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Maladaptive Social Media Use Motives, Emotional Well-Being, and Drinking Behaviors Among College Students

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MALADAPTIVE SOCIAL MEDIA USE MOTIVES, EMOTIONAL WELL-BEING, AND

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by

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ABSTRACT

MALADAPTIVE SOCIAL MEDIA USE MOTIVES, EMOTIONAL WELL-BEING, AND DRINKING BEHAVIORS AMONG COLLEGE STUDENTS

Rachel Ayala Guzman
Old Dominion University, 2024
Director: Dr. Abby L. Braitman

Young adult college students are one of the greatest at-risk populations for problematic alcohol-related behaviors (e.g., excessive use). Experiencing greater emotional distress (i.e., depression, anxiety, and stress) has been linked to problematic drinking, and rates of college students struggling with their mental health is higher than other populations. Social media has proliferated in recent years, potentially increasing the risk of experiencing negative emotional effects for avid users like college students. Literature is mixed regarding social media's impact on emotional well-being and scant studies have investigated how *motives* of social media use (i.e., *why* people are using social media) may be related to drinking behaviors via emotional distress. Additionally, findings are inconsistent examining how internal drinking motives (i.e., drinking to cope or enhance) may impact the relationship between emotional distress and drinking behaviors. Therefore, the current study examined how maladaptive social media use motives (SMUM) relate to drinking behaviors via consequences of social media use and emotional distress, respectively (Aim 1), and identified if internal drinking motives moderate the relationship between emotional distress and drinking behaviors (Aim 2) among college students (*N*=369; 82% female; 53% White). There was partial support for Aim 1 as avoidance SMUM was positively related to negative emotional consequences, which was then related to greater emotional distress. However, emotional distress was only significantly linked to greater alcohol-

related consequences and not consumption. Although drinking to cope and drinking to enhance were independently associated with greater alcohol-related consequences and consumption, neither drinking motive moderated the association between emotional distress and alcohol outcomes, contrary to hypotheses of Aim 2. Implications suggest SMUM may be a potential explanatory factor for why users (e.g., college students) are afflicted emotionally by their social media use and could be considered when addressing problematic health behaviors related to emotional distress such as alcohol use.

This thesis is dedicated to the most supportive husband and parents in the world who helped me be where I am today.

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CHAPTER I

INTRODUCTION

Emerging adulthood includes an influx of life changes during the transition into

adulthood (Arnett, 2014), which can instigate a variety of behavioral changes affecting overall

health and well-being. In the U.S., young adulthood is the age group with the highest rates of

alcohol use (Substance Abuse and Mental Health Services Administration; SAMHSA, 2021;

White & Hingson, 2013), with college students in particular displaying alarming levels of

alcohol-related risk behaviors, such as binge drinking (consuming 5 or more drinks for males and

4 or more drinks for females in about 2 hours; Patrick et al., 2020). A recent national survey

revealed over half of college students ages 18-22 reported having drank alcohol in the past

month with one-third having engaged in binge-drinking within that timeframe (SAMHSA,

2019). College students also report numerous consequences related to their alcohol use,

including experiencing physical consequences (e.g., hangover; Patrick et al., 2020), receiving

unintentional injuries, and getting into a fatal motor vehicle accident (Hingson et al., 2017).

Further, there are studies indicating that college students exhibiting these alcohol-related

behaviors are at greater risk to experiencing alcohol problems later in life, especially during

times of increased stress (Kenney et al., 2018; Russell et al., 2017). Therefore, it is critical to

understanding the motives of why college students are using alcohol to identify which groups of

college students may be at greater risk of undergoing negative alcohol-related consequences of

which could potentially lead to impaired health and well-being in later adulthood. Recognizing

typical behavioral practices' (e.g., social media use) relation to emotional well-being could be

central to understanding why some college students may rely on alcohol to regulate their mood.

This is especially pertinent in college students, where 91% of students are considered emerging adults (Hanson, 2022), a population more likely to struggle with mental health related issues (Kim et al., 2021; Lipson et al., 2022; Martinez & Nguyen, 2020; Sheldon et al., 2021) and emotional regulation strategies (Aurora & Klanecky, 2016; Schirda et al., 2016).

College students are also avid users of social media (e.g., Instagram, Snapchat, YouTube; Boyle et al., 2017; Sponcil & Gitimu, 2013). In two studies of college students that did not specifically recruit social media users, one found 100% of students in the sample used social media (Sponcil & Gitimu, 2013), and another confirmed 94% of students had active accounts on all three of the top sites at the time (Facebook, Instagram, Snapchat; Boyle et al., 2017). In response to an increased concern of how social media may be affecting the lives of frequent users like college students, there has been an influx of research in recent years investigating the potential negative effects of social media on well-being, with psychological or emotional well-being as the most commonly examined outcomes (see Kross et al., 2021 for review; see Valkenburg et al., 2021 for review). There have been mixed findings in the social media literature regarding whether social media use (SMU) affects well-being (see Karim et al., 2020, and Keles et al., 2019 for review), and it has been suggested these discrepancies are largely due to how SMU is being assessed. Specifically, a recent study examined multiple commonly-used forms of self-reported frequency of SMU (e.g., time spent each day, number of platforms, number of followers or followees, etc.), finding not only were they not strongly correlated with each other, but some indicators had positive relationships with mental health (e.g., number of platforms, shared friends online and offline) whereas others had negative relationships (e.g., time spent, number of followers; Petropoulos Petalas et al., 2021). A comprehensive review of 94 studies that examined social media use and well-being concluded that rather than focusing on

these mixed findings for SMU frequency indicators or viewing SMU as an addictive behavior, researchers should instead focus on how individuals expect to feel when using social media and why (Griffioen et al., 2020). In addition, mixed findings in the literature may be affected by the ever-changing trends of what social media platforms are being used by most college students (Boyle et al., 2017). For instance, Facebook and its relation to well-being is the most frequent focus of studies examining college students in the literature (see Stoycheff et al., 2017 for review), but recent research suggests Facebook is the least likely destination for college students to make posts (Auxier & Anderson, 2021; Boyle et al., 2017; Strowger et al., 2023). Additionally, Facebook has been found to be more commonly used among older adults (Auxier & Anderson, 2021). Literature has yielded mixed findings on how time spent on social media (Coyne et al., 2020; Huang et al., 2017; Schemer et al., 2021) or how problematic usage (typically defined as an addiction; see Ryan et al., 2014 for a review) is associated to well-being. Nonetheless, it cannot be ignored that social media remains as a large part of college students' daily lives (Sponcil & Gitimu, 2013), and that social media use has repeatedly been found to be related to well-being in emerging adults (Haddad et al., 2021; Shannon et al., 2022; Tibber et al., 2020). This is particularly important to examine, as reports of college students experiencing mental health difficulties has increased substantially in recent years (Duffy et al., 2019; Kim et al., 2021; Martinez & Nguyen, 2020; Sheldon et al., 2021). For instance, undergraduate students who were severely depressed (9.2% to 21.1%), who experienced moderate to severe anxiety (17.9% to 34.4%), who engaged in intentional self-injury (8.5% to 17.3%), and who reported making a suicide plan (2.6% to 6.6%) or attempting suicide (0.7% to 1.8%) doubled or nearly doubled between the years 2012 and 2017–2018 (Duffy et al., 2019). Therefore, given the mixed findings regarding social media usage, there is a need to move forward in investigating how

