use behaviors and outcomes among African American college students. Drinking to enhance was the only motive directly associated with not only alcohol use but related negative alcohol-related outcomes. In addition, students who drank to enhance were less likely to exercise protective behavioral strategies to reduce their alcohol consumption. These findings suggest that those who are satisfied with the positive effects of alcohol feel more inclined to continue drinking.

Further supporting the role of coping and enhancement motives on negative alcohol-related outcomes, Cook et al., (2020) administered self-monitoring logs to college students examining their daily levels of alcohol intake, drinking motives, and negative alcohol-related outcomes over a 30-day period. Students were asked to indicate days where they displayed coping motives, enhancement motives, a combination of both motives, and neither motive. Coping motives, enhancement motives, and a combination of the two motives were each significantly associated with negative outcomes experienced. However, it is possible additional factors could have accounted for such alcohol use behavior, as these results are contested. This idea is evidenced by Merrill et al., (2014) who for two years collected longitudinal data exploring alcohol-related outcomes among junior and senior undergraduate students. Eight

domains of negative alcohol-related outcomes were assessed including impaired control, diminished self-perception, poor self-care, and risky behaviors. Coping motives were positively associated with negative alcohol-related outcome frequency, while enhancement motives were only indirectly associated through increased alcohol use after a one-year follow-up. This finding suggests that of the two motives, drinking to cope may play a larger role in resulting negative outcomes from student alcohol use. This suggestion is supported by Kuntsche et al. (2005) who summarized a number of cross-sectional studies to conclude that while enhancement motives are associated with negative alcohol-related outcomes, this relation is qualified by present coping motives in college student drinkers. Indeed, when coping motives were controlled, there was a significantly diminished association between drinking to enhance and negative alcohol-related outcomes. Given the opposing evidence, further research is necessary to better explain these relations.

Other work has explored college students' drinking motives, as Wahesh and colleagues (2015) collected cross-sectional data and investigated how drinking motives mediated associations between college students drinking norms and expectancies and alcohol use outcomes. Interestingly, all four drinking motives demonstrated statistically significant associations with alcohol-related negative outcomes. Specifically, enhancement motives, but not social motives, were indirectly associated with negative alcohol-related outcomes via alcohol use intensity, replicating the findings of Merrill and colleagues (2014) noted above. In addition, both coping and conformity motives mediated the relation between student negative drinking outcome expectancies and negative drinking outcomes. In other words, negative drinking expectancies were positively associated with coping and conformity motives which, in turn, were positively associated with negative alcohol-related consequences.

Overall, results indicate a crucial relation to consider between coping and enhancement drinking motives and negative alcohol-related outcomes among college students. This idea contrasts with either marginal indirect or nonsignificant associations observed involving social and conformity drinking motives. To my knowledge, outside of findings by Wahesh and colleagues (2015), there is relatively little data supporting a noteworthy relation between social or conformity motives and negative alcohol-related outcomes among college students. Given that Wahesh and colleagues are the only authors from the studies observed to produce evidence that all four drinking motives are associated with negative alcohol-related outcomes, future research is warranted to explore these relations.

Summary

Based on the extant research, drinking motives appear to be an important factor to help understand both alcohol use behavior and negative alcohol-related outcomes in college students. Although relations between each motive and alcohol use have been identified, coping and enhancement motives seem to have the strongest relation to negative alcohol-related outcomes. However, inconsistencies across studies confirm the need for continued investigation between drinking motives for both alcohol use and related negative outcomes to better determine how these relations impact the lives of college students. The aforementioned studies are not without several limitations. First, several studies measured associations for specific motives, instead of all four recognized motives (Choi et al., 2016; Khan et al., 2018; Read et al., 2003; Wemm et al., 2018). Second, Merrill and colleagues (2014) used a sample consisting of junior and senior college students, meaning results cannot be generalized across first- and second-year undergraduates. Future studies, if possible, should attempt to include all undergraduate levels to better represent the collegiate student population. Third, interchangeable terms have been used

throughout the literature when measuring similar variables. These terms could result in mixed perceptions from student participants that misalign with what the study intends to measure, thus leading to varied data. For example, a student asked to identify both “consequences” and “problems” from his or her alcohol use could result in different responses. Nonetheless, certain researchers accounted for tailored labeling, specifying which “consequences” or “problems” they intended to measure (Holloway & Bennett, 2019; Merrill et al., 2014; Wemm et al., 2018). Future research must continue to specify these outcomes to diminish the risk of participant bias regarding interchangeable terms.

Personality and Alcohol Use

An additional factor to consider in college student alcohol use is the role of personality disorders. Among U.S. adults, comorbidity between personality disorders and substance use disorders reach 22.6% (Lenzenweger et al., 2007), with the average age of onset for a substance use disorder being 21 years old (Kessler, 2004) and symptom criteria for personality disorders developing throughout adolescence (Paris, 2013). These prevalence rates stress the importance of assessing maladaptive personality traits in relation to alcohol use and its related negative outcomes.

Cluster B Personality Disorders and Alcohol Use and Outcomes

Cluster B personality disorders are distinguished by impulsivity and negative affectivity, traits significantly associated with alcohol use problems among college students (James & Taylor, 2007). This group of disorders consists of antisocial personality disorder, borderline personality disorder, narcissistic personality disorder, and histrionic personality disorder. The role of impulsivity may help explain why college students’ symptoms of Cluster B personality disorders and substance use disorders are positively correlated (Taylor, 2005). This is because

impulsivity is a prominent trait among those diagnosed with a Cluster B personality disorder or substance use disorder (Alcorn et al., 2013). Taylor also reported that the number of negative life events documented among college students positively related to the number of symptom criteria they experienced for both Cluster B and alcohol use disorder. In other words, students who had experienced more negative life events also indicated more Cluster B and alcohol use disorder symptoms. Apart from histrionic personality disorder, research has documented positive correlations between Cluster B personality disorders and both total and hazardous alcohol use among college students (Crawford et al., 2004.). Specifically, Crawford and colleagues explored the relations between college student personality traits of borderline personality disorder, narcissistic personality disorder, and antisocial personality disorder, as well as student perceived risk in negative alcohol-related outcomes, capability in avoiding these outcomes, and alcohol use. Cross-sectional data analyses demonstrated that while the three Cluster B personality disorders were significantly positively correlated with total and problematic alcohol use, borderline and antisocial personality disorder were also associated with the number of days students drank per week. In addition, students with more borderline and narcissistic personality traits were more likely to fear social embarrassment due to their alcohol use, with those reporting higher borderline traits feeling less confident in being able to avoid negative alcohol-related outcomes. Overall, it may be important to account for behaviors demonstrating impulsivity and negative affect among college students when assessing alcohol intake and the negative outcomes experienced from it.

Narcissism

Of the Cluster B personality subtypes, narcissism is one which in recent decades has seen subclinical levels rise among college populations (Dingfelder, 2011; Twenge et al., 2008).

The American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5) identifies nine symptom criteria of narcissistic personality disorder, including a grandiose sense of self-importance, perceived entitlement or superiority, a need for admiration, and lacking empathy (American Psychiatric Association [APA], 2013). Because narcissism can be measured as a dimensional construct, it is possible almost all college students have a capacity to display narcissistic behavior. There are two types of narcissism: grandiosity and vulnerability. Narcissistic grandiosity is distinguished by arrogant assertiveness, whereas narcissistic vulnerability often relates to feelings of inadequacy (Pincus & Roche, 2011), and positively correlates with neurotic behavioral traits (Miller et al., 2011). Grandiose and vulnerable narcissism share overlapping features, such as entitled self-importance (Krizan & Herlache, 2017).

Research has shown subclinical narcissistic personality traits are positively predictive of undergraduate student alcohol use (Hill et al., 2016). Luhtanen and colleagues (2005) collected cross-sectional data over eight months on three occasions. Student narcissistic traits were measured at Time 1, followed by alcohol use and HED frequency at Time 2 and 3. Results indicated subclinical narcissistic traits positively predicted HED status (binge-drank at least once during the semester), the quantity of alcohol consumption within a week's time, and marginally predicted overall alcohol use. Perhaps the association between narcissistic personality traits and alcohol use is due to the perceived risk of a damaged ego when in environments that encourage drinking behavior, resulting in negative emotionality that can encourage drinking to cope (Cooper et al., 1995).

Previous research has observed that subclinical narcissistic traits share positive associations not only to alcohol use but also its related negative outcomes. For example, Kramer

and colleagues (2019) collected cross-sectional data on undergraduate students in part assessing the relation between subclinical narcissistic traits and student alcohol use, along with related consequences of consumption. When controlling for protective behavioral strategies from students, there was a significant positive association between narcissistic traits and negative alcohol-related outcomes. Similarly, Welker and colleagues (2019) collected cross-sectional data examining associations between subclinical narcissistic grandiosity and vulnerability to undergraduate alcohol use and related negative outcomes. Findings indicated both subclinical narcissistic grandiosity and vulnerability were positive predictors of alcohol use. Additionally, subclinical narcissistic vulnerability was significantly related to negative alcohol-related outcomes. These findings imply that entitled self-importance paired with neurotic behavioral traits may help predict college students' intensity of alcohol use consumption and its related negative outcomes.

Personality Traits and Drinking Motives

Personality traits should also be considered when assessing students' drinking motives, because drinking motives and particular personality traits have been empirically linked: specifically, enhancement motives with extraversion, and coping motives with neuroticism (Cooper et al., 2000; Stewart et al., 2001).

To my knowledge, few studies have assessed drinking motives in relation to personality traits and alcohol use among college students. Nonetheless, internal drinking motives have been seen to mediate the relation between alcohol use and common traits in Cluster B personality disorders, such as impulsivity and negative affectivity (Trull et al., 2004). This effect is evidenced by Tragesser et al., (2008) who collected cross-sectional data from a college student sample of 18- and 21-years old, in part, to investigate drinking motives patterns in relation to

recognized personality disorder symptoms. Results indicated enhancement drinking motives partially mediated the relation between Cluster B personality symptoms and the presence of an alcohol use disorder. These findings suggest that drinking to enhance positive emotions may be an important consideration when examining the relation between Cluster B personality disorders and alcohol use. However, this study had several limitations. First, participants were limited by a restricted age range. Those between 18-21 do not accurately represent the undergraduate population across the country. The majority age group at a four-year public or private university is 18-24 years old (The Hamilton Project, 2017). Second, student participants were only asked to indicate presence of alcohol use disorder symptoms, rather than typical drinking behaviors. Given that 9% of college students meet the criteria for an alcohol use disorder whereas more than half of all college students report alcohol use (SAMHSA, 2019), it is important for future studies to incorporate overall use behaviors to better generalize results about the college student population. Third, coping and enhancement motives were the only two motives measured. As previously stated, researchers should be mindful to include all four drinking motives, to understand the full range of associations between drinking motives and alcohol outcomes among this heavy use population. Fourth, the DSM-5 categorizes Cluster B personality symptoms by several distinct traits including impulsivity and negative affectivity (APA, 2013, Vazire & Funder, 2006). Results cannot be universally applied for each disorder within Cluster B, as each disorder has unique symptom criteria.

What is surprising about these findings is that coping motives did not mediate the relation between alcohol use disorder and Cluster B symptoms, given that the earlier work of Tragesser and colleagues (2007) indicated that coping motives often demonstrate a strong relation to negative alcohol-related outcomes. In this study, longitudinal data were collected and assessed

over a period of 16 years measuring variables related to adult alcohol use, such as (a) the rate of alcohol use within 30 days of the questionnaire, (b) frequency of HED, (c) negative alcohol outcomes, as well as (d) coping and enhancement motives. At Year 11, researchers also interviewed participants regarding personality disorder symptom counts and prevalence of an alcohol use disorder. Analyses were conducted based on the data collected between years 11 and 16, when participants averaged 29-34 years old. Cluster B symptoms shared strong relations with both coping and enhancement motives. Specifically, coping motives mediated the association between participant Cluster B symptoms and adults' level of alcohol dependence. Enhancement motives significantly mediated the relations between Cluster B symptoms and rate of alcohol use, frequency of HED, negative alcohol-related outcomes, and alcohol dependence among participants. In addition, enhancement motives fully mediated the relation between Cluster B symptoms reported at year 11 and negative alcohol-related outcomes reported at year 16. These findings suggest that enhancement motives play a crucial role in the consumption of alcohol and its negative outcome by those who meet symptom criteria for a Cluster B personality disorder. It is important to note that although coping and enhancement motives demonstrated significant mediation in relations between cluster B symptoms and alcohol use variables, Cluster A and C lacked such relations to these two drinking motives.

Despite these findings, little research has been conducted assessing the relation between all four drinking motives, alcohol use and subclinical personality traits of Cluster B personality disorders, particularly narcissism, among college populations. Much of the known literature instead focused on relations between borderline and antisocial personality disorder to alcohol use and its related negative outcomes. This arguable neglect of narcissism is surprising, given that symptom criteria of narcissistic personality disorder are significantly present in young adults

compared to older populations (Stinson et al., 2008). In addition, motivational factors, particularly drinking motives have been encouraged as a variable to assess when analyzing the relation between subclinical narcissistic traits and alcohol use (Hill et al., 2016; Kramer et al., 2019).

To my knowledge, no prior research has examined the moderating role of drinking motives on the relations between subclinical narcissism subtypes, past-month alcohol use, HED, and negative alcohol-related outcomes among college populations. Indeed, previous research has instead analyzed the mediational role of drinking motives on relations between alcohol use variables, such as negative outcomes, outcome expectancies, rate of alcohol use, and HED (Aurora & Klanecky, 2016; Read et al., 2003; Wahesh et al., 2015). In addition, the mediational role of drinking motives has been assessed on the relations between Cluster B personality disorder symptoms and alcohol use and related negative outcomes (Tragesser et al., 2007). Taken together, previous research has demonstrated that alcohol use outcomes and certain personality traits are related in part to one's drinking motives. However, it is important to understand how the relations between personality traits and alcohol use outcomes varies depending on one's identified drinking motive(s). Understanding these relations may help students recognize how their personality traits and drinking motives reason for drinking can contribute to differences in their alcohol use and related outcomes.

Present Study

The current study investigated the relations between drinking motives, subclinical narcissism subtype traits, past-month alcohol use, HED frequency, and negative alcohol-related outcomes. Additionally, this study examined the moderating role of drinking motives between these relations. This study was conducted to supplement our current understanding of

problematic alcohol use and health risk behaviors among college students, thereby enhancing associated screening processes and therapeutic strategies related to collegiate substance misuse.

The following research questions were conceived based on prior studies.

Research Questions

Research Question One: Are drinking motives and subclinical narcissism subtypes significantly associated with college student past-month alcohol use, HED frequency, and negative alcohol-related outcomes? I predicted the four drinking motives would be positively associated with past-month alcohol use and negative alcohol-related outcomes whereas coping, enhancement, and social motives will be positively related to HED, given previous literature (Aurora & Klanecky, 2016; Fisher et al., 2020; Kuntsche et al., 2005; Skalisky et al., 2019; Wahesh et al., 2015). I also predicted that subclinical grandiose traits would be positively associated with past-month alcohol use and HED frequency, whereas subclinical vulnerable traits would share no significant association to either alcohol use outcome, given past literature has demonstrated narcissistic traits are associated with college student alcohol use (Hill et al., 2016; Kramer et al., 2019; Luhtanen et al., 2005; Welker et al., 2019). Further, I predicted that both subclinical narcissistic grandiosity and vulnerability would be positively associated with negative alcohol-related outcomes, given similar empirical findings (Welker et al., 2019).

Research Question Two: Do drinking motives moderate the association between subclinical narcissism subtype traits and past-month alcohol use? I predicted that enhancement would exacerbate the relation between subclinical grandiose traits and past-month alcohol use, whereas coping motives would exacerbate the relation between subclinical vulnerable traits and past-month alcohol use. This hypothesis was based on past research suggesting coping and enhancement motives help explain associations between Cluster B personality symptoms and

alcohol use (Tragesser et al., 2007, Tragesser et al., 2008). Because students who indicate high levels of subclinical grandiose narcissistic traits may display excessive self-confidence (Pincus & Lukowitsky, 2010), enhancement motives may be more salient as students who drink to enhance do so in hopes of strengthening positive affect. On the other hand, students who indicate high levels of subclinical vulnerable narcissistic traits may display feelings of shame (Krizan & Herlache, 2017), a negative emotion frequently associated with drinking to cope. I made no formal hypotheses for the moderating roles of social and conformity drinking motives given the lack of empirical evidence to date.

Research Question Three: Do drinking motives moderate the relation between subclinical narcissism subtype traits and HED frequency? I predicted that enhancement would exacerbate the relation between subclinical grandiose traits and HED frequency, whereas coping motives would exacerbate the relation between subclinical vulnerable traits and HED frequency. given previous associations observed between drinking motives and HED (Aurora & Klanecky, 2016; Fisher et al., 2020; Holloway & Bennett, 2019; Nehlin & Oster, 2019) as well as the role enhancement motives play in mediating Cluster B symptoms with HED frequency (Tragesser et al., 2007) and how narcissism positively predicts HED (Luhtanen et al., 2005). Given identified collegiate campus drinking cultures (Presley et al., 2002), students who display strong subclinical grandiose narcissistic traits may drink heavily to achieve a sense of social dominance over academic peers, in which case enhancement motives may be more salient to these participants. On the other hand, students who display subclinical vulnerable narcissistic behaviors may indicate feelings of shame or fear of criticism (Krizan & Herlache, 2017), and with coping motives being significantly associated with negative emotionality (Cooper et al., 1994), coping motives may be more salient to participants, especially because coping motives is

the most consistently related motive to problematic drinking (Merrill & Thomas, 2013). I made no formal hypotheses for the moderating roles of social and conformity drinking motives given the lack of empirical evidence to date.

Research Question Four: Do drinking motives moderate the relation between narcissism subtype traits and negative alcohol-related outcomes? I conducted exploratory analyses to investigate if coping and enhancement motives would positively moderate relations between the subclinical narcissism subtypes and negative alcohol-related outcomes given coping motives have been empirically linked to neuroticism (Cooper et al., 2000; Stewart et al., 2001), which has positively correlated to narcissistic vulnerability (Miller et al., 2011) whereas enhancement motives have been empirically linked to extraversion (Cooper et al., 2000 Stewart et al., 2001), which has been positively correlated to narcissistic grandiosity (Zajenkowski & Szymaniak, 2021). Because those who report higher levels of subclinical grandiose narcissistic behavior are more likely to display an inflated sense of subjective well-being (Ronningstam, 2005), I expected enhancement motives to be particularly relevant for subclinical grandiose narcissism as it relates to negative alcohol-related outcomes experienced. On the other hand, because those who report high levels of subclinical vulnerable traits may display a hypersensitivity to criticism of their actions (Koepernik et al., 2021), coping motives may be more salient as it relates to negative alcohol-related outcomes. I made no formal hypotheses for the moderating roles of social and conformity drinking motives given the lack of empirical evidence to date.

CHAPTER II: METHOD

Participants

Young adult college students from a large, Midwestern University were invited to participate in this study. Eligible participants included students who were between the ages of 18 and 24 and had consumed alcohol within the past 30 days ($N = 406$; 81% female; $M_{age} = 20.13$, $SD = 1.69$; 10% Hispanic, 85% White). An a priori power analysis, with $\alpha = .05$ and power at .80 indicated that I needed $N = 156$ participants to detect a small effect, which was observed in past research (Cook et al., 2020; Madson et al., 2015; Wahesh et al., 2015; Wemm et al., 2018).

Procedure

The participant recruitment process initially targeted young adult psychology undergraduate students through a research participation sign-up system for students seeking extra credit in psychology classes. After several weeks of data collection through this system, this study then targeted all students aged 18-24 across all majors, regardless of class standing. A recruitment email was sent to all students that contained a brief description of the intent of the study, a statement of the estimated time commitment, and a link to the Qualtrics survey. When students clicked on the Qualtrics survey link, the informed consent appeared highlighting the following questions and concerns: (a) why the student is being asked to participate, (b) directions of participation, (c) expectation of risk, (d) an explanation of data collection, and (e) whom to contact for further questions. Participants were asked to provide informed consent, acknowledging that they are 18 years or older and agree to participate. The screening tool asked questions about their age and if they have consumed alcohol in the past month. Students who indicated that they were not (a) between the ages of 18-24 or (b) had not consumed alcohol in the past month were exited from the survey.

Measures

Past-Month Alcohol Use

Two items were used to assess the quantity and frequency of participants alcohol consumption (NIAAA, 2003). Participants were asked the following: (1) During the past 30 days, how often did you usually have any kind of drink containing alcohol? (2) Think of all the times you have had a drink during the past 30 days. How many alcoholic drinks did you have on a typical day when you drank alcohol? Participants were provided with a drop-down selection of 0-30 to indicate the number of days and drinks within the past 30 days, as well as the response option “I have never drunk alcohol in my life.” Participants who chose this response were redirected to the end of the survey. A quantity X frequency score was calculated to reflect total alcohol consumption, with a total possible score range of 1-900. Greater scores indicated greater alcohol use. Previous research has used similar quantity and frequency scales to measure alcohol use (Finan et al., 2015) and has demonstrated moderate to good test-retest reliability (Spirito et al., 2016).

Heavy Episodic Drinking

A single-item measure was used to indicate the frequency in which participants engaged in HED. Participants were asked the following: “During the past 30 days, on how many days did you drink five or more (if male) or four or more (if female) drinks in a row in a two-hour period?” Participants indicated the number of days in the past month (0-30) they drank. Previous research has used this single-item measure to indicate participant engagement in HED (O’Hara et al., 2014; Pedrelli et al., 2016), and is a recommended question to use by the NIAAA.

Negative Alcohol-Related Outcomes

The *Brief Young Adult Alcohol Consequences Questionnaire* (B-YAACQ; Kahler et al., 2005) is a 24-item measure that was used to assess negative outcomes stemming from alcohol use. Participants were asked to indicate whether a given negative outcome related to their alcohol use occurred in the past 30 days. Response options were rated dichotomously, with 0 = No and 1 = Yes. Sample items included “While drinking, I have said embarrassing things” and “I have taken foolish risks when I have been drinking.” The B-YAACQ accounts for a broad range of negative alcohol-related outcomes, such as social consequences, impaired control over drinking, self-perception, self-care, risk behavior, academic/occupational, DSM-IV dependence, and blackout drinking. A count summary score was calculated, with a total possible score range of 0 to 24. The total score reflected how many consequences participants had experienced in the past 30 days. The B-YAACQ has demonstrated acceptable reliability ($\alpha = .93$) and convergent validity (.78) across the young adult collegiate population (Kahler et al., 2006; Terlecki et al., 2014).

Subclinical Narcissistic Personality Traits

The *Five-Factor Narcissism Inventory – Short Form* (FFNI-SF; Sherman et al., 2015) is a 60-item measure comprised of 15 personality traits that was used to measure the prevalence and severity of subclinical grandiose and vulnerable narcissistic traits in participants. Participants used a 5-point Likert scale from 1 (disagree strongly) to 5 (agree strongly) to report their position on each item statement. Sample items included “I am extremely ambitious” and “I only associate myself with people of my caliber.” Higher scores indicated stronger subclinical narcissistic personality traits. A summary score was calculated based on the number of respective statements answered which reflect narcissistic behavior, with three items requiring a reverse score.

Subclinical grandiose traits were measured based on the sum of items measuring indifference, exhibitionism, authoritativeness, grandiose fantasies, manipulativeness, exploitativeness, lack of empathy, arrogance, acclaim seeking, and thrill-seeking, totaling out to 44 items, with a possible score range of 44 to 220. Subclinical vulnerable traits were measured based on the sum of items measuring reactive anger, shame, need for admiration, and distrust, totaling out to 16 items, with a possible score range of 16 to 80. The FFNI-SF has demonstrated good convergent validity (.96) when assessed in a sample consisting of a variety of populations, including undergraduate students (Sherman et al., 2015). In the current study, the FFNI-SF demonstrated strong reliability from the vulnerable narcissism subscale (.82) as well as from the grandiose narcissism subscale (.89), aligning with past research among college populations (Eski, 2016).

Drinking Motives

The *Drinking Motives Questionnaire-Revised* (DMQ-R; Cooper, 1994) is a 20-item measure that was used to indicate reasons for participant alcohol use frequency. This measure was broken into four primary subscales: (a) social, (b) coping, (c) enhancement, and (d) conformity. Each scale consisted of five items. Participants used a 5-point Likert scale from 1 (almost/never) to 5 (almost always/always) to rate reasons for their past-month alcohol use. Sample items included “to cheer up when you are in a bad mood” (coping) and “because it makes social gatherings more fun” (enhancement). A mean score was calculated for each scale based on their respective items, with each scale demonstrating a possible score range of 5 to 25. The DMQ-R factor structure has been validated in previous literature across the college student population (MacLean & Lecci, 2000; Martens et al., 2008). In the current study, the DMQ-R demonstrated acceptable internal reliability for the enhancement, coping, conformity, and social

subscales ($\alpha = .89, .88, .88, \text{ and } .87$, respectively), aligning with past research (MacLean & Lecci, 2000).

Demographic Survey

The demographic survey asked general information about the participant, including age, gender, ethnicity, major, place of residence, and academic year.

CHAPTER III: ANALYTIC STRATEGY

Analyzing Participant Response

Study variables were formed using SPSS syntax. Of the 687 total responses collected, 29 responses were discarded as being marked as spam. Forty-one responses were discarded for failing to answer more than 80% of all survey items. Sixty-one responses were discarded as these participants indicated completing the survey both through SONA as well as through the link provided via email. Eighty-six responses were discarded for having reported no alcohol use within 30 days of survey completion. Forty-three responses were discarded for having a survey completion time of under 300 seconds. Nine responses were discarded for failing to appropriately answer an attention check item, and 12 responses were discarded for failing to answer items related to either narcissistic traits or negative alcohol-related outcomes experienced. Analyses were conducted with the remaining 406 responses.

Race served as a control variable, coded to indicate whether participants identified as white or non-white. Race was coded such that 0 = non-white and 1 = white. “Non-white” responses consisted of the following: American Indian or Alaska Native, Asian (including Indian, Pakistani, and Bangladeshi), Black or African American, Filipino, and Native Hawaiian or other Pacific Islander. Additionally, sex served as a control variable, coded to indicate whether participants identified as “male” or “female”. Sex was coded such that 0 = female and 1 = male. Age served as the third and final control variable.

Descriptive Statistics

I conducted pairwise correlations to examine associations among all study variables using Stata/SE version 15.1, with subclinical grandiose and vulnerable narcissistic traits, enhancement, coping, conformity, and social drinking motives serving as predictor variables, and past-month

alcohol use, HED frequency, and negative alcohol-related outcomes serving as criterion variables. All predictor variables were mean centered for the purpose of each variable intercept indicating what their values 1 SD above and below the mean would be in relation to the moderator variable when the mean value for the predictor variable equaled 0.