different aspects of social media beyond frequency (i.e., motives of SMU; Valkenburg, 2021; Kardefelt-Winther, 2014; Yang et al., 2021) can be a determinant of emotional well-being and ultimately impact risky health behaviors also commonly seen among emerging adult college students, such as alcohol use.

Alcohol-related Behaviors and Well-being

Alcohol use behaviors have been found to be associated with aspects of well-being, such as emotional well-being (e.g., depression, anxiety, stress), that has been documented cross-sectionally among college students (Bowman, 2010; Kenney et al., 2018; Sebena et al., 2012; Valerio et al., 2016) and longitudinally among adults (Holahan et al., 2001) showing emotional distress is associated with later drinking. Therefore, research suggests identifying *why* or the motives of people drinking can provide a clearer understanding to how certain drinking behaviors pertaining to emotional state are more likely to lead to disadvantageous alcohol-related outcomes (Kenney et al., 2014, 2013).

Drinking Motives in College Students

There are four generally accepted and well-researched drinking motives that can be considered either external or internal motives (Cooper, 1994; Cooper et al., 1995; Cox & Klinger 1988). Social (e.g., drinking for social purposes) and conformity (e.g., drinking to fit in) are external motives whereas enhancement and coping are considered internal motives (Cooper et al., 1995). Enhancement and coping as internal motives are defined as regulating one's affective experience to increase positive mood or to decrease negative mood, respectively. According to affective models of drinking, drinking alcohol has a reinforcing effect due to regulating affect by increasing positive emotions (tension-reduction model) or decreasing negative emotions (negative reinforcement model) and may be a key mechanism contributing to problematic

alcohol behaviors (Baker et al., 2004; Bresin & Mekawi, 2020; Dvorak et al., 2018; Sher & Grekin, 2007). Although all four drinking motives have been found to be associated with increased drinking quantity or frequency and experiencing alcohol-related consequences among emerging adults (Kuntsche et al., 2005), enhancement and coping motives have been identified as robust predictors of experiencing greater alcohol consumption and alcohol-related problems in college students (Armeli et al., 2014; Martens et al., 2008; Merrill et al., 2014; Kenney et al., 2017; Stevenson et al., 2019).

A recent meta-analysis (Bresin & Mekawi, 2021) including several articles using undergraduate student samples investigated the association between drinking motives and drinking outcomes. Results indicated enhancement and coping motives were positively associated with alcohol consumption and problems cross-sectionally. Additionally, both motives had a stronger association with alcohol problems than social and conformity motives. These findings were replicated longitudinally for enhancement motives (positive associations with later use and problems); however, coping motives is only associated with later problems, not later use. Given these findings, the authors suggested coping motives are a potential indicator of a larger pattern of avoidance (e.g., drinking rather than dealing with a stress-inducing situation). Indeed, avoidance coping (as well as negative affect) has been found to be uniquely associated to episode-specific reports of drinking to cope among a large sample of college students (Ehrenberg et al., 2016), further highlighting how indicators of emotional well-being may be determinants of drinking behaviors for this population.

Drinking motives have been examined as robust mediators or mechanisms between affect (i.e., positive and negative) and drinking behaviors in a college student population using cross-sectional as well as longitudinal study designs (de Leon et al., 2020; Dvorak et al., 2018;

Stevenson et al., 2019). Prior research generally confirms that negative and positive affect are considered components of general well-being and frequently serve as indicators of well-being (Jovanović, 2015; Crawford & Henry, 2004; Watson et al., 1988). A recent review and meta-analysis that examined the relationship between affect and alcohol consumption among the general adult population found a small-medium effect size for both negative and positive affect being related to increased alcohol consumption (Tovmasyan et al., 2022). Among college students, a 15-day ecological momentary assessment (EMA) study found negative mood, stress, and positive mood all improved during drinking days, suggesting reinforcement as a mechanism between daily tension/stress (marked by mood instability) and drinking behaviors (Dvorak et al., 2018). Similarly, a more recent 21-day EMA study of college students found evidence for enhancement and coping motives to have influenced drinking behaviors. Specifically, there was an increase in positive mood and decrease in negative mood on reported drinking days (de Leon et al., 2020), suggesting students successfully enhanced their positive mood (i.e., enhancement) and reduced their negative mood (i.e., coping) by drinking. Finally, another EMA study of college students examined differences in associations between mood, drinking motives, and alcohol use and related consequences at between (i.e., trait-like affect) and within (i.e., daily level mood) subjects level (Stevenson et al., 2019). Researchers found positive mood to predict alcohol use and consequences through enhancement motives at both the within subjects and between subjects levels. At the between-subjects level, negative mood (i.e., depressed and anxious affect) predicted alcohol-related consequences via coping motives (Stevenson et al., 2019). At the within-subjects level, although moments when an individual's coping motives were higher were linked with higher levels of depressed and anxious mood, they did not predict greater daily alcohol consumption or consequences. Therefore, trait-like depressed and anxious

affect predicted trait-like coping motives (but not daily coping motives), which then predicted a greater rate of alcohol-related consequences (Stevenson et al., 2019). Cumulatively, findings from EMA studies support affect or emotional well-being to be a robust and relevant influence in predicting and reinforcing drinking behaviors in a college student population via enhancement and coping drinking motives.