Hypothesis Testing

I conducted Poisson regression analyses to test Research Questions 1, 2, 3, and 4. Poisson regression is effective when examining count data, which is why this regression analysis approach was selected over linear regression. Poisson regression also provides incidence rate ratios for each predictor variable. Incident rate ratios indicate of the likelihood of an alcohol outcome based on the predictor variable, which can be interpreted as a probability. A statistically significant incident rate ratio greater than 1.00 means that the likelihood of a dependent variable is greater when the given predictor variable is accounted for. Conversely, a statistically significant incident rate ratio lower than 1.00 means that the likelihood of a dependent variable is lower when the given predictor variable is accounted for.

To test Hypothesis 1, I examined the main effects of each predictor variable for each alcohol outcome variable (past-month alcohol use, HED frequency, and negative alcohol-related outcomes). Similarly, to test Hypothesis 2, 3, and 4, I examined interactions between each of the four drinking motives and both subclinical narcissistic subtype traits for each alcohol outcome variable. Significant interactions were examined using simple slopes analyses at 1 SD above and below the mean of each interaction term. Age, sex, and ethnicity served as control variables in all models.

CHAPTER IV: RESULTS

Descriptive Statistics

Descriptive statistics and bivariate correlations for study variables are provided in Table 1. Participants demonstrated a mean subclinical grandiose score of 108.98 ($SD = 20.54$) and a mean subclinical vulnerable score of 49.91 ($SD = 9.94$). Social motives were the most strongly reported drinking motive, whereas drinking to conform was the weakest motive reported. The mean intensity of past-month alcohol use consumption was 27.77 ($SD = 27.73$); the mean number of days students engaged in HED was 2.16 ($SD = 3.01$); and the mean number of negative alcohol-related outcomes experienced was 4.39 ($SD = 3.71$).

Pairwise correlations indicated a small correlation between subclinical grandiose and vulnerable narcissistic traits. Surprisingly, unlike subclinical grandiose traits, subclinical vulnerable traits were not significantly correlated with either past-month alcohol use or HED frequency. However, both subclinical grandiose and vulnerable traits shared small correlations with negative alcohol-related outcomes. Generally, there were small to moderate correlations between subclinical narcissistic subtype traits and drinking motives. However, subclinical grandiose traits were not significantly correlated with conformity motives, and subclinical vulnerable traits were not significantly correlated with social motives.

In addition, there were small to large correlations among the four drinking motives. Moreover, there were small, moderate, and large correlations among the four drinking motives and the three alcohol outcomes. Notably, however, conformity motives were not associated with past-month alcohol use or HED frequency. Finally, there were consistent large correlations among past-month alcohol use, HED frequency, and negative alcohol-related outcomes.

Table 1*Bivariate Associations and Descriptive Information Among Study Variables*

	1	2	3	4	5	6	7	8	9
1. Grandiose Traits	--								
2. Vulnerable Traits	0.16**	--							
3. Enhancement	0.21***	0.16**	--						
4. Coping	0.12*	0.37***	0.48***	--					
5. Conformity	0.07	0.26***	0.09	0.27***	--				
6. Social	0.20***	0.10	0.55***	0.33***	0.19***	--			
7. Alcohol Use Intensity	0.17***	0.01	0.32***	0.24**	-0.01	0.27***	--		
8. HED Frequency	0.16**	-0.03	0.32***	0.26***	-0.02	0.23***	0.81***	--	
9. Negative Outcomes	0.26***	0.22***	0.35***	0.40***	0.15**	0.32***	0.57***	0.53***	--
M	108.98	49.91	1.93	1.02	.414	2.38	25.78	2.16	4.39
(SD)	(20.54)	(9.94)	(.947)	(1.04)	(.69)	(1.02)	(27.74)	(3.01)	(3.71)

Note. Pairwise correlations were used to assess associations among study variables. Heavy episodic drinking (HED) was

abbreviated in this table.

* $p < .05$; ** $p < .01$; *** $p < .001$

Research Questions and Hypothesis Testing

Main Effects

Research Question 1 addressed the role of subclinical narcissistic traits (i.e., grandiose and vulnerable) and drinking motives (i.e., enhancement, coping, conformity, and social) as unique predictors of past-month alcohol use, HED frequency, and alcohol-related negative outcomes. I conducted Poisson regression analyses to examine these relations between the variables in three separate models.

For past-month alcohol use model results, refer to Table 2. When holding all other variables constant, subclinical grandiose traits, enhancement motives, coping motives, and social motives each displayed significant positive relations with past-month alcohol use, such that students who indicated stronger degrees of each variable consumed a higher amount of alcohol than students who indicated weaker degrees of each variable. Conversely, subclinical vulnerable traits and conformity motives each displayed a significant negative relation with past-month alcohol use, such that students who indicated stronger degrees of vulnerable traits and drinking to conform consumed lower levels of alcohol use than students who indicated weaker degrees of vulnerable traits or drinking to conform.

Table 2

Poisson Regression Analyses Predicting Past-Month Alcohol Use with Subclinical Narcissistic Subtypes and Drinking Motives

Predictor	Main Effects			Interaction Model		
	<i>IRR (SE)</i>	<i>b</i>	<i>p</i>	<i>IRR (SE)</i>	<i>b</i>	<i>p</i>
Sex	1.52 (.04)	0.42	<.001	1.50 (.04)	0.41	<.001
Age	0.99 (.01)	-0.01	0.030	1.00 (.01)	-0.01	0.200

(Table Continues)

Table 2, Continued

Predictor	Main Effects			Interaction Model		
	<i>IRR (SE)</i>	<i>b</i>	<i>p</i>	<i>IRR (SE)</i>	<i>b</i>	<i>p</i>
Race	1.02 (.00)	0.02	<.001	1.02 (.00)	0.02	<.001
Grandiose Traits	1.00 (.00)	0.00	<.001	1.00 (.00)	0.00	<.001
Vulnerable Traits	0.99 (.00)	-0.01	<.001	0.99 (.00)	-0.01	<.001
Enhancement Motives	1.26 (.02)	0.23	<.001	1.26 (.02)	0.23	<.001
Coping Motives	1.12 (.01)	0.19	<.001	1.16 (.01)	0.15	<.001
Conformity Motives	0.93 (.02)	-0.07	0.003	0.95 (.02)	-0.06	0.003
Social Motives	1.19 (.02)	0.18	<.001	1.20 (.02)	0.18	<.001
Grandiose x Enhancement				1.00 (.00)	0.00	<.001
Grandiose x Coping				1.00 (.00)	0.00	0.574
Grandiose x Conformity				1.01 (.00)	0.01	<.001
Grandiose x Social				0.99 (.00)	-0.01	<.001
Vulnerable x Enhancement				0.99 (.00)	-0.01	<.001
Vulnerable x Coping				0.99 (.00)	-0.01	<.001
Vulnerable x Conformity				0.99 (.00)	-0.01	<.001
Vulnerable x Social				1.01 (.00)	0.01	<.001
χ^2	2004.78 (9) ***			2242.46 (17) ***		
pR^2	0.20			0.22		
<i>N</i>	365			365		

Note: Variables within this model were mean centered. Sex was coded such that 0 = female and 1 = male and Race was coded such that 0 = non-white and 1 = white. Chi-square value = χ^2 .

Pseudo R-squared = pR^2 . Incident Rate Ratio value = IRR. Standard error value = SE.

*** $p < .001$.

For HED frequency model results, refer to Table 3. As predicted, when holding all other variables constant, subclinical grandiose traits, enhancement motives, coping motives, and social motives each were positively associated with HED frequency, such that students who indicated

stronger degrees of each variable engaged in HED more frequently than students who indicated weaker degrees of each variable. Conversely, subclinical vulnerable traits and conformity motives each displayed a significant negative relation with HED frequency, such that students who indicated stronger degrees of each variable engaged in HED more frequently than students who indicated weaker degrees of each variable.

Table 3

Poisson Regression Analyses Predicting HED Frequency with Subclinical Narcissistic Subtypes and Drinking Motives

Predictor	Main Effects			Interaction Model		
	<i>IRR (SE)</i>	<i>b</i>	<i>p</i>	<i>IRR (SE)</i>	<i>b</i>	<i>p</i>
Sex	1.57 (.14)	0.45	<.001	1.58 (.14)	0.45	<.001
Age	1.00 (.02)	0.00	0.848	1.01 (.02)	0.01	0.789
Race	1.02 (.01)	0.02	0.101	1.02 (.01)	0.02	0.077
Grandiose Traits	1.00 (.00)	0.00	0.027	1.00 (.00)	0.00	0.057
Vulnerable Traits	0.98 (.00)	0.00	<.001	0.98 (.00)	-0.02	<.001
Enhancement Motives	1.32 (.07)	0.05	<.001	1.26 (.07)	0.23	<.001
Coping Motives	1.20 (.05)	0.04	<.001	1.26 (.05)	0.24	<.001
Conformity Motives	0.88 (.06)	0.06	0.054	0.89 (.06)	-0.12	0.084
Social Motives	1.25 (.06)	0.05	<.001	1.28 (.06)	0.25	<.001
Grandiose x Enhancement				1.01 (.00)	0.01	0.001
Grandiose x Coping				1.00 (.00)	0.00	0.080
Grandiose x Conformity				1.00 (.00)	0.00	0.214
Grandiose x Social				0.99 (.00)	-0.01	0.005
Vulnerable x Enhancement				0.99 (.01)	-0.01	0.009
Vulnerable x Coping				0.99 (.00)	-0.01	0.218
Vulnerable x Conformity				0.99 (.01)	-0.01	0.260

(Table Continues)

Table 3, Continued

Predictor	Main Effects			Interaction Model		
	<i>IRR (SE)</i>	<i>b</i>	<i>p</i>	<i>IRR (SE)</i>	<i>b</i>	<i>p</i>
Vulnerable x Social				1.01 (.01)	0.01	0.008
χ^2	256.56 (9) ***			284.15 (17) ***		
pR^2	0.14			0.16		
<i>N</i>	361			361		

Note: Variables within this model were mean centered. Sex was coded such that 0 = female and 1 = male and Race was coded such that 0 = non-white and 1 = white. Chi-square value = χ^2 .

Pseudo R-squared = pR^2 . Incident Rate Ratio value = IRR. Standard error value = SE.

*** $p < .001$.

For negative alcohol-related outcome model results, refer to Table 4. When holding all other variables constant, grandiose traits, enhancement, coping, and social motives each displayed significant positive relations towards negative alcohol-related outcomes, such that students who indicated stronger degrees of each variable experienced more negative alcohol-related outcomes. However, neither subclinical vulnerable traits nor conformity motives were significantly associated with negative alcohol-related outcomes.

Table 4

Poisson Regression Analyses Predicting Negative Alcohol-Related Outcomes Experienced with Subclinical Narcissistic Subtypes and Drinking Motives

Predictor	Main Effects			Interaction Model		
	<i>IRR (SE)</i>	<i>b</i>	<i>p</i>	<i>IRR (SE)</i>	<i>b</i>	<i>p</i>
Sex	0.92 (.07)	-0.08	0.269	0.92 (.07)	-0.08	0.269
Age	0.97 (.01)	-0.03	0.079	0.97 (.02)	-0.03	0.093

(Table Continues)

Table 4, Continued

Predictor	Main Effects			Interaction Model		
	<i>IRR (SE)</i>	<i>b</i>	<i>p</i>	<i>IRR (SE)</i>	<i>b</i>	<i>p</i>
Race	1.02 (.01)	0.02	0.047	1.01 (.01)	0.02	0.042
Grandiose Traits	1.01 (.00)	0.01	<.001	1.00 (.00)	0.01	<.001
Vulnerable Traits	1.00 (.00)	0.00	0.108	1.00 (.00)	0.01	0.046
Enhancement Motives	1.10 (.04)	0.09	0.015	1.09 (.04)	0.09	0.024
Coping Motives	1.18 (.03)	0.17	<.001	1.19 (.04)	0.17	<.001
Conformity Motives	1.02 (.04)	0.02	0.584	1.07 (.05)	0.07	0.098
Social Motives	1.16 (.04)	0.15	<.001	1.17 (.04)	0.16	<.001
Grandiose x Enhancement				1.00 (.00)	0.00	0.140
Grandiose x Coping				1.00 (.00)	0.00	0.890
Grandiose x Conformity				1.00 (.00)	0.00	0.587
Grandiose x Social				1.00 (.00)	0.00	0.054
Vulnerable x Enhancement				1.00 (.00)	0.00	0.289
Vulnerable x Coping				1.00 (.00)	0.00	0.702
Vulnerable x Conformity				0.99 (.00)	0.00	0.110
Vulnerable x Social				1.00 (.00)	0.00	0.971
χ^2		270.98 (9) ***			282.24 (17) ***	
pR^2		0.13			0.13	
<i>N</i>		358			358	

Note: Variables within this model were mean centered. Sex was coded such that 0 = female and 1 = male and Race was coded such that 0 = non-white and 1 = white. Chi-square value = χ^2 .

Pseudo R-squared = pR^2 . Incident Rate Ratio value = IRR. Standard error value = SE.

*** $p < .001$.

Past-Month Alcohol Use Interactions

Research Question 2 addressed the moderating effects of enhancement, coping, conformity, and social drinking motives on the relations between subclinical grandiose and

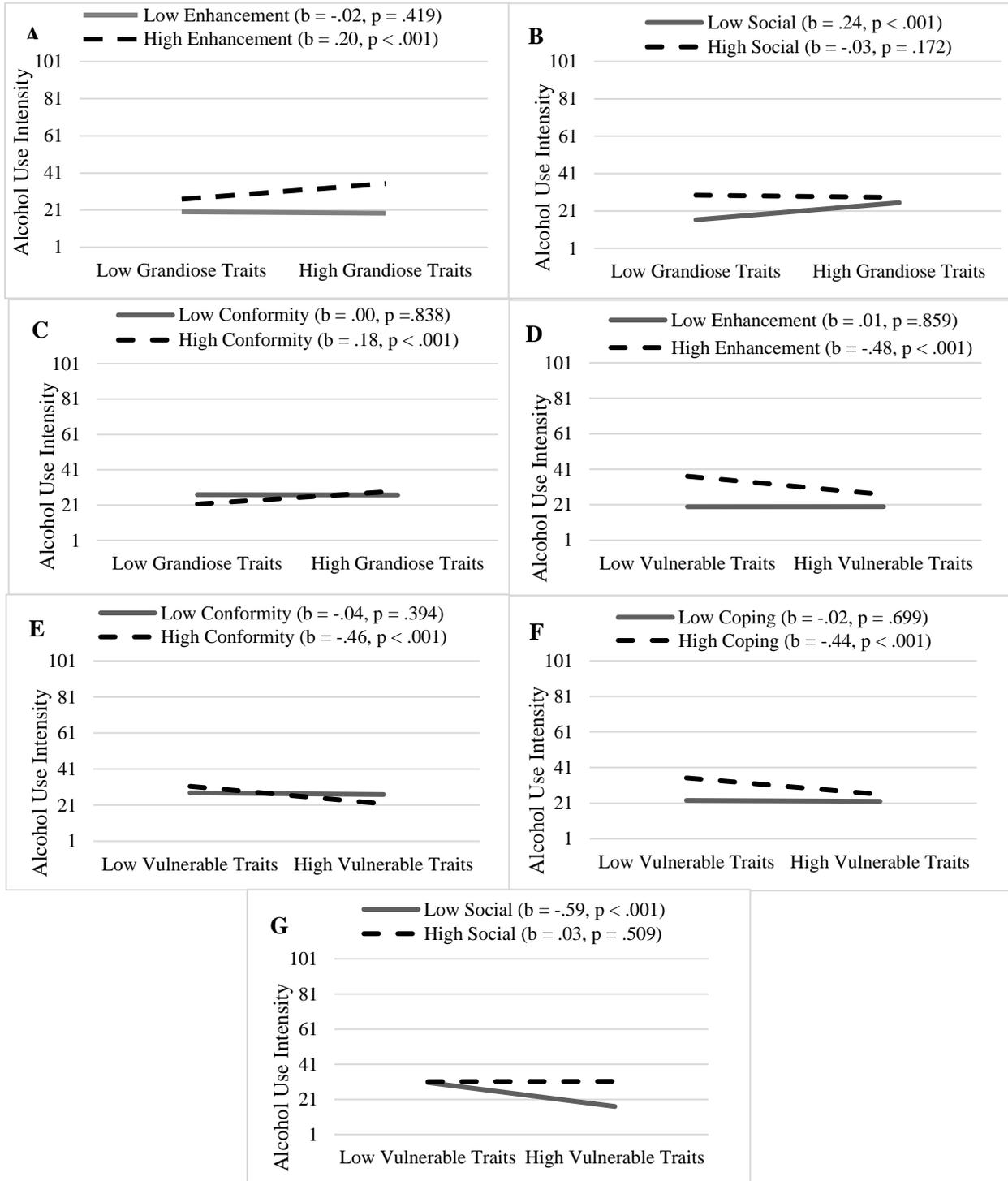
vulnerable narcissistic traits and past-month alcohol use (Table 2). Results from Poisson regression analyses indicated that, when holding all other variables constant, enhancement, conformity, and social motives each interacted with subclinical grandiose traits in the past-month alcohol use model. Plotting and probing these interactions with simple slope analyses (Figure 1) indicated a positive relation between subclinical grandiose traits and past-month alcohol use when students reported high enhancement motives and high conformity motives (Figures 1A and 1C, respectively). Additionally, simple slope analyses indicated a positive relation between subclinical grandiose traits and past-month alcohol use when students reported low social motives (Figure 1B). Surprisingly, coping motives did not moderate the relation between subclinical grandiose traits and past-month alcohol use.

Furthermore, Poisson regression analyses indicated that, when holding all other variables constant, enhancement, coping, conformity, and social motives each interacted with subclinical vulnerable traits in the past-month alcohol use model. Plotting and probing these interactions with simple slope analyses (Figure 1) indicated a negative relation between subclinical vulnerable traits and past-month alcohol use when students reported high enhancement, coping, and conformity motives (Figures 1D, 1F, and 1E, respectively). Additionally, simple slope analyses indicated a negative relation between subclinical vulnerable traits and past-month alcohol use when students reported low social motives (Figure 1G).

Figure 1

Simple Slopes of Subclinical Narcissistic Traits Predicting Past-Month Alcohol Use for 1 SD

Below the Drinking Motive Score and 1 SD Above the Drinking Motive Score



Note: Estimated past-month alcohol use trajectories for students based on drinking motive and subclinical narcissistic traits. In Figures, A, B, C, and D, E, F, and G, estimated trajectories were plotted for those with low ($-1 SD$) and high ($+ SD$) levels of the moderating variable. Figures A, B, and C are dependent on subclinical grandiose traits, whereas Figures D, E, F, and G are dependent on subclinical vulnerable traits. A low drinking motive represents a student had less of a desire to drink for this reason, whereas a high drinking motive represents a student had a strong desire to drink for this reason. Across figures, all other model variables were held at their averages.

HED Frequency Interactions

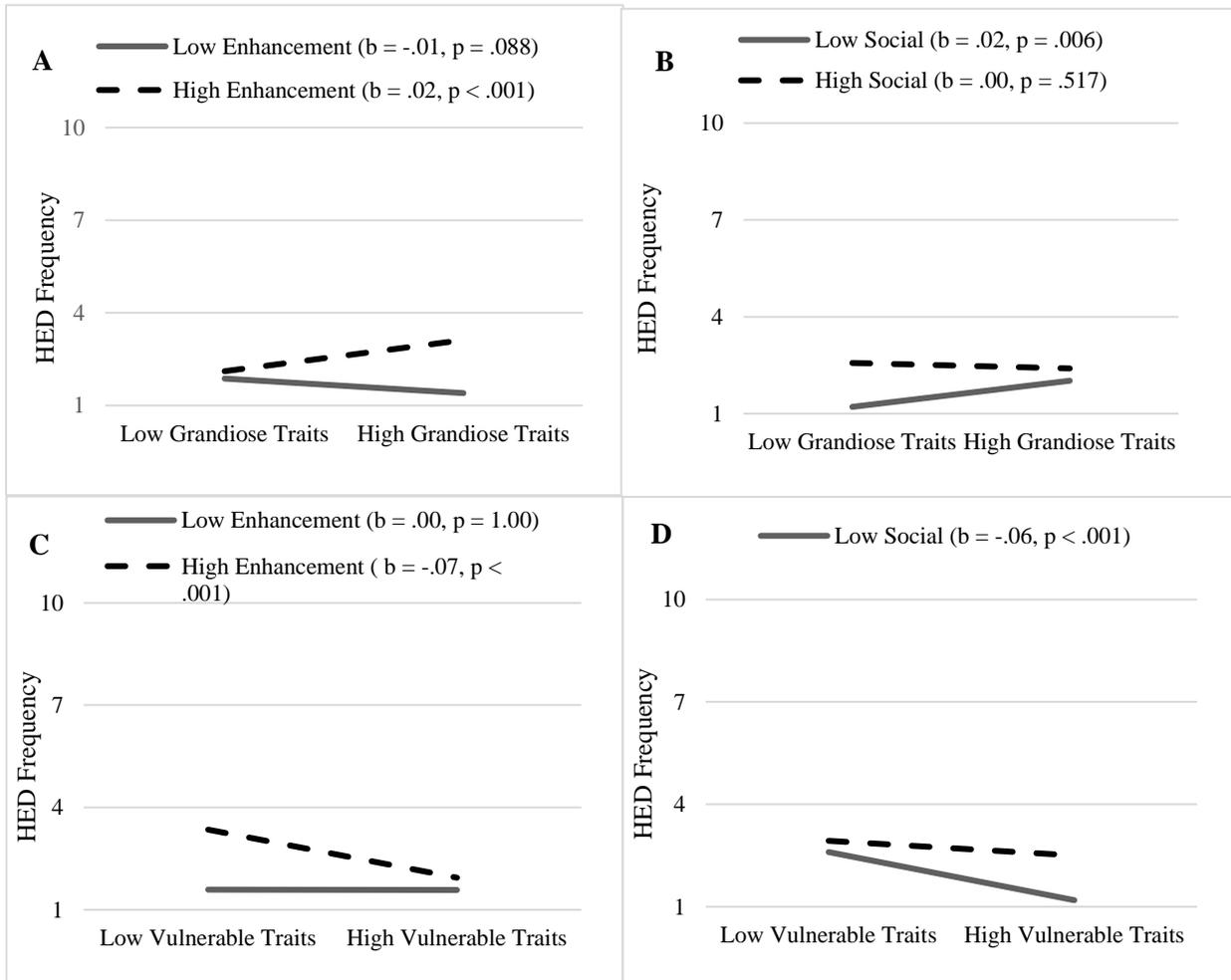
Research Question 3 addressed the moderating effects of enhancement, coping, conformity, and social drinking motives on the relations between subclinical grandiose and vulnerable narcissistic traits and HED frequency (Table 3). Results from Poisson regression analyses indicated that when holding all other variables constant, enhancement and social motives each interacted with subclinical grandiose traits in the HED frequency model. Plotting and probing these interactions with simple slope analyses indicated a positive relation between subclinical grandiose traits and HED frequency when students reported either high enhancement motives or low social motives (Figures 2A and 2B, respectively). Conversely, neither coping nor conformity motives moderated the relation between subclinical grandiose traits and HED frequency.

Furthermore, Poisson regression analyses indicated that, when holding all other variables constant, enhancement and social motives each interacted with subclinical vulnerable traits in the HED frequency model. Plotting and probing these interactions with simple slope analyses indicated a negative relation between subclinical vulnerable traits and HED frequency when

students reported either high enhancement motives or low social motives (Figures 2C and 2D, respectively). Conversely, neither coping nor conformity motives moderated the relation between subclinical vulnerable traits and HED frequency.

Figure 2

Simple Slopes of Subclinical Narcissistic Traits Predicting HED Frequency for 1 SD Below the Drinking Motive Score and 1 SD Above the Drinking Motive Score



Note: Estimated HED frequency trajectories for students based on drinking motive and subclinical narcissistic traits. In Figures, A, B, C, and D, estimated trajectories were plotted for those with low ($-1 SD$) and high ($+ SD$) levels of the moderating variable. Figures A and B are dependent on subclinical grandiose traits, whereas Figure C and D are dependent on subclinical vulnerable traits. A low drinking motive represents a student had less of a desire to drink for this

reason, whereas a high drinking motive represents a student had a strong desire to drink for this reason. Across figures, all other model variables were held at their averages.

Negative Alcohol-Related Outcomes Interactions

Research Question 4 addressed the moderating effects of enhancement, coping, conformity, and social drinking motives on the relation between subclinical grandiose and vulnerable narcissistic traits and past-month negative alcohol-related outcomes experienced (Table 4). Results from Poisson regression analyses indicated that when holding all other variables constant, the four drinking motives did not significantly interact with either subclinical grandiose traits or vulnerable grandiose traits in models predicting negative alcohol-related outcomes experienced.

CHAPTER V: DISCUSSION

This study examined the unique and moderating roles of all four drinking motives (i.e., enhancement, coping, conformity, and social) on relations between subclinical narcissistic traits (i.e., grandiose, and vulnerable) and three alcohol use outcomes (i.e., past-month alcohol use, HED frequency, and negative alcohol-related outcomes experienced). Whereas research indicates significant associations between one's degree of subclinical narcissistic traits and alcohol use, as well as significant associations between one's drinking motive and alcohol use, (Kramer et al., 2019; Kuntsche et al., 2005; Read et al., 2003; Welker et al., 2019), no known study has examined the additive influence of subclinical grandiose and vulnerable narcissistic traits and drinking motives on past-month alcohol use, HED frequency, and negative alcohol-related outcomes. Addressing this gap in the current literature strengthens collective understanding in the contributing factors associated with college student alcohol use and misuse, which may be used to inform intervention strategies better tailored to one's personality to reduce potential negative alcohol-related outcomes.

Past-Month Alcohol Use and HED Frequency

Subclinical Grandiose Traits and Drinking Motives

Consistent with initial predictions, subclinical grandiose traits positively predicted a student's past-month alcohol use and HED frequency. This finding supports previous research suggesting that the higher the degree of a student's subclinical narcissistic traits, the more likely that student will consume alcohol in both higher quantity and frequency (Kramer et al., 2019; Luhtanen & Crocker, 2005; Welker et al., 2019). Additionally, enhancement and coping motives each uniquely positively predicted both a student's past-month alcohol use and HED frequency, in line with initial hypotheses and previous literature (Fisher et al., 2020; Read et al., 2003;

Wemm et al., 2018). Furthermore, social motives were a negative predictor of both past-month alcohol use and HED frequency, aligning with the findings of Choi et al. (2016) that social motives are positively related to alcohol quantity and frequency. Contrary to initial hypotheses, however, conformity motives negatively predicted a student's past-month alcohol use. Moreover, drinking to conform was not significantly associated with HED frequency. I hypothesized a positive association between drinking to conform and past-month alcohol use since past research suggests that students who drink to conform are more likely to drink in higher frequency, thereby increasing the intensity of use, however, refrain from drinking in larger quantities (Choi et al., 2016; Fisher et al., 2020; Skalisky et al., 2019).