There is also some support for drinking motives as moderators that strengthen the relationship between affect or aspects of emotional well-being and drinking behaviors in college students. Previous studies provide consistent evidence suggesting enhancement motives serve as a significant moderator (Armeli et al., 2010; Gautreau et al., 2015; Hamilton et al., 2020; Ralston et al., 2013). There are, however, there are conflicting findings examining if drinking to cope moderates the relationship between aspects of emotional well-being and alcohol behaviors where some studies found support (Armeli et al., 2008; Goldstein et al., 2012; Grant et al., 2009; Ralston & Palfai, 2012) and other studies produced weak support or null findings (Armeli et al., 2010; O'Hara et al., 2014; Ralston et al., 2013). Although not specific to college students, Holahan et al. (2001) found higher instances of drinking to cope significantly strengthened the relationship between depression/anxiety and alcohol consumption/problems across 10 years. Given these mixed findings in the literature, more research is required to understand how coping motives are related to the relationship between emotional well-being and drinking behaviors particularly in young adult college students.

A strong body of research has examined the affective models of drinking, examining how drinking behaviors relate to aspects of emotional well-being (Baker et al., 2004; Bresin & Mekawi, 2020; Cox & Klinger, 1988; Dvorak et al., 2018; Sher & Grekin, 2007), with college students in particular being an important population of focus due to their increased risk of

experiencing alcohol-related consequences (Hingson et al., 2017; Patrick et al., 2020).

Additionally, a majority of college students are emerging adults (Hanson, 2022), often marked as

the most unstable developmental period associated with increased mental health issues (Arnett et

al., 2014) and difficulties in emotional regulation (Schirda et al., 2016), both of which pose as

risk factors to experiencing adverse effects from alcohol use (Arnett, 2005; Aurora & Kanecky,

2015). Therefore, identifying preventable sources of emotional distress in college students is

imperative to improving their health and well-being. Social media is one potential culprit of

decreased emotional well-being. Research investigating social media's relation to alcohol

behaviors is limited and highly variable; in particular it is important to explore how emotional

well-being bridges this relationship. Moreover, college students are a key population to further

explore how these factors may be associated given that social media and alcohol related

behaviors are highly prevalent.

Social Media Use and Well-being

The impact of social media use (SMU) on well-being is a relatively recent field of

research that has gained much attention over the past two decades (Kross et al., 2021). Earlier

generations of social media research focused on the relationship between frequency of SMU and

well-being, suggesting how greater frequency of social media use is related to negative

implications for well-being (Kross et al., 2021). This preconceived notion is widely accepted as

fact in general society (Berryman et al., 2021); however, more recent studies have demonstrated

that the relationship between SMU and well-being is more dynamic and complex than what

earlier research has implied (Valkenberg, 2021). In reality, the impact of frequency of SMU on

well-being remains equivocal and more research is needed to further understand *why* SMU can

have negative implications to well-being (Valkenburg, 2021), particularly to emotional well-being, and what subgroups are at greater risk to experiencing these negative effects.

Young adults are a salient group of focus when investigating the effects of regular social media use, with 84% of young adults (ages 18-29) reporting to have at least one social media platform (Auxier & Anderson, 2021). Vast research concerning social media centers on the problematic or "disordered" aspect of social media use (see Huang, 2020 for a review; Kardfelt-Winther, 2014; 2017), essentially pathologizing SMU. Problematic social media use has been defined in various ways, such as by describing it as an "addiction" (Ryan et al., 2014), "dependency" (Ferris & Hollenbaugh, 2018), or "compulsive behavior" (Aladwani & Almarzouq, 2016) typically indicated by frequency (Huang, 2017) or assessed as an addiction following the DSM-V criteria (e.g., Bergen Facebook Addiction Scale; Andreassen et al., 2012).

There is mixed evidence of SMU frequency being directly associated with impaired psychological well-being (Karim et al., 2020; Keles et al., 2019), where some studies have found support for this association (Lin et al., 2016; Riehm et al., 2019; Shensa et al., 2017) and others concluded null findings (Berryman et al., 2021; Coyne et al., 2020; Schemer et al., 2021). For instance, a cross-sectional study of young adults observed significant associations between SMU frequency and depression (Lin et al., 2016), indicating a connection between SMU and mood dysregulation. A follow-up examination using the same data showed this association was largely explained by problematic SMU (defined as Facebook addiction; Shensa et al., 2017). Finally, self-reported time spent on social media among adolescents was found to be significantly positively associated with increased odds of reporting high levels of mental health problems (Riehm et al., 2019). Conversely, self-reported frequency of SMU did not demonstrate negative effects on well-being over time (e.g., depressive symptoms, anxiety symptoms, life satisfaction,

etc.) in two longitudinal studies examining adolescents transitioning into emerging adulthood across nine (Schemer et al., 2021) and eight years (Coyne et al., 2020).

Studies of specifically emerging adult college students similarly found mixed or no relation between SMU and emotional well-being. This is true for studies assessing for frequency of SMU using both self-report (Bennett et al., 2020; Berryman et al., 2018; Rasmussen et al., 2020) and objective forms of measurement via tracking reports provided by smartphones (Johannes et al., 2021). For example, an EMA study examining the relationship between SMU, body dissatisfaction, and negative affect among college women found frequency of SMU via self-reported data was not predictive of body dissatisfaction but was predictive of negative affect. However, number of social media platforms used was predictive of both body dissatisfaction and negative affect (Bennett et al., 2020). In contrast, Berryman et al. (2017) did not find SMU to predict any indicators of emotional well-being (i.e., suicidal ideation, social anxiety, loneliness) when assessed using self-report frequency. Another study assessing SMU via self-reported frequency explored the relation between social media and mental health problems via emotion regulation difficulties and perceived stress in a large sample of college students, and frequency was significantly associated with mental health problems. A serial mediation model that further explored the relationship showed that the impact was through emotion dysregulation and perceived stress; however, the remaining direct effect of SMU frequency was not significant after accounting for the indirect paths (Rasmussen et al., 2020). Therefore, as researchers have suggested (Berryman et al., 2017), it appears *how* social media is being used has an effect above and beyond *how much* social media is being used.

Emerging adults have been found to engage in more maladaptive forms of emotional regulation (Schirda et al., 2016) and experience peak levels of perceived loneliness (Shovestul et

al., 2020) when compared to older age groups. Therefore, emerging adult college students who are struggling with regulating their emotions are more likely to suffer with mood dysregulation in addition to being a salient group reporting higher levels of SMU. Given the mixed findings in the literature, frequency of SMU does not paint a clear enough picture as to how individuals are being emotionally affected by social media. There are indications of SMU having a negative impact on emotional well-being, but other mechanisms are likely also at play. Looking at deeper facets of social media use beyond frequency to capture *how* SMU can undermine aspects of well-being, such as by examining motives of use, has shown to be fruitful with evidence pointing to a more complicated and nuanced picture concerning the effects of SMU (Kross et al., 2021; Moretta & Buodo, 2020; Nesi et al., 2021; Nowland et al., 2018; Teppers et al., 2014).

Social Media Use and Well-being Framework

Corresponding to drinking motives, social media use motives (SMUM) may be a mechanism qualifying the association between use and related outcomes (mitigating or exacerbating it) that can ultimately lead to impaired mental or emotional well-being (Caplan, 2010). The Model of Compensatory Internet Use (Kardefelt-Winther, 2014) was created to view media use as "compensatory" behavior rather than as a compulsive or "addictive" behavior that earlier literature has suggested (Ryan et al., 2014). In attempt to not pathologize frequent media use, this model posits negative life situations can increase motivation to go online to alleviate negative feelings, but failure to adequately reduce negative emotions can lead to further negative outcomes. Essentially, individuals may be engaging in online activity (e.g., social media) to fulfill or compensate for a psychosocial detriment from real life. For instance, lack of social stimulation may foster increased feelings of perceived loneliness and engender motives of using social media to compensate for that negative feeling. A study using this theoretical framework

among Chinese college students found the association between motives of SMU (i.e., self-expression and passing time) and excessive SMU to be moderated by life satisfaction where motives were significantly related to excessive SNS usage for those with lower life satisfaction (Wang et al., 2016). Researchers suggest some students may be relying on SMU as a primary coping strategy for dealing with life problems. Therefore, using social media to assuage negative emotions may lead to temporary feelings of relief and increase mood as a form of coping, further reinforcing the compensatory behavior and increasing the risk of experiencing negative outcomes from usage if left unmanaged.

A similar theoretical approach to the Model of Compensatory Internet Use can be found in the more recently created Multidimensional Model of Social Media Use (MMSMU; Yang et al., 2021) which proposes a framework connecting social media use and potential outcomes to well-being in adolescent and emerging adults. According to this framework, there are three major dimensions of social media use that can elicit differing outcomes to well-being contingent upon why or how social media is being used: activity (i.e., interactive, active, and passive), motive (i.e., enhancement or compensation), and partner being communicated with via social media (i.e., strong or weak ties). The motive dimension of this model is most relevant to the present study as the MMSMU asserts individuals who are engaging in social media due to compensation motives may be at greater risk to experiencing poorer outcomes for well-being. Examples include the desire to form relationships online in response to feelings of loneliness, engaging in escapism via SMU to avoid stress-inducing situations, or by constantly checking for new updates in response to fear of potentially missing out on something exciting or interesting happening on social media (Yang et al., 2021).

Both models serve as frameworks promoting a more nuanced understanding of SMU and the subsequent implications to well-being by integrating motives of use rather than only examining SMU frequency or assuming negative effects of SMU only occur at a pathological level (i.e., assessing for addiction-like behaviors such as withdrawals or compulsiveness; Andreassen et al., 2014; Ryan et al., 2014). Although some research indicates addiction to SMU can lead to poorer subjective well-being (Zhao, 2021), perhaps considering how other aspects of SMU can negatively impact well-being will provide better understanding for the large proportion of individuals who are not demonstrating addictive-like qualities to SMU (Thompson et al., 2021).

Social Media Use Motives

Examining SMUM can potentially shed light on the relationship between SMU and outcomes of emotional well-being. This approach closely aligns with the idea of using social media as a form of coping with stress. Individuals may be using social media with the intention or motive of avoiding feelings or sources of stress, thus equating to regulating mood via social media use (Nesi et al., 2021). Coping strategies have been largely researched in an off-line context following the psychological stress and coping theory proposed by Lazarus and Folkman (1988) and assessed by the COPE inventory based on this model (Carver et al., 1989). One way of viewing possible coping strategies is that there are three broad styles of coping mechanisms including problem-focused (e.g., active coping), emotion-focused (e.g., distraction/avoidance), and appraisal-focused (e.g., positive reframing; Carver et al., 1989; Lazarus & Folkman et al., 1988). Individuals who are using social media with the motive to avoid stress-inducing situations or as a form of escapism from real life may desire to downplay their emotions rather than dealing with the stressor by using more adaptive forms of coping. Studies have indicated avoidance

forms of coping can induce greater feelings of stress (Doron et al., 2014) and exacerbate levels of depression or anxiety (Mahmoud et al., 2012). Students who are engaging in SMU with the motive to compensate for a real-life detriment eliciting negative emotions—and are therefore using social media as a form of coping—may be at greater risk of exacerbating emotional distress, ultimately impairing their state of emotional well-being via emotional consequences from SMU. Being in a vulnerable state of emotional well-being has the potential to influence health behaviors individuals choose to engage in (Schwartz et al., 2011).

Research is limited in examining how emotional responses or consequences of SMU (when used as a form of coping) is related to well-being. Among adolescents, positive responses to social media experiences were found to predict later depressive symptoms, and loneliness was found to strengthen this relationship. Study authors suggested the association between positive emotional responses and depressive symptoms may be a result of using social media in an effort to cope with loneliness such that when ineffective, this may incur depressive symptoms (Nesi et al., 2021). Another study of adults found spending more time on SMU was associated with stronger negative emotions (e.g., jealousy, loneliness, anger), for users of Facebook more so than Pinterest. Participants reported greater feelings of jealousy/envy, followed by feelings of loneliness, anger, and depression. Further mediation analyses indicated that, among Facebook users, all examined motives of use indirectly affected negative emotions through time spent using social media, such that greater motives to use the platform for socialization, entertainment, or information seeking was linked to greater use, which was linked to greater negative emotions (Lin et al., 2017). Although this study used an adult sample (*M* age = 37), with a focus on Facebook and Pinterest users, and did not examine more maladaptive SMUM (i.e., as a form of avoidance or escapism), findings do further suggest SMU is related to negative emotions,

therefore motives of use can play an important role. No study to date has specifically examined avoidance as a maladaptive SMUM and its relation to emotional well-being among college students. More research is required to further investigate these relationships, namely, the effects of social media to emotional well-being when used as a potential form of maladaptive coping in other populations at risk of being negatively affected by social media, such as young adult college students.