These findings, however, are contested. Previous research also suggests drinking to conform shares no significant relation to alcohol use intensity (Aurora & Klanecky, 2016; Kenney et al., 2013), challenging my negative association between conformity motives and past-month alcohol use, whereas complementing my nonsignificant association observed between drinking to conform and HED frequency. This relation may be accredited to the perspective a student's friends or peers have towards certain aberrant behaviors, such as HED. To elaborate, a student drinks to conform hoping not to feel left out. Thus, if a student is drinking with friends who endorse neither HED nor frequent alcohol use, the student may be less likely to engage in HED themselves, potentially lessening one's overall intensity of alcohol use. Therefore, depending on the social context of one's drinking, conformity motives may be viewed as a protective barrier to alcohol use and misuse, when compared to the other three drinking motives. It is also possible that another drinking motive may have been present and stronger when students drink to conform, thereby limiting the proportion of variance drinking to conform accounted for. Taken together, these findings extend past literature by examining all four

drinking motives, rather than individual or pairs of specific motives (Choi et al., 2016; Read et al., 2003, Tragesser et al., 2007; Tragesser et al., 2008), which represents a more complete picture of the association between motives and alcohol use.

I also explored the unique ways subclinical grandiose traits and drinking motives work together to contribute to past-month alcohol use and HED frequency. Results indicated that high degrees of enhancement motives positively moderated the relation between grandiose traits and both alcohol use outcomes, supporting my initial hypothesis. The way subclinical grandiose traits and drinking to enhance collectively contribute towards increased alcohol use may be partially explained by the perceived benefit of alcohol in pursuing or maintaining a sense of grandiosity. Students with strong subclinical grandiose traits often report feelings of high self-esteem, overconfidence, and a sense of superiority over peers (Miller et al., 2011). Recognizing that alcohol releases dopamine and endorphins to the brain, thereby increasing pleasure feelings, drinking may be viewed as a feasible strategy towards strengthening an already inflated sense of grandiosity. Furthermore, the potential influence of extraverted behaviors may be worth additional consideration, since drinking to enhance is significantly associated with extraversion, a relevant component of grandiose narcissism (Miller et al., 2016). Although outside the scope of the current study, future research may benefit from exploring the role of impulsivity, as impulsivity is positively associated with drinking to enhance (Simons et al., 2005) and can serve as a significant factor in negative outcomes experienced among grandiose narcissists (O'Reilly & Hall, 2021). Because students with high degrees of subclinical grandiose traits are more likely to engage in impulsive thrill-seeking behaviors, they may be more likely to drink to enhance. Understanding the role of impulsivity may assist mental health clinicians in tailoring behavioral

interventions that strengthen self-control to prevent impetuous actions associated with alcohol misuse, particularly from those with strong subclinical grandiose traits.

Social motives also moderated the relation between subclinical grandiose traits and both alcohol use outcomes, such that students with a high degree of subclinical grandiose traits who do not often drink for social occasions drank more alcohol in the past month and more frequently engaged in HED. Although I made no formal hypothesis on this relation, because subclinical grandiose traits are positively associated with extraversion scores among college students (Zajenkowski & Szymaniak, 2021), it was possible that strong social motives would have moderated the effect of subclinical grandiose traits on both alcohol use outcomes. Although no known research has formally studied this relation, because students with strong subclinical grandiose traits present themselves as socially competent (Miller et al., 2011), they may not feel inclined to use alcohol for social reward or situational improvement. Instead, these students may be more focused on using alcohol to enhance internal affect, which is supported by the noted relation between subclinical grandiose traits and strong enhancement motives. Future studies may benefit by attempting to individually interview students with high degrees of subclinical narcissistic traits on how they prioritize contextual factors related to their alcohol use. This procedure may allow for a more conclusive stance on the contributing role of social motives between subclinical grandiose traits and alcohol use.

Similarly, given the lack of published data, I made no formal hypothesis about the relation between subclinical grandiose traits and conformity motives. Results indicated that strong degrees of conformity motives positively moderated the effect of grandiose traits on past-month alcohol use. However, drinking to conform was not statistically significant in the relation between grandiose traits and HED frequency. This relation is peculiar because individuals with

low self-esteem are more likely to conform to social norms compared to students with inflated levels of self-esteem, a common trait of grandiose narcissism (Leary & Baumeister, 2000). However, this relation may be partially explained by narcissistic-tolerance theory, which argues that individuals are more tolerant and accepting of others who report similar degrees of subclinical narcissistic traits (Hart and Adams, 2014). Moreover, a student's degree of narcissistic traits is similar to that of their friends (Maaß et al., 2016), and subclinical grandiose traits are positively associated with alcohol use (Kramer et al., 2019). Taken together, it is possible that students with a high degree of subclinical grandiose traits may be motivated to drink in a similar fashion to friends, given that students who recognize that their friends drink are more willing to drink themselves (Litt et al., 2012). The need to conform could also stem from a desire for affiliation, given that social comradery is a strongly reported objective for drinking among college students (Labrie et al., 2007). Students with high degrees of subclinical grandiose traits are capable of superficial affiliation (Back et al., 2010, 2013) and may drink to conform to build social comradery in hopes of obtaining power among others.

Unsurprisingly, drinking to cope did not significantly moderate the effect of subclinical grandiose traits on either alcohol use outcome. Students who drink to cope are more likely to display neurotic personality traits, such as emotional instability (Simons et al., 2005; Stewart et al., 2001), which are significantly associated with vulnerable narcissism (Dickinson & Pincus, 2003). Given that grandiose and vulnerable narcissism are distinct constructs (Maxwell et al., 2011; Krizan & Herlache, 2017) students with higher degrees of subclinical grandiose traits may be less likely to drink to cope. Furthermore, students with high degrees of subclinical grandiose traits may be less likely to drink to cope since grandiose narcissism is negatively associated with guilt and shame, which are primary components of negative emotionality (Czarna et al., 2018).

Future research may benefit from further examining subclinical grandiose and vulnerable trait overlap, as well as how behavioral components of extraversion and neuroticism are displayed depending on student subclinical grandiose and vulnerable narcissistic traits.

Subclinical Vulnerable Traits and Drinking Motives

As with subclinical grandiose traits, I also explored how subclinical vulnerable traits and drinking motives work together to contribute to past-month alcohol use and HED frequency. I initially hypothesized that subclinical vulnerable traits would share no significant association with either alcohol use outcome, reflecting previous literature (Welker et al., 2019). Instead, subclinical vulnerable traits negatively predicted a student's past-month alcohol use and HED frequency, such that students reporting higher degrees of subclinical vulnerable traits were less likely to report higher alcohol use intensity and less likely to engage in HED. This finding contradicts one study which reported no statistically significant association between subclinical vulnerable traits and a student's past-month alcohol use (Welker et al., 2019). Known research on this relation is limited, with many previous studies having used self-report measures accounting only for subclinical grandiose traits, such as the NPI (Raskin & Terry, 1988) and the Narcissistic Personality Inventory-13 (Gentile et al., 2013). Future studies must continue to examine the relations between subclinical vulnerable traits and both past-month alcohol use and HED frequency for a more conclusive stance.

Furthermore, I hypothesized that coping motives would exacerbate the association between subclinical vulnerable traits and both alcohol use outcomes, with coping motives as being more salient to students. I made no formal hypotheses for the moderating roles of social and conformity drinking motives given the lack of empirical evidence I found to date. Contrary to my hypotheses, high levels of drinking to enhance, cope, and conform each uniquely

negatively moderated the effects of subclinical vulnerable traits on both alcohol use outcomes. In other words, students with high degrees of subclinical vulnerable traits who often drank to enhance, conform, or cope drank less alcohol in the past month and less often engaged in HED than students with high degrees of subclinical vulnerable traits who did not often drink to enhance, conform, or cope.

Perhaps the unique and interactive relations between subclinical vulnerable traits, drinking motives, and both alcohol use outcomes can be partially explained by the idea that students with vulnerable traits are more concerned about negative outcomes resulting from alcohol use than the student's motive to drink. For example, a student's hypersensitivity to criticism or fear of embarrassment outweighs the student's desire to drink to cope, given that a notable trait of the vulnerable narcissism is a fragile self-concept, contingent upon a student's validation from their peers (Mahadevan & Jordan, 2021). Thus, a student with higher degrees of subclinical vulnerable traits may feel less inclined to drink compared to students with lower degrees of subclinical vulnerable traits, even if they feel motivated to drink. In fact, correlations between subclinical vulnerable traits and both past-month alcohol use and HED frequency were not statistically significant, whereas subclinical grandiose traits are significantly correlated with both alcohol use outcomes. Future studies may benefit by exploring the moderating roles of factors related to self-worth on the effect of subclinical vulnerable traits and alcohol use outcomes, building upon related findings by Luhtanen and colleagues (2005).

Surprisingly, low levels of social motives negatively moderated the effects of subclinical vulnerable traits on both alcohol use outcomes. In other words, students with high degrees of subclinical vulnerable traits who do not often drink for social occasions drank less alcohol in the past month and less often engaged in HED than students with high degrees of subclinical

vulnerable traits who may drink more frequently for a social occasion. There are two considerations that may partially explain these relations. First, students who display a high degree of subclinical narcissistic vulnerability may not as frequently engage in social situations compared to academic peers, because when these students feel inadequate to others, the accompanying shame contributes to social withdrawal behaviors (Caligor et al., 2015). Thus, these students may rarely drink for a social occasion, thereby limiting the likelihood of feeling this motivation. Second, one may consider the role of neuroticism. Vulnerable narcissism is partly characterized by neuroticism (Cuijpers et al., 2010; Lahey, 2009), and shares a nearly identical correlational profile towards multiple aspects of neurotic personality, including general personality traits (Miller et al., 2018), particularly among college students. With these similarities in mind, it is important to note that students most commonly drink with friends (Borsari & Carey, 2001) and that students with higher levels of neuroticism experience increased levels of momentary happiness from social interaction with friends (Mueller et al., 2019). Taken together, it is possible that a student with a high degree of subclinical vulnerable narcissism, motivated to drink for a social occasion, may wish to be cognizant of the experience. Thus, this student may not wish to consume alcohol in a large quantity. Future research is needed to better understand how subclinical vulnerable traits relate to college student alcohol use and HED frequency.

Negative Alcohol-Related Outcomes

Subclinical Narcissistic Traits

Negative alcohol-related outcomes pertain to the behavioral, emotional, physical, and interpersonal changes that stem from a student's use (Grigsby et al., 2016). As hypothesized, subclinical grandiose traits were positively predictive of negative alcohol-related outcomes,

supporting previous research (Kramer et al., 2019). This relation makes sense since students with higher degrees of subclinical grandiose traits are more likely to engage in stronger alcohol use intensity (Hill et al., 2016), and increased alcohol use is associated with more negative alcohol-related outcomes experienced (SAMHSA, 2019). I also hypothesized subclinical vulnerable traits would be positively predictive of negative alcohol-related outcomes since this association has been observed in previous literature (Welker et al., 2019). Surprisingly, subclinical vulnerable traits were not predictive of negative alcohol-related outcomes experienced. As previously noted, this finding may be partially explained by the fear students with higher degrees of subclinical vulnerable traits experience towards criticism from peers. Given that subclinical vulnerable traits were negatively associated with a student's intensity of past-month alcohol use consumption, students with higher degrees of subclinical vulnerable traits may feel less inclined to place themselves in a position where they were subject to humiliation or embarrassment.

Drinking Motives

Additionally, enhancement motives, coping motives, and social motives were positive predictors of negative alcohol-related outcomes, partially supporting initial hypotheses. I anticipated conformity motives would also be positively associated with negative alcohol-related outcomes, given past research findings (Kenney et al., 2013; Wahesh et al., 2015). Instead, conformity motives were not significantly predictive of negative alcohol-related outcomes experienced. Because students who drink to conform are less likely to consume alcohol in higher quantity, they may also be less likely to experience negative outcomes associated with higher HED frequency, such as unintentional injury, blackouts, and aggressive behavior (CDC, 2019). This finding means that of the four drinking motives, students who drink to conform may display safer drinking behaviors, such as employing protective behavioral strategies to counter alcohol

misuse. Although previous research has examined the relation between student drinking motives and the use of protective behavioral strategies (Madson et al., 2015), these findings were from a sample consisting solely of African American students. Future research should attempt to replicate the study design with an ethnically diverse student sample so that results may be generalized across the young adult college student population.

Findings between drinking motives and negative alcohol-related outcomes indicated that of the four motives, drinking to cope had the strongest association with negative alcohol-related outcomes. Although some studies suggest that coping motives share the strongest association with negative alcohol-related outcomes among college student drinkers (Armeli et al., 2010; Bravo et al., 2018; Wahesh et al., 2015), this relation is inconsistent (Read et al., 2003). Mixed findings may be due to how some studies examine components of negative affect in tandem with drinking to cope and negative alcohol-related outcomes, because drinking to cope is associated with negative emotionality (Cooper et al., 1994). For example, these studies accounted for student reports of anxiety (Armeli et al., 2010), depressive symptoms, ruminative thinking (Bravo et al., 2018), and negative outcome expectancy (Wahesh et al., 2015) when examining the relation between drinking to cope and negative alcohol-related outcomes. Perhaps the inclusion of self-report measures examining negative emotionality influences a student's response towards drinking to cope measure items. Here, a student may be asked to reflect on negative emotions often associated with coping motives. Thus, a student may focus more heavily on moments in which they drank to cope as they complete the DMQ-R. Future studies may benefit by accounting for both a college student's positive and negative affect when examining relations between drinking to cope and alcohol outcome variables, such as negative outcome expectancy and negative alcohol-related outcomes experienced. Nonetheless, because drinking to

cope is an identified risk factor for potential alcohol dependency (Carpenter & Hasin, 1999), determining a student's drinking motive may help in identifying and reducing problematic drinking behaviors.