A study conducted in the Netherlands (van Ingen et al., 2016) explored how prevalent coping online is among individuals 16 and older (mean age = 50.4 years), where coping online was defined as strategies people use to manage stressful situations that were facilitated by the internet. Multiple dimensions of coping were identified, but all involved relying on the internet (e.g., "I turned to the Internet to take my mind off things"). About 57% of the sample reported having used online coping strategies after a negative life event before, with mental disengagement as the most prominent coping strategy endorsed. Additionally, time spent on social media was found to be positively related to all three dimensions of coping that were of interest (problem-focused, emotion-focused, and dysfunctional) and mental disengagement (i.e., using social media as a form of distraction) was consistently negatively associated with measures of well-being including life satisfaction, self-esteem, and optimism. Findings suggest there are individuals spending time on social media for the sake of mental disengagement, which is related to poorer levels of well-being (Ingen et al., 2016). Although this study was conducted in the Netherlands, it did not focus on a focused range such as young adults, and it did not assess emotion-specific aspects of well-being (i.e., depressive or anxiety symptoms), its findings are still highly relevant for U.S. college students. Social media is highly ubiquitous across all developed counties like the United States (Poushter et al., 2018), and these results further suggest

the importance of understanding how motives of social media use can have negative implications for overall well-being. Finally, when investigating the importance of coping in predicting impaired emotional well-being (i.e., depression, anxiety, and stress) among U.S. college students, Mahmoud et al. (2012) found maladaptive coping was the strongest predictor among other significant predictors (e.g., life satisfaction, gender, and GPA) influencing emotional-well-being. This further highlights college students as an at-risk group to engaging in unfavorable behaviors (e.g., maladaptive social media use) when managing their emotional well-being.

It is evident that social media is being used as a form of coping to mentally disengage in response to a negative life event (Ingen et al., 2016) or to compensate for a real-life detriment (e.g., loneliness; Nesi et al., 2021); moreover, its use is clearly linked to feelings of negative emotions (Lin et al., 2017; Nesi et al., 2021). Engaging in maladaptive forms of coping is associated with poorer emotional well-being (Mahmound et al., 2012), but existing research is limited in examining how maladaptive SMUM may impact emotional well-being through emotional responses, and if this behavior can affect health behaviors in college students who regularly use social media. Engaging in maladaptive forms of coping related to avoidance and escapism behaviors is also related to increased alcohol consumption (Doron et al., 2014), drinking to cope (Ehrenberg et al., 2016), and experiencing alcohol related problems (Corbin et al., 2013). More research is required to investigate the effects of SMU when being used as a maladaptive coping strategy (i.e., avoidance or escapism; Yang et al., 2021) and how this could affect the emotional well-being and health behaviors of college students.

Social Media and Alcohol Related Behaviors

Despite a recent increase in research providing greater insights of SMU beyond the scope of frequency (Kross et al., 2021), there is still a need for understanding the mechanisms involved

between SMU and different forms of well-being in college students, especially how impaired well-being elicited by social media could influence risky health behaviors such as drinking. College drinking has been linked to SMU primarily in limited studies assessing the importance of alcohol-related content on social media (see Curtis et al., 2017 for review) or how frequency/addictive behaviors of SMU influences drinking behaviors (Ceballos et al., 2018; Hormes et al., 2016), but few studies have investigated the relationship between SMUM and drinking behaviors in college students. One of the few studies to examine the association between SMU and drinking behaviors among college students found more frequent alcohol-related consequences among students who endorsed greater problems related to SMU (Hormes, 2014). This study also found students who engaged in greater "disordered" SMU were more likely to use alcohol to cope with negative affect, suggesting maladaptive SMU may indirectly influence drinking behaviors via emotional state. It should be noted that this study defined maladaptive SMU as "disordered" and assessed for addiction-like symptoms related only to Facebook, which aligns with earlier literature of social media use that narrowly focused on Facebook use (Huang, 2017; Kross et al., 2021). As of 2022, college students are less active on Facebook and are avid users of a variety of social media platforms. Recent findings from a survey administered by Pew Research Center (Auxier & Anderson, 2021) indicated Facebook as the most widely used social media platform among older American adults (50-70), whereas other platforms like Snapchat, Instagram, and Tiktok, "have an especially strong following among young adults". Corroboration of these trends were found in a study investigating representations of college drinking on social media, and Instagram and Snapchat were reported to be the preferred destination for posting alcohol-related content when compared to Facebook (Boyle et al., 2017). Indeed, college students spend most daily time on Snapchat, followed by Instagram,

and objectively measured frequency of SMU predicts greater alcohol consumption six months

later (only among men; LaBrie et al., 2021). It is evident that college students are using several

social media platforms over Facebook. Given that so much of the SMU literature is based on

Facebook-specific assessments, a more comprehensive assessment of use would provide a

clearer picture of how variations of SMU are associated with health behavioral outcomes with

literature suggesting an association does exist (Boyle et al., 2017; Hormes, 2014; LaBrie et al.,

2021). However, it is clear from mixed findings assessing frequency or disordered SMU that it

may be more informative to focus more on *how* college students may be using social media to

regulate mood (i.e., SMUM as a compensatory behavior; Kardefelt-Winther, 2014), which serves

as a mechanism influencing risky health behaviors rather than focusing on the effect of amount

of use across social media platforms that is typically viewed as an "addiction".

In summary, negative associations with well-being have been observed in connection

with SMU (Haddad et al., 2021; Shannon et al., 2022; Tibber et al., 2020), even though a

majority of college students are not engaging in addiction-like or pathological forms of social

media use (Galanek et al., 2018; Martinez & Nguyen, 2020). Engaging in frequent social media

use is typical for college students (Martinez & Nguyen, 2020) and extreme frequency of SMU

may not be the only function that could impair emotional well-being. The literature may be

overlooking potential mechanisms linking social media to emotional well-being, such as

emotional consequences of SMU. For instance, someone who rarely or moderately uses social

media (without exhibiting addictive behaviors) may still be experiencing negative effects on their

well-being contingent upon why they are engaging in social media in the first place (Kardefelt-

Winther, 2014; Yang et al., 2021) and their personal responses or emotional consequences to

their usage (Nesi et al., 2021). Therefore, further investigation into the effects of maladaptive

SMUM (e.g., escapism), which may be more prevalent than extreme forms of SMU (i.e., high frequency or addictive SMU), could yield more informative examinations on the impact of SMU on emotional well-being and related risky health behaviors among college students.

Purpose

College students are an at-risk population to not only experiencing heightened levels of emotional distress (Kim et al., 2021; Martinez & Nguyen, 2020; Sheldon et al., 2021) and difficulties with emotion regulation, but also increased rates of alcohol-related consequences (White & Hingson, 2013). Furthermore, given that college students are largely comprised of emerging adults (Hanson, 2022), who demonstrate the highest rates of SMU compared to any other age group (Auxier & Anderson, 2021), they are a salient population to examine the effects of how motives of social media use could indirectly influence alcohol-related behaviors via emotional well-being. Therefore, the purpose of this study was to investigate the relationships between escapism SMUM, emotional consequences induced by social media, emotional well-being, and drinking outcomes among college students.

Aim 1

I hypothesized a serial mediated model where SMUM (i.e., escapism motive) would predict poorer levels of emotional well-being (i.e., total score of depression, anxiety, and stress symptoms) via induced negative emotional consequences (i.e., negative emotions to SMU) and ultimately result in greater alcohol consumption and problems (Figure 1).

Hypotheses 1-3. Endorsing greater avoidance motives will predict greater negative emotions (H1), which will then be associated with greater emotional distress (H2) leading to reporting (a) greater alcohol-related consequences (H3a; Model 1), (b) greater drinking quantity (H3b; Model 2), and (c) greater drinking frequency (H3c; Model 3).

Figure 1

Serially Mediated Model for Hypotheses 1-3
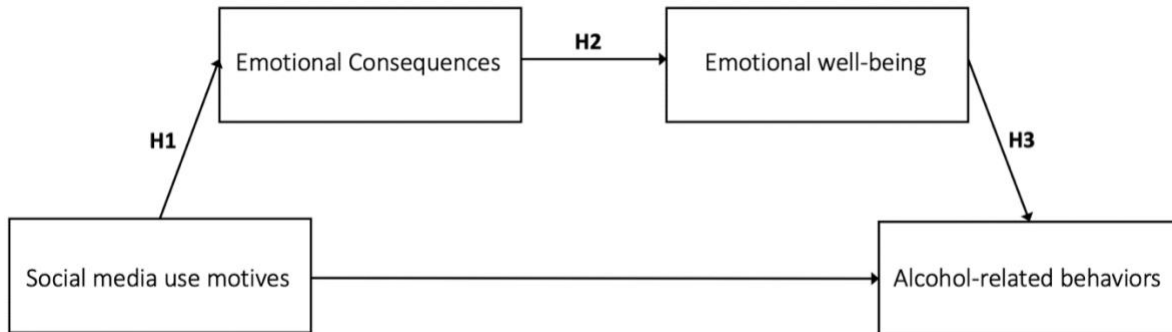
Note. Social media use motives refer to escapism motives. Emotional consequences refer to negative emotions to SMU and alcohol-related behaviors refers to (H3a) consequences, (H3b) quantity, and (H3c) frequency.

Aim 2

Greater endorsement of internal drinking motives will moderate the relationship between emotional well-being and drinking outcomes in the serially mediated model (see Figure 2).

Hypothesis 4. Endorsing greater coping drinking motives will lead to a stronger relationship between emotional well-being and drinking outcomes, such that the relationship will be stronger between emotional well-being and (a) alcohol-related consequences (H4a; Model 4), (b) drinking quantity (H4b; Model 5), and (c) drinking frequency (H4c; Model 6).

Hypothesis 5. Endorsing greater enhancement motives will lead to a stronger relationship between emotional well-being and drinking outcomes, such that students who report greater enhancement motives will have a stronger relationship between emotional well-being and (a) alcohol-related consequences (H5a; Model 7), (b) drinking quantity (H5b; Model 8), and (c) drinking frequency (H5c; Model 9).

Figure 2

Serially Mediated Model for Hypotheses 4 and 5
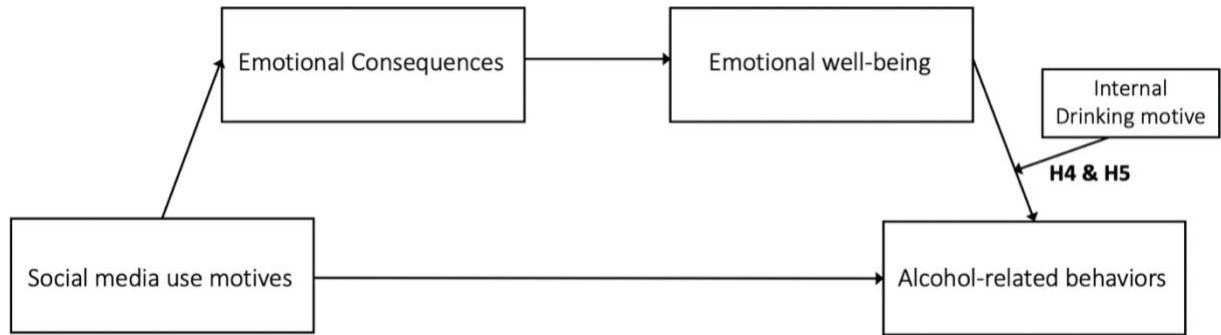
Note. Social media use motives refer to escapism motives. Emotional consequences refer to negative emotions to SMU. Internal drinking motive refers to Hypothesis 4 (coping motive) and 5 (enhancement motive). Alcohol-related behaviors refers to (H4a & H5a) consequences, (H4b & H5b) quantity, and (H4c & H5c) frequency.

CHAPTER II

METHODS

Participants

Participants were undergraduate students recruited via Sona and student announcement posts. Data collection occurred from October 2022 to April 2023. Upon completing the online survey via Qualtrics, participants had the option to either receive 0.5 Sona credits or be entered into a raffle to win one of five $20 Amazon electronic gift cards. Eligibility criteria included being a current student, being between 18-25 years old, having at least one active social media account, and having drank alcohol in the past 30 days. This study was approved by the IRB prior to any form of data collection. Although the study was open for all students to complete (i.e., there was no required screener survey), the final sample ($n = 369$) was included only those who met all required eligibility criteria and who correctly answered two or three attention checks (out of three possible). There were 912 recorded responses. Cases were dropped due to not reporting past 30-day drinking ($n = 456$), not being a current student ($n = 14$), not having at least one active social media account ($n = 1$), and for failing more than one attention check ($n = 53$). This resulted in a sample of 387. Data were further examined for potential quality issues, such as strange repetition patterns or evidence of being a duplicate. This resulted in dropping cases that were duplicates based on Sona IDs (i.e., the same Sona ID being recorded twice; $n = 4$) and that demonstrated consistent response repetition (i.e., selecting the same answer for all measures throughout entire survey; Meade & Craig, 2012; $n = 4$). Other cases were dropped for problematic response patterns. Specifically, these cases ($n = 10$) were all during a large spike in the number of people who took the survey (as if one person or a bot took it several times in a

row), reported the same suspicious free response answers for the social media use frequency items (e.g., reporting using social media for 5 hours and 300 minutes or for 4 hours and 240 minutes), reported to have accessed the survey via Sona after Sona closed, and provided emails with a similar pattern of being made up of random letters and numbers (as well as all using Gmail). Dropping these cases resulted in a final sample size of 369 (53.4% White, 39.8% Black/African American; 82.1% female; see Table 1 for more demographic information) used for analyses.