Interaction Effects

Although I made no formal hypotheses on the interaction effects between the subclinical narcissistic subtypes and drinking motives, it was possible that enhancement motives would be particularly relevant on the effect of subclinical grandiose traits and coping motives would be more salient on the effect of subclinical vulnerable traits towards negative alcohol-related outcomes. Given the lack of empirical data, I also made no formal hypotheses for the moderating role of conformity or social motives. Surprisingly, no drinking motive significantly moderated any relation between either subclinical narcissistic subtype and negative alcohol-related outcomes. This finding was unexpected given the observed interactions between the subclinical narcissistic subtypes and drinking motives towards both alcohol use outcomes.

These findings suggest that other factors may warrant additional consideration when examining negative alcohol-related outcomes. One consideration may be a student's contextual factors when drinking, such as location, social, and situational factors. Previous research has explored the relation between a student's drinking context and drinking motives (Finan & Lipperman-Kreda, 2020). For instance, drinking to cope is significantly associated with solitary heavy drinking, and serves as a conduit between solitary heavy drinking and alcohol problems (Corbin et al., 2020; Gonzalez et al., 2009). With these relations in mind, future research may benefit from attempting to explore common contextual factors depending on a student's drinking motive and based on aspects of one's personality. For example, examining how students with subclinical narcissistic traits who drink to cope experience negative outcomes when drinking

alone compared to drinking among peers. Another consideration may be how likely students expect negative alcohol-related outcomes to occur. Previous research shows that students with strong subclinical vulnerable traits were more likely to anticipate they will experience negative alcohol-related problems. In fact, strong subclinical vulnerable traits were positively predictive of alcohol-related problems (Welker et al., 2019). However, these relations were examined independently. Perhaps students with higher subclinical vulnerable traits, as opposed to subclinical grandiose traits, more often anticipate negative outcomes will occur and therefore, experience more negative alcohol-related outcomes. If future studies examined the moderating or mediating role of such additional factors, perhaps we can better understand the relations between subclinical narcissistic subtypes and negative alcohol-related outcomes.

Strengths of the Present Study

One strength of this study is that it is the first known attempt to individually assess subclinical narcissistic subtype traits in relation to each of the four drinking motives. In addition, this study contributed to our comprehensive understanding of young adult personality and alcohol use behaviors, as well as assisted in identifying behavioral distinctions between those who exhibit subclinical grandiose and vulnerable narcissistic traits. Through the approach of this study, I also extended past literature to better understand how drinking motives related to student alcohol use by examining all four drinking motives, rather than specific motives (Choi et al., 2016; Read et al., 2003, Tragesser et al., 2007; Tragesser et al., 2008). In addition, I included both undergraduate and graduate student participants between 18 to 24 years of age, better representing the collegiate student population than previous research (Merrill et al., 2014; Tragesser et al., 2008). I also examined the relation between subclinical narcissistic traits, drinking motives, and student alcohol use by accounting for more general student drinking

behaviors, rather than focusing specifically on alcohol use disorder symptoms as seen in previous research (Tragesser et al., 2008). Finally, this study explored broader relations between subclinical Cluster B personality disorder symptoms and collegiate alcohol use variables by examining traits of a specific disorder, a limitation observed by Tragesser and colleagues (2007; 2008).

Limitations

Although the present study has expanded on previous literature, with findings suggesting valuable implications for interventions targeting collegiate narcissistic traits and drinking behaviors, several limitations are to be considered. First, this study relied on a cross-sectional design. Therefore, causal inferences cannot be made about the relations between subclinical narcissistic subtypes, drinking motives, and alcohol use outcomes. Second, this study relied on self-report measures. Students may have responded to items with a social desirability bias, or out of ambivalence when reporting current or previously experienced negative alcohol-related outcomes. Third, due to the participation sample consisting primarily of white women, findings are unable to be generalized to other student populations. Given the composition of the sample and that mean score differences between men and women regarding subclinical narcissistic traits and alcohol use behaviors, this study allows for more accurate interpretation of subclinical narcissistic traits and drinking motive intersection among women rather than men. Fourth, this study did not inform participants how the U.S. Department of Health and Human Services defines one standard drink. Consequently, participants may have indicated their past-month alcohol use quantity with differing beliefs as to what constitutes as one standard drink. Fifth, this study did not examine the interaction between subclinical grandiose and vulnerable traits towards each of the three alcohol use outcomes. It is possible a participant's capacity for both grandiose

and vulnerable traits could potentially influence the likelihood of their alcohol use intensity and negative outcomes experienced.

Implications and Conclusions

In conclusion, there are several implications for the observed findings in this study. First, subclinical narcissistic traits and drinking motives may both be significant contributors to a student's alcohol use intensity and heavy episodic drinking frequency. Second, results support the notion that whereas subclinical grandiose and vulnerable narcissism share similar traits, such as entitled self-importance and low empathy, and that people are prone to display both subclinical grandiose and vulnerable traits (Roche et al., 2013), they are unique constructs (Maxwell et al., 2011; Krizan & Herlache, 2017) and are differentially associated with alcohol use outcomes. Additionally, this study serves as further evidence that narcissism should be examined on a spectrum, rather than as categorical criteria.

Study findings provide insight into how narcissistic personality traits and drinking motives contribute to college student alcohol use and its related outcomes. These findings may assist both therapeutic services and academic institutions in strengthening intervention strategies aimed at reducing student alcohol misuse. Such interventions may be to teach students drink refusal skills or protective behavioral strategies because current study findings indicated students who drink to enhance are more likely to experience negative alcohol-related outcomes, because students who drink to enhance are less likely to use protective behavioral strategies (Madson et al., 2015). Potential protective behavioral strategies include setting a drink limit or time limit to drink for oneself and asking a friend or peer to keep track of your alcohol use. These interventions could be tailored partially depending on one's degree of subclinical narcissistic traits. Another strategy could be to alternate between drinking alcohol and water throughout a

drinking occasion, to reduce the effects of alcohol and subsequent “hangover” symptoms. Additionally, mental health clinicians could teach brief mindfulness exercises to students who report they drink to cope, as mindfulness when focused on negative rumination may reduce the one’s risk of experiencing depressive symptoms (Parmentier et al., 2019), thereby potentially weakening the likelihood a student drinks to cope with negative emotions. Furthermore, these findings may be useful in creating student profiles to better identify those at risk of engaging in hazardous alcohol use. For example, if students were to complete an assessment on campus which included screened for narcissistic traits and drinking motives, university clinicians could better identify students with a high degree of subclinical narcissistic traits, who report often drinking to enhance or conform. Therefore, university clinicians may then be able to practice strategic interventions to combat these factors, such as self-affirmation exercises to reduce subclinical levels of narcissism. Moreover, campus-offered therapeutic services may assist college students in countering a need to conform to peers and prevalent drinking cultures by utilizing social norm corrective approaches, in which students are encouraged to explore how their values and beliefs on alcohol use align or differ from that of their friends and peers.

REFERENCES

- The Hamilton Project. (2017, April 26). *Age Distribution of Undergraduate Students, by Type of Institution*.
https://www.hamiltonproject.org/charts/age_distribution_of_undergraduate_students_by_type_of_institution.
- Alcorn, J. L., 3rd, Gowin, J. L., Green, C. E., Swann, A. C., Moeller, F. G., & Lane, S. D. (2013). Aggression, impulsivity, and psychopathic traits in combined antisocial personality disorder and substance use disorder. *The Journal of Neuropsychiatry and Clinical Neurosciences*, 25(3), 229–232.
<https://doi.org/10.1176/appi.neuropsych.12030060>
- American Psychiatric Association. (2013). Narcissistic personality disorder. *Diagnostic and statistical manual of mental disorders* (5th ed.), 669-670.
<https://doi.org/10.1176/appi.books.9780890425596>
- Armeli, S., Conner, T. S., Cullum, J., & Tennen, H. (2010). A longitudinal analysis of drinking motives moderating the negative affect-drinking association among college students. *Psychology of Addictive Behaviors*, 24(1), 38–47. <https://doi.org/10.1037/a0017530>
- Arria, A. M., Caldeira, K. M., O’Grady, K. E., Vincent, K. B., Fitzelle, D. B., Johnson, E. P., & Wish, E. D. (2008). Drug exposure opportunities and use patterns among college students: Results of a longitudinal prospective cohort study. *Substance Abuse*, 29(4), 19–38. <https://doi.org/10.1080/08897070802418451>
- Aurora, P., & Klanecky, A. K. (2016). Drinking motives mediate emotion regulation difficulties and problem drinking in college students. *American Journal of Drug and Alcohol Abuse*, 42(3), 341–350. <https://doi.org/10.3109/00952990.2015.1133633>

- Back, M. D., Schmukle, S. C., & Egloff, B. (2010). Why are narcissists so charming at first sight? Decoding the narcissism-popularity link at zero acquaintance. *Journal of Personality and Social Psychology*, 98(1), 132–145. <https://doi.org/10.1037/a0016338>
- Back, M. D., Küfner, A. C. P., Dufner, M., Gerlach, T. M., Rauthmann, J. F., & Denissen, J. J. A. (2013). Narcissistic admiration and rivalry: Disentangling the bright and dark sides of narcissism. *Journal of Personality and Social Psychology*, 105(6), 1013–1037. <https://doi.org/10.1037/a0034431>
- Baer J. S. (2002). Student factors: understanding individual variation in college drinking. *Journal of Studies on Alcohol. Supplement*, (14), 40–53. <https://doi.org/10.15288/jsas.2002.s14.40>
- Borsari, B., & Carey, K. B. (2001). Peer influences on college drinking: A review of the research. *Journal of Substance Abuse*, 13(4), 391-424.
- Bravo, A. J., Pearson, M. R., Stevens, L. E., & Henson, J. M. (2016). Depressive symptoms and alcohol-related problems among college students: A moderated-mediated model of mindfulness and drinking to cope. *Journal of Studies on Alcohol and Drugs*, 77(4), 661–666. <https://doi.org/10.15288/jsad.2016.77.661>
- Bravo, A. J., Pilatti, A., Pearson, M. R., Mezquita, L., Ibáñez, M. I., & Ortet, G. (2018). Depressive symptoms, ruminative thinking, drinking motives, and alcohol outcomes: A multiple mediation model among college students in three countries. *Addictive Behaviors*, 76, 319–327. <https://doi.org/10.1016/j.addbeh.2017.08.028>
- Caligor, E., Levy, K. N., & Yeomans, F. E. (2015). Narcissistic personality disorder: diagnostic and clinical challenges. *American Journal of Psychiatry*, 172(5), 415-422. <https://doi.org/10.1176/appi.ajp.2014.14060723>

- Carpenter, K. M., & Hasin, D. S. (1999). Drinking to cope with negative affect and DSM-IV alcohol use disorders: a test of three alternative explanations. *Journal of studies on alcohol*, 60(5), 694–704. <https://doi.org/10.15288/jsa.1999.60.694>
- Centers for Disease Control and Prevention. (2019, December 30). *Binge Drinking is a serious but preventable problem of excessive alcohol use*. Centers for Disease Control and Prevention. <https://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm>.
- Choi, J., Park, D. J., & Noh, G. Y. (2016). Exploration of the independent and joint influences of social norms and drinking motives on Korean college students' alcohol consumption. *Journal of Health Communication*, 21(6), 678-687. <https://doi.org/10.1080/10810730.2016.1153762>
- Clements, R. (1999). Prevalence of alcohol-use disorders and alcohol-related problems in a college student sample. *Journal of American College Health*, 48(3), 111-118. <https://doi.org/10.1080/07448489909595682>
- National Institute on Alcohol Abuse and Alcoholism (NIAAA). (2020, October). *College Drinking*. National Institute on Alcohol Abuse and Alcoholism. <https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/college-drinking>
- Cook, M. A., Newins, A. R., Dvorak, R. D., & Stevenson, B. L. (2020). What about this time? Within-and between-person associations between drinking motives and alcohol outcomes. *Experimental and Clinical Psychopharmacology*, 28(5), 567–575. <https://doi.org/10.1037/pha0000332>
- Cooper, M. L. (1994). Motivations for alcohol use among adolescents: Development and validation of a four-factor model. *Psychological Assessment*, 6(2), 117. <https://doi.org/10.1037/1040-3590.6.2.117>

- Cooper, M. L., Agocha, V. B., & Sheldon, M. S. (2000). A motivational perspective on risky behaviors: the role of personality and affect regulatory processes. *Journal of Personality*, 68(6), 1059–1088. <https://doi.org/10.1111/1467-6494.00126>
- Cooper, M. L., Frone, M. R., Russell, M., & Mudar, P. (1995). Drinking to regulate positive and negative emotions: a motivational model of alcohol use. *Journal of Personality and Social Psychology*, 69(5), 990–1005. <https://doi.org/10.1037//0022-3514.69.5.990>
- Corbin, W. R., Waddell, J. T., Ladensack, A., & Scott, C. (2020). I drink alone: Mechanisms of risk for alcohol problems in solitary drinkers. *Addictive Behaviors*, 102, 106147. <https://doi.org/10.1016/j.addbeh.2019.106147>
- Crawford, E., Moore, C. F., & Ahl, V. E. (2004). The roles of risk perception and borderline and antisocial personality characteristics in college alcohol use and abuse. *Journal of Applied Social Psychology*, 34(7), 1371–1394. <https://doi.org/10.1111/j.1559-1816.2004.tb02011.x>
- Cuijpers, P., Smit, F., Penninx, B. W., de Graaf, R., ten Have, M., & Beekman, A. T. (2010). Economic costs of neuroticism: a population-based study. *Archives of General Psychiatry*, 67(10), 1086–1093. <https://doi.org/10.1001/archgenpsychiatry.2010.130>
- Czarna, A., Zajenkowski, M., & Dufner, M. (2018). How does it feel to be a narcissist? Narcissism and emotions. *Handbook of trait narcissism: Key advances, research methods, and controversies* (T. Hermann, A. Brunell, & J. Foster, Eds.). New York: Springer.
- Davoren, M. P., Shiely, F., Byrne, M., & Perry, I. J. (2015). Hazardous alcohol consumption among university students in Ireland: a cross-sectional study. *BMJ Open*, 5(1), e006045. <https://doi.org/10.1136/bmjopen-2014-006045>

- Dickinson, K. A., & Pincus, A. L. (2003). Interpersonal analysis of grandiose and vulnerable narcissism. *Journal of Personality Disorders, 17*(3), 188–207.
<https://doi.org/10.1521/pedi.17.3.188.22146>
- Dingfelder, S. F. (2011, February). Reflecting on narcissism. *Monitor on Psychology, 42*(2).
<http://www.apa.org/monitor/2011/02/narcissism>
- Eksi, F. (2016). The short form of the five-factor narcissism inventory: Psychometric equivalence of the Turkish version. *Educational Sciences: Theory & Practice, 16*(4), 1081–1096. <https://doi.org/10.12738/estp.2016.4.0001>
- Finan, L. J., & Lipperman-Kreda, S., (2020). Changes in drinking contexts over the night course: Concurrent and lagged associations with adolescents' nightly alcohol use. *Alcoholism: Clinical and Experimental Research, 44*(12), 2611-2617.
<http://dx.doi.org/10.1111/acer.14486> PMID: PMC7725854
- Finan, L. J., Schulz, J., Gordon, M. S., & Ohannessian, C. M. (2015). Parental problem drinking and adolescent externalizing behaviors: The mediating role of family functioning. *Journal of Adolescence, 43*, 100–110. <https://doi.org/10.1016/j.adolescence.2015.05.001>
- Fisher, S., Hsu, W. W., Adams, Z., Arsenualt, C., & Milich, R. (2020). The effect of impulsivity and drinking motives on alcohol outcomes in college students: a 3-year longitudinal analysis. *Journal of American College Health, 0*(0), 1–10.
<https://doi.org/10.1080/07448481.2020.1817033>
- Gentile, B., Miller, J. D., Hoffman, B. J., Reidy, D. E., Zeichner, A., & Campbell, W. K. (2013). A test of two brief measures of grandiose narcissism: the narcissistic personality inventory-13 and the narcissistic personality inventory-16. *Psychological Assessment, 25*(4), 1120–1136. <https://doi.org/10.1037/a0033192>

- Gonzalez, V. M., Collins, R. L., & Bradizza, C. M. (2009). Solitary and social heavy drinking, suicidal ideation, and drinking motives in underage college drinkers. *Addictive Behaviors, 34*(12), 993–999. <https://doi.org/10.1016/j.addbeh.2009.06.001>
- Gmel, G., & Rehm, J. (2003). Harmful alcohol use. *Alcohol Research & Health: The Journal of the National Institute on Alcohol Abuse and Alcoholism, 27*(1), 52–62. <https://pubs.niaaa.nih.gov/publications/arh27-1/52-62.htm>.
- Grigsby, T. J., Forster, M., Unger, J. B., & Sussman, S. (2016). Predictors of alcohol-related negative consequences in adolescents: A systematic review of the literature and implications for future research. *Journal of Adolescence, 48*, 18–35. <https://doi.org/10.1016/j.adolescence.2016.01.006>
- Hart, W., & Adams, J. M. (2014). Are narcissists more accepting of others' narcissistic traits? *Personality and Individual Differences, 64*, 163–167. <https://doi.org/10.1016/j.paid.2014.02.038>
- Herchenroeder, L., & Bravo, A. J. (2020). College alcohol beliefs and negative alcohol-related consequences: A moderated mediation model of enhancement drinking motives and restricted eating. *Addictive Behaviors, 110*(April), 106541. <https://doi.org/10.1016/j.addbeh.2020.106541>
- Hill E. M. (2016). The role of narcissism in health-risk and health-protective behaviors. *Journal of Health Psychology, 21*(9), 2021–2032. <https://doi.org/10.1177/1359105315569858>
- Holloway, K., & Bennett, T. (2019). The association between drinking motives and alcohol-related harms among university students in Wales: a survey across seven universities. *Journal of Substance Use, 24*(4), 407–413. <https://doi.org/10.1080/14659891.2019.1584254>

- Howell, A. N., Buckner, J. D., & Weeks, J. W. (2016). Fear of positive evaluation and alcohol use problems among college students: the unique impact of drinking motives. *Anxiety, Stress and Coping, 29*(3), 274–286. <https://doi.org/10.1080/10615806.2015.1048509>
- James, L. M., & Taylor, J. (2007). Impulsivity and negative emotionality associated with substance use problems and Cluster B personality in college students. *Addictive Behaviors, 32*(4), 714–727. <https://doi.org/10.1016/j.addbeh.2006.06.012>
- Kahler, C. W., Strong, D. R., & Read, J. P. (2006). Toward efficient and comprehensive measurement of the alcohol problems continuum in college students: the brief young adult alcohol consequences questionnaire. *Alcoholism, Clinical and Experimental Research, 29*(7), 1180–1189. <https://doi.org/10.1097/01.alc.0000171940.95813.a5>
- Kenney, S. R., Lac, A., LaBrie, J. W., Hummer, J. F., & Pham, A. (2013). Mental health, sleep quality, drinking motives, and alcohol-related consequences: a path-analytic model. *Journal of Studies on Alcohol and Drugs, 74*(6), 841-851. <https://doi.org/10.15288/jsad.2013.74.841>
- Kessler R. C. (2004). The epidemiology of dual diagnosis. *Biological Psychiatry, 56*(10), 730–737. <https://doi.org/10.1016/j.biopsych.2004.06.034>
- Khan, A. J., Pedrelli, P., Shapero, B. G., Fisher, L., Nyer, M., Farabaugh, A. I., & MacPherson, L. (2018). The association between distress tolerance and alcohol related problems: The pathway of drinking to cope. *Substance Use and Misuse, 53*(13), 2199–2209. <https://doi.org/10.1080/10826084.2018.1464027>
- Kilwein, T. M., & Looby, A. (2018). Predicting risky sexual behaviors among college student drinkers as a function of event-level drinking motives and alcohol use. *Addictive Behaviors, 76*, 100–105. doi:10.1016/j.addbeh.2017.07.032

- Koepernik, T., Jauk, E., & Kanske, P. (2021). Lay theories of grandiose and vulnerable narcissism. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues*. Advance online publication. <https://doi.org/10.1007/s12144-020-01296-w>
- Kramer, M. P., Wilborn, D. D., Spencer, C. C., Stevenson, B. L., & Dvorak, R. D. (2019). Protective behavioral strategies moderate the association between narcissistic traits and alcohol pathology in college student drinkers. *In Substance Use and Misuse* (Vol. 54, Issue 5, pp. 863–867). Taylor and Francis Ltd.
<https://doi.org/10.1080/10826084.2018.1547909>
- Krizan, Z., & Herlache, A. D. (2018). The narcissism spectrum model: A synthetic view of Narcissistic Personality. *Personality and Social Psychology Review*, 22(1), 3–31.
<https://doi.org/10.1177/1088868316685018>
- Kuntsche, E., Knibbe, R., Gmel, G., & Engels, R. (2005). Why do young people drink? A review of drinking motives. *Clinical Psychology Review*, 25(7), 841–861.
<https://doi.org/10.1016/j.cpr.2005.06.002>
- Kuntsche, E., Gabhainn, S. N., Roberts, C., Windlin, B., Vieno, A., Bendtsen, P., & Dankulincová, Z. (2014). Drinking motives and links to alcohol use in 13 European countries. *Journal of Studies on Alcohol and Drugs*, 75(3), 428–437.
doi:10.15288/jsad.2014.75.428
- LaBrie, J. W., Hummer, J. F., & Pedersen, E. R. (2007). Reasons for drinking in the college student context: The differential role and risk of the social motivator. *Journal of Studies on Alcohol and Drugs*, 68(3), 393–398. <https://doi.org/10.15288/jsad.2007.68.393>

- Lahey, B. B. (2009). Public health significance of neuroticism. *American Psychologist*, *64*, 241–256.
- Lenzenweger, M. F., Lane, M. C., Loranger, A. W., & Kessler, R. C. (2007). DSM-IV personality disorders in the National Comorbidity Survey Replication. *Biological Psychiatry*, *62*(6), 553–564. <https://doi.org/10.1016/j.biopsych.2006.09.019>
- Linden-Carmichael, A. N., Vasilenko, S. A., Lanza, S. T., & Maggs, J. L. (2017). High-intensity drinking versus heavy episodic drinking: Prevalence rates and relative odds of alcohol use disorder across adulthood. *Alcoholism, Clinical and Experimental Research*, *41*(10), 1754–1759. <https://doi.org/10.1111/acer.13475>
- Litt, D. M., Stock, M. L., & Lewis, M. A. (2012). Drinking to fit in: Examining the need to belong as a moderator of perceptions of best friends' alcohol use and related risk cognitions among college students. *Basic and Applied Social Psychology*, *34*(4), 313–321. <https://doi.org/10.1080/01973533.2012.693357>
- Luhtanen, R. K., & Crocker, J. (2005). Alcohol use in college students: Effects of level of self-esteem, narcissism, and contingencies of self-worth. *Psychology of Addictive Behaviors*, *19*(1), 99–103. <https://doi.org/10.1037/0893-164X.19.1.99>
- Maaß, U., Lämmle, L., Bensch, D., & Ziegler, M. (2016). Narcissists of a feather flock together: Narcissism and the similarity of friends. *Personality and Social Psychology Bulletin*, *42*(3), 366–384. <https://doi.org/10.1177/0146167216629114>
- MacLean, M. G., & Lecci, L. (2000). A comparison of models of drinking motives in a university sample. *Psychology of Addictive Behaviors*, *14*(1), 83–87. <https://doi.org/10.1037/0893-164X.14.1.83>

- Madson, M. B., Villarosa, M. C., Moorer, K. D., & Zeigler-Hill, V. (2015). Drinking motives and alcohol use behaviors among African American college students: The mediating role of protective behavioral strategies. *Journal of Ethnicity in Substance Abuse, 14*(2), 133–150. <https://doi.org/10.1080/15332640.2014.973627>
- Mahadevan, N., & Jordan, C. (2021). Desperately seeking status: How desires for, and perceived attainment of, status and inclusion relate to grandiose and vulnerable narcissism. *Personality and Social Psychology Bulletin*. <https://doi.org/10.1177/01461672211021189>
- Martens, M. P., Rocha, T. L., Martin, J. L., & Serrao, H. F. (2008). Drinking motives and college students: Further examination of a four-factor model. *Journal of Counseling Psychology, 55*(2), 289–295. <https://doi.org/10.1037/0022-0167.55.2.289>
- Maxwell, K., Donnellan, M. B., Hopwood, C. J., & Ackerman, R. A. (2011). The two faces of Narcissus? An empirical comparison of the Narcissistic Personality Inventory and the Pathological Narcissism Inventory. *Personality and Individual Differences, 50*(5), 577–582.
- Merrill, J. E., Wardell, J. D., & Read, J. P. (2014). Drinking motives in the prospective prediction of unique alcohol-related consequences in college students. *Journal of Studies on Alcohol and Drugs, 75*(1), 93–102. <https://doi.org/10.15288/jsad.2014.75.93>
- Miller, J. D., Hoffman, B. J., Gaughan, E. T., Gentile, B., Maples, J., & Keith Campbell, W. (2011). Grandiose and vulnerable narcissism: a nomological network analysis. *Journal of Personality, 79*(5), 1013–1042. <https://doi.org/10.1111/j.1467-6494.2010.00711.x>
- Miller, J. D., Lynam, D. R., McCain, J. L., Few, L. R., Crego, C., Widiger, T. A., & Campbell, W. K. (2016). Thinking structurally about narcissism: An examination of the Five-Factor Narcissism Inventory and its components. *Journal of Personality Disorders, 30*, 1–18.