Table 1

Participant Demographic Information

Variable	*M* (*SD*)
Age	20.18 (1.98)
	n (%)
Student status	
Freshman	138 (37.4)
Sophomore	65 (17.6)
Junior	74 (20.1)
Senior	74 (20.1)
Graduate	12 (3.3)
Other	6 (1.6)
Sex	
Female	303 (82.1)
Male	63 (17.1)
Prefer not to answer	3 (0.8)
Gender	
Female	293 (79.4)
Male	64 (17.3)
Non-binary	11 (3.0)
Don't know	1 (0.3)
Ethnicity – Hispanic	
Yes	50 (13.6)
No	319 (86.4)
Race	
Black or African American	147 (39.8)
White	197 (53.4)
Asian	26 (7.0)
Native American or Pacific Islander	7 (1.9)
American Indian or Alaskan Native	11 (3.0)
Middle Eastern or Northern African	3 (0.8)
More than one race	33 (9.0)
Prefer not to answer	10 (2.7)

Note. Participants were able to select more than one race, therefore the sum of percentages for race is not equivalent to 100%.

Procedure

The Qualtrics survey was posted on Sona and student announcements. Students who read the study description (see Appendix A) and were interested in participating in the online study were directed to read and complete the consent form. Participants were informed that the entire survey should take about 25-30 minutes to complete in addition to other study details (see Appendix B). Participants first reported demographic information required to determine if they were eligible, such as if they are currently enrolled as a student, if they drank in the past 30 days, if they currently have/use social media(s), and their age in years. Examples of social media platforms were provided (e.g., Instagram, Snapchat, YouTube, etc.). Finally, participants answered a series of questionnaires asking about their experiences with social media, aspects of emotional well-being, and drinking behaviors.

Measures

Social Media Use Motives (SMUM)

SMUM was assessed by adapting the 9-item Mobile Phone-Use Motivations Scale (Kim, 2017) initially created to assess escape motivations (e.g., To feel less lonely; To forget about worries and concerns; see Appendix C) and relationship motivations (e.g., To improve relationships with friends and family; To let others know you care for them) of smartphone use. Only escapism SMUM were used for analyses in hypothesized models. For the current study, "Social media" replaced "smartphone" in the instructions such that participants were asked to indicate how strongly they agree with the provided motivations of using social media on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The original scale has demonstrated acceptable reliability when administered to the general American population (α = 0.85; Kim, 2017) as well as among Chinese college students (α = 0.87; Fu et al., 2020).

Reliability in this study was also acceptable (α = 0.82) for the escapism items (6 items) which were used for analyses. Although not specific to this measure, assessing aspects of social media use by adapting measures created to assess smartphone usage (Rozgonjuk et al., 2020; Sha et al., 2019; Sindermann et al., 2020) and vice versa (Chen et al., 2017) has been used as an approach in previous research. The items from the scale are largely related and applicable to social media use since smartphones are the most commonly used medium for social media use, especially among young adults (Balcerowska et al., 2020; see Marino et al., 2021 for review; Rosen et al., 2013; Sharifian et al., 2021). Examples of social media platforms (e.g., Instagram, Snapchat, YouTube) were from the list of platforms included in the Pew Research Center report on social media use in 2021 among American adults (Auxier & Anderson, 2021).

Emotional Consequences of Social Media Use

A 10-item measure initially constructed to briefly assess the frequency adolescents experience positive and negative emotional responses to social media activity (Nesi et al., 2021) was used for the current study to assess emotional consequences of social media use in college students. This measure was created by adapting items from previous national surveys that examined social media use and well-being using teenager and young adult samples (Nesi et al., 2021; Rideout & Fox, 2018), suggesting its use in an emerging adult sample is appropriate. Participants are asked "When you use social media, how often do you...?", followed by a list of statements including five positive (e.g., "…feel you can express yourself creatively") and five negative (e.g., "...feel like other people are doing better than you") emotional responses (see Appendix D). Responses were rated on a 5-point scale (1 = *Never*, 5 = *Always*). Reliability was shown to be good for both positive (α = .79, .89) and negative subscales (α = 0.85, 80) when administered to adolescents in the U.S. (Nesi et al., 2021). Only negative items (5 items) were

used in analyses for the current study, which demonstrated acceptable reliability ($\alpha = 0.78$). The items are not specific to adolescents and are applicable to young adult college students who engage in similar levels of social media use (Auxier & Anderson, 2021). A single score was created by averaging the 5 negative items, where higher scores will reflect more negative emotional consequences.

Emotional Distress

The Depression Anxiety Stress Scales-21 (DASS-21; Lovibond & Lovibond, 1995) was used to assess emotional well-being. This scale was initially constructed to assess multiple dimensions of psychological distress, including depression (e.g., "I couldn't seem to experience any positive feeling at all"), anxiety (e.g., "I felt that I was using a lot of nervous energy"), and stress (e.g., "I found it hard to wind down"; Lovibond & Lovibond, 1995; see Appendix E). For the purposes of the current study with a focus on how social media is related to general emotional well-being, the DASS-21 was used as a unidimensional measure to assess general distress. There is support for this approach in prior research. The dimensions and internal consistency reliability estimates have been psychometrically validated in a college student sample ($\omega = .89$ for DASS-21 total score; Osman et al., 2012). Moreover, authors suggest deriving a DASS-21 total scale score rather than independent scores of each dimension to assess general emotional distress because correlations among the factors in a three-factor model were exceptionally high and the common factor in a bifactor model accounted for the most item variance compared the unique factors (Osman et al., 2012). In corroboration of this suggestion, a study that similarly evaluated the dimensionality and reliability of the DASS-21 among college students across eight countries (including the U.S.) concluded a bifactor model of the DASS-21 outperformed a correlated three-factor model in all eight countries, suggesting the measure

should be used as a unidimensional scale of distress (Zanon et al., 2021). Participants rated the extent each statement applied to them over the past week on a 4-point scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). Reliability was high for the current study (α = .94). A single score was created by averaging across items. Higher scores represent greater emotional distress.