- Miller, J. D., Lynam, D. R., Vize, C., Crowe, M., Sleep, C., Maples-Keller, J. L., Few, L. R., & Campbell, W. K. (2018). Vulnerable narcissism is (mostly) a disorder of neuroticism. *Journal of Personality, 86*(2), 186–199. <https://doi.org/10.1111/jopy.12303>
- Mueller, S., Ram, N., Conroy, D. E., Pincus, A. L., Gerstorf, D., & Wagner, J. (2019). Happy like a fish in water? The role of personality–situation fit for momentary happiness in social interactions across the adult lifespan. *European Journal of Personality, 33*(3), 298–316. <https://doi.org/10.1002/per.2198>
- Murphy, J. G., McDevitt-Murphy, M. E., & Barnett, N. P. (2005). Drink and be merry? Gender, life satisfaction, and alcohol consumption among college students. *Psychology of Addictive Behaviors, 19*(2), 184–191. <https://doi.org/10.1037/0893-164X.19.2.184>
- Nehlin, C., & Öster, C. (2019). Measuring drinking motives in undergraduates: An exploration of the Drinking Motives Questionnaire-Revised in Swedish students. *Substance Abuse: Treatment, Prevention, and Policy, 14*(1), 1–7. <https://doi.org/10.1186/s13011-019-0239-9>
- O'Hara, R. E., Armeli, S., & Tennen, H. (2014). Drinking-to-cope motivation and negative mood-drinking contingencies in a daily diary study of college students. *Journal of Studies on Alcohol and Drugs, 75*(4), 606–614. <https://doi.org/10.15288/jsad.2014.75.606>
- O'Malley, P. M., & Johnston, L. D. (2002). Epidemiology of alcohol and other drug use among American college students. *Journal of Studies on Alcohol. Supplement, 14*, 23–39. <https://doi.org/10.15288/jsas.2002.s14.23>
- O'Reilly, C. A., & Hall, N. (2021). Grandiose narcissists and decision making: Impulsive, overconfident, and skeptical of experts-but seldom in doubt. *Personality and Individual Differences, 168*, 110280. <https://doi.org/10.1016/j.paid.2020.110280>

- Parmentier, F. B. R., García-Toro, M., García-Campayo, J., Yañez, A. M., Andrés, P., & Gili, M. (2019). Mindfulness and symptoms of depression and anxiety in the general population: The mediating roles of worry, rumination, reappraisal and suppression. *Frontiers in Psychology, 10*, 1–10. <https://doi.org/10.3389/fpsyg.2019.00506>
- Paris J. (2013). Personality disorders begin in adolescence. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 22*(3), 195–196. <https://doi.org/10.1007/s00787-013-0389-7>
- Pedrelli, P., Borsari, B., Lipson, S. K., Heinze, J. E., & Eisenberg, D. (2016). Gender differences in the relationships among major depressive disorder, heavy alcohol use, and mental health treatment engagement among college students. *Journal of Studies on Alcohol and Drugs, 77*(4), 620–628. <https://doi.org/10.15288/jsad.2016.77.620>
- Pernanen K. (2001) What is meant by ‘alcohol-related’ consequences? *Mapping the social consequences of alcohol consumption* (Klingemann H., Gmel G. (Eds.). Springer, Dordrecht. https://doi.org/10.1007/978-94-015-9725-8_3
- Pincus, A. L., & Roche, M. J. (2011). Narcissistic grandiosity and narcissistic vulnerability. *The handbook of narcissism and narcissistic personality disorder: Theoretical approaches, empirical findings, and treatments* (pp. 31–40) (W. K. Campbell & J. D. Miller, Eds.). John Wiley & Sons, Inc.
- Presley, C. A., Meilman, P. W., & Leichliter, J. S. (2002). College factors that influence drinking. *Journal of Studies on Alcohol, 63*, 82–90. <https://doi.org/10.15288/jsas.2002.s14.82>

- Raskin, R., & Hall, C. S. (1981). The Narcissistic Personality Inventory: alternative form reliability and further evidence of construct validity. *Journal of Personality Assessment*, 45(2), 159–162. https://doi.org/10.1207/s15327752jpa4502_10
- Raskin, R., & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity. *Journal of Personality and Social Psychology*, 54(5), 890–902. <https://doi.org/10.1037/0022-3514.54.5.890>
- Raskin, R. N., & Hall, C. S. (1979). A narcissistic personality inventory. *Psychological Reports*, 45(2), 590. <https://doi.org/10.2466/pr0.1979.45.2.590>
- Read, J. P., Wood, M. D., Kahler, C. W., Maddock, J. E., & Palfai, T. P. (2003). Examining the role of drinking motives in college student alcohol use and problems. *Psychology of Addictive Behaviors*, 17(1), 13–23. <https://doi.org/10.1037/0893-164X.17.1.13>
- Reid, M. C., Fiellin, D. A., & O'Connor, P. G. (1999). Hazardous and harmful alcohol consumption in primary care. *Archives of Internal Medicine*, 159(15), 1681–1689. <https://doi.org/10.1001/archinte.159.15.1681>
- Ronningstam, E. F. (2005). *Identifying and understanding the narcissistic personality*. Oxford University Press.
- Roos, C. R., Pearson, M. R., & Brown, D. B. (2015). Drinking motives mediate the negative associations between mindfulness facets and alcohol outcomes among college students. *Psychology of Addictive Behaviors: Journal of the Society of Psychologists in Addictive Behaviors*, 29(1), 176–183. <https://doi.org/10.1037/a0038529>
- Roche, M. J., Pincus, A. L., Lukowitsky, M. R., Ménard, K. S., & Conroy, D. E. (2013). An integrative approach to the assessment of narcissism. *Journal of Personality Assessment*, 95, 237-248.

- Substance Abuse and Mental Health Services Administration (SAMHSA). (2019). National Survey on Drug Use and Health. *Table 6.23B – Alcohol Use Disorder in Past Year among Persons Aged 18 to 22, by College Enrollment Status and Demographic Characteristics: Percentages, 2018 and 2019.*
<https://www.samhsa.gov/data/sites/default/files/reports/rpt29394/NSDUHDetailedTabs2019/NSDUHDetTabsSect6pe2019.htm#tab6-23b>
- Scholly, K., Katz, A. R., & Kehl, L. (2014). Examining factors associated with heavy episodic drinking among college undergraduates. *Health Psychology Research, 2*(2).
<https://doi.org/10.4081/hpr.2014.1457>
- Sherman, E. D., Miller, J. D., Few, L. R., Campbell, W. K., Widiger, T. A., Crego, C., & Lynam, D. R. (2015). Development of a short form of the Five-Factor Narcissism Inventory: The FFNI-SF. *Psychological assessment, 27*(3), 1110–1116.
<https://doi.org/10.1037/pas0000100>
- Simons, J. S., Gaher, R. M., Oliver, M. N., Bush, J. A., & Palmer, M. A. (2005). An experience sampling study of associations between affect and alcohol use and problems among college students. *Journal of Studies on Alcohol, 66*(4), 459-469.
- Skalisky, J., Wielgus, M. D., Aldrich, J. T., & Mezulis, A. H. (2019). Motives for and impairment associated with alcohol and marijuana use among college students. *Addictive Behaviors, 88*, 137–143. <https://doi.org/10.1016/j.addbeh.2018.08.028>
- Skidmore, J. R., Murphy, J. G., Martens, M. A., & Dennhardt, A. A. (2012). Alcohol-related consequences in African American and European American college students. *Journal of Ethnicity in Substance Abuse, 11*, 174–191. doi:10.1080= 15332640.2012.675248

- Stinson, F. S., Dawson, D. A., Goldstein, R. B., Chou, S. P., Huang, B., Smith, S. M., Ruan, W. J., Pulay, A. J., Saha, T. D., Pickering, R. P., & Grant, B. F. (2008). Prevalence, correlates, disability, and comorbidity of DSM-IV narcissistic personality disorder: Results from the wave 2 national epidemiologic survey on alcohol and related conditions. *Journal of Clinical Psychiatry, 69*(7), 1033–1045. <https://doi.org/10.4088/JCP.v69n0701>
- Stewart, S. H., Loughlin, H. L., & Rhyno, E. (2001). Internal drinking motives mediate personality domain—drinking relations in young adults. *Personality and Individual Differences, 30*(2), 271–286. [https://doi.org/10.1016/S0191-8869\(00\)00044-1](https://doi.org/10.1016/S0191-8869(00)00044-1)
- Taylor J. (2005). Substance use disorders and Cluster B personality disorders: physiological, cognitive, and environmental correlates in a college sample. *The American Journal of Drug and Alcohol Abuse, 31*(3), 515–535. <https://doi.org/10.1081/ada-200068107>
- Tragesser, S. L., Sher, K. J., Trull, T. J., & Park, A. (2007). Personality disorder symptoms, drinking motives, and alcohol use and consequences: Cross-sectional and prospective mediation. *Experimental and Clinical Psychopharmacology, 15*(3), 282–292. <https://doi.org/10.1037/1064-1297.15.3.282>
- Tragesser, S. L., Trull, T. J., Sher, K. J., & Park, A. (2008). Drinking motives as mediators in the relation between personality disorder symptoms and alcohol use disorder. *Journal of Personality Disorders, 22*(5), 525–537. <https://doi.org/10.1521/pedi.2008.22.5.525>
- Trull, T. J., Waudby, C. J., & Sher, K. J. (2004). Alcohol, tobacco, and drug use disorders and personality disorder symptoms. *Experimental and Clinical Psychopharmacology, 12*(1), 65–75. <https://doi.org/10.1037/1064-1297.12.1.65>
- Twenge, J. M., Konrath, S., Foster, J. D., Campbell, W. K., & Bushman, B. J. (2008). Egos inflating over time: A cross-temporal meta-analysis of the narcissistic personality

- inventory. *Journal of Personality*, 76(4), 875–902. <https://doi.org/10.1111/j.1467-6494.2008.00507.x>
- U.S. Department of Health and Human Services. (1999, December). *Are Women More Vulnerable to Alcohol's Effects? -Alcohol Alert No. 46*. National Institute on Alcohol Abuse and Alcoholism. <https://pubs.niaaa.nih.gov/publications/aa46.htm>.
- U.S. Department of Health and Human Services. (2003). *Recommended alcohol questions*. National Institute on Alcohol Abuse and Alcoholism. <https://www.niaaa.nih.gov/research/guidelines-and-resources/recommended-alcohol-questions>.
- Vazire, S., & Funder, D. C. (2006). Impulsivity and the self-defeating behavior of narcissists. *Personality and Social Psychology Review*, 10(2), 154–165. https://doi.org/10.1207/s15327957pspr1002_4
- Waddell, J. T., Corbin, W. R., & Marohnic, S. D. (2021). Putting things in context: Longitudinal relations between drinking contexts, drinking motives, and negative alcohol consequences. *Psychology of Addictive Behaviors*, 35(2), 148–159. <https://doi.org/10.1037/adb0000653>
- Wagoner, K. G., Blocker, J., McCoy, T. P., Sutfin, E. L., Champion, H., & Wolfson, M. (2012). Free alcohol use and consequences: gender differences among undergraduates. *American Journal of Health Behavior*, 36(4), 446–458. <https://doi.org/10.5993/AJHB.36.4.2>
- Wahesh, E., Lewis, T. F., Wyrick, D. L., & Ackerman, T. A. (2015). Perceived norms, outcome expectancies. *Journal of Addictions and Offender Counseling*, 36(2), 81–100. <https://doi.org/10.1002/jaoc.12005>

- Walitzer, K. S., & Connors, G. J. (1999). Treating problem drinking. *Alcohol research & health: The Journal of the National Institute on Alcohol Abuse and Alcoholism*, 23(2), 138–143.
- Welker, Logan E. Simons, Raluca M. Simons, J. S. (2019). Grandiose and vulnerable narcissism: Associations with alcohol use, alcohol problems and problem recognition. *Journal of American College Health*, 67(3), 226–234.
<https://doi.org/10.1080/07448481.2018.1470092>
- Wemm, S. E., Ernestus, S. M., Glanton Holzhauser, C., Vaysman, R., Wulfert, E., & Israel, A. C. (2018). Internalizing risk factors for college students' alcohol use: A combined person- and variable-centered approach. *Substance Use and Misuse*, 53(4), 629–640.
<https://doi.org/10.1080/10826084.2017.1355385>
- White, A., & Hingson, R. (2013). The burden of alcohol use: excessive alcohol consumption and related consequences among college students. *Alcohol Research: Current Reviews*, 35(2), 201–218.
- Zajenkowski, M., & Szymaniak, K. (2021). Narcissism between facets and domains. The relationships between two types of narcissism and aspects of the Big Five. *Current Psychology*, 40(5), 2112–2121. <https://doi.org/10.1007/s12144-019-0147-1>

APPENDIX A: DEMOGRAPHIC QUESTIONNAIRE

How old are you today?

- 18
- 19
- 20
- 21
- 22
- 23
- 24

What year in college are you currently in?

- Freshman
- Sophomore
- Junior
- Senior
- Graduate

How would you describe yourself? Mark one answer.

- Woman
- Man
- Trans Female/Trans Woman
- Trans Male/ Trans Man
- Genderqueer/Gender Non-conforming
- Different Identity
- Self-Identity [TEXT BOX]
- I prefer not to answer

What is your sex?

- Male
- Female
- Intersex

Are you Hispanic or Latino?

- Yes
- No

Which of the following racial/ethnic groups best describes you? Select all that apply.

- American Indian or Alaska Native
- Asian (includes Indian, Pakistani, and Bangladeshi)
- Black or African American
- Filipino
- Native Hawaiian or Other Pacific Islander
- White
- Other (please specify) [TEXT BOX]

Are you in a sorority or fraternity?

Yes

No

Which best describes your current living arrangement?

Campus housing

Off-campus housing

Sorority or fraternity house

At parents'/caregivers' home

Other (please specify) [TEXT BOX]

APPENDIX B: UNIVERSITY RECRUITMENT EMAIL TARGETING YOUNG ADULTS

Greetings.

You are invited to participate in a research study conducted by Jake Solka, under the direction of Dr. Laura Finan. The study examines personality traits, alcohol cognitions, alcohol use behavior and related outcomes. If you choose to participate, you will be asked to complete an online survey. The survey will take approximately 20 minutes to complete.

Your participation in this study is voluntary. You may choose not to participate or withdraw from the study at any time without penalty.

Participants who complete the online survey will be eligible to enter a raffle to receive 1 of 4 **\$25 Amazon gift cards**.

Participants must be **18-24 years of age** to participate in this study. If you would like to participate, please follow the link:

https://illinoisstate.az1.qualtrics.com/jfe/form/SV_erCh1IyxWuK98BE

Thank you in advance for your time.

Sincerely,

Jake Solka

APPENDIX C: IRB APPROVAL

Date: 3-15-2022

IRB #: IRB-2021-273

Title: Personality, Motives, and Alcohol Use

Creation Date: 7-8-2021

End Date:

Status: **Approved**

Principal Investigator: Laura Finan

Review Board: Illinois State University IRB

Sponsor:

Study History

Submission Type	Initial	Review Type	Exempt	Decision	Exempt
-----------------	---------	-------------	--------	----------	---------------

Submission Type	Modification	Review Type	Exempt	Decision	Exempt
-----------------	--------------	-------------	--------	----------	---------------