Drinking Related Behaviors

Drinking Motives. The 20-item Drinking Motives Questionnaire — Revised (Modified DMQ-R; Cooper, 1994) is four-factor measurement instrument constructed to assess four drinking motives of alcohol use (5 items each) including enhancement (e.g., "Because you like the feeling"), coping (e.g., "Because it helps you when you feel depressed or nervous"), social (e.g., "To be sociable), and conformity (e.g., "Because your friends pressure you to drink") motives (See Appendix F) . The DMQ-R is a widely used and validated measurement instrument among studies examining alcohol use in college students (Kuntsche et al., 2005; Merrill et al., 2014; Read et al., 2003). Adequate reliability (α = .81 to .91) of this measure's subscales has been demonstrated by several studies using college student populations (Martens et al., 2008; Merrill et al., 2014). Participants rated how often they are motivated to drink for the reason provided in each item on a 5-point scale ranging from 1 (*almost never/neve*r) to 5 (*almost always/always*). Mean scores were computed for each subscale/motive such that higher scores for each subscale indicate greater endorsement of a specific drinking motive. Coping and enhancement drinking motives were the only motives used for analyses to test hypotheses 4 and 5, respectively, and reliability was high for both coping (α = .87) and enhancement subscales (α = .87) for the current study.

Quantity/Frequency of Alcohol Use. The modified Daily Drinking Questionnaire (DDQ; Collins et al., 1985) was used to assess the number of drinks participants consumed in a typical week during the past three months, which is a time period that has been used in college student sample in prior studies (Larimer et al., 2004; Lewis et al., 2009; Neighbors et al., 2006; Shishido et al., 2013). This measurement instrument has been used in multiple studies using college students and has been established as a reliable self-report measure showing high test–retest reliability (2 months $r = 0.87$; Marlatt et al., 1998) and good internal consistency among this population (Braitman et al., 2021; Marlatt et al., 1998; Murphy et al., 2005). Participants were informed of what the standard size/definition of one alcoholic drink is (e.g., one can of beer, 5 fl. oz. of wine, etc.) and then reported the typical number of drinks they consumed on a given day (e.g., "On a typical Monday, I have X drinks", See Appendix G) for each day of the week. Total number of standard drinks consumed for the week were summed for the quantity variable, and number of drinking days were summed for the frequency variable.

Consequences. The 24-item Brief Young Adult Alcohol Consequences Questionnaire (B-YAACQ; Kahler et al., 2005) is a shortened version of the original 48-item YAACQ (Read et al., 2006) that has been validated and widely used to assess alcohol-related consequences in college students (Kahler et al., 2006; see Toner et al., 2019 for review). Participants reported whether they experienced any of the 24 consequences (e.g., "I have taken foolish risks when I have been drinking"; "While drinking, I have said or done embarrassing things") in the past 3 months (*yes* = 1; *no* = 0; see Appendix H). Extent of alcohol-related consequences were measured by summing all items that were marked "yes" such that higher scores equate to experiencing greater alcohol-related consequences.

Demographics

A general background questionnaire assessed basic demographic information, including age in years, ethnicity/race, sex, identified gender, sexual identity, year in school, and employment status (see Appendix I). For compensation, participants were asked in a separate survey (for non-identifiable purposes) to provide their Sona ID if they chose to receive Sona credit or email if they chose to be entered into the raffle.

Attention Checks

In order to assess respondents' attention while taking the survey as well as to ensure the quality of the overall sample used for analyses (Shamon & Berning, 2020), three attention check items were included in the study, each of which has an obvious correct response (e.g., "For this item, select 'Almost Always'", "Select the LARGEST number", and "For this item, select 'Sometimes'"). Including participants who are not paying attention while completing the study can reduce power and reliability of analyses (Oppenheimer et al., 2009). Therefore, those who failed to answer two or more attention check questions correctly were not included in analyses.

Analytical Approach

To test hypotheses, Mplus version 8 (Muthen & Muthen, 2017) was used to conduct a series of serial mediation analyses, resulting in a total of three models. Model 1 tested hypotheses 1-3 via a serial mediation model, and models 2 and 3 tested hypothesis 4 and 5, respectively, via a moderated serial mediation model. Maximum likelihood estimation was used to address missingness (Rubin, 1976). Pearson's correlations (see Table 2) and independent samples t-tests were conducted to examine if missingness was related to any study variables via SPSS version 29. Several studies have indicated sex to be consistently associated with drinking variables as well as social media use behaviors (Perkins, 1992; Wilsnack, 2018), therefore

biological sex was included as a covariate for all models. Alcohol quantity was controlled for when examining alcohol-related consequences. To test hypotheses 4 and 5 for aim 2, drinking motives and emotional distress were mean-centered prior to analyses to minimize multicollinearity and for interpretability purposes of parameter estimates.

Additionally, bootstrapped confidence intervals were used to assess significance for the main analyses. Bootstrapping is a non-parametric method that does not rely on assumptions of normality for indirect effects. Statistical significance was determined by bootstrapped 95% confidence intervals (based on 10,000 bootstrapped samples) that did not contain zero (Hayes, 2017; MacKinnon et al., 2014; Strout & Bolger, 2002).

Table 2

Correlations between Key Study Variables

Variables	*n*	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11
1. Age	369	20.18	1.98	--										
2. Sex	366	--	--	-.02	--									
3. SMU frequency	369	23.70	7.42	.03	.03	--								
4. Problematic SMU	369	16.31	4.67	.03	.03	.30**	--							
5. Escapism SMU motives	369	4.24	1.28	.02	.04	.13*	.45**	--						
6. Negative emotional consequences from SMU	369	4.31	0.89	.06	.16**	.16*	.48**	.38**	--					
7. DASS	366	0.94	0.63	.10	.10	.09	.41**	.39**	.39**	--				
8. Drinking to cope	369	2.11	0.98	.10	.04	.13*	.46**	.37**	.34**	.38**	--			
9. Drinking to enhance	369	2.64	1.05	-.05	-.04	.12*	.28**	.33**	.25**	.25**	.59**	--		
10. Alcohol problems	367	4.75	4.91	.02	-.06	.18**	.35**	.12*	.21**	.24**	.45**	.36**	--	
11. Drinking Quantity	369	4.45	5.80	.01	-.06	.16**	.16**	-.003	.08	.05	.39**	.37**	.43**	--
12. Drinking frequency	369	1.84	1.50	.14**	-.04	.09	.14**	.02	.04	.02	.35**	.26**	.33**	

*Correlation is significant at the 0.01 level (2-tailed).
**Correlation is significant at the 0.05 level (2-tailed).
Note. SMU = social media use. DASS = Depression Anxiety Stress Scale. Sex was coded 0 = *male*, 1 = *female* (*n* = 3 for "Prefer not to answer").

Power Analyses

Aim 1. Monte Carlo power analyses (Schoemann et al., 2017) for indirect effects (to examine Aim 1) were conducted for the serial mediation paths proposed for Aim 1 (H1, H2, H3) using model 6 from PROCESS macro (Hayes, 2017). Correlation and standard deviation values required for this analysis were obtained from using literature that has assessed similar constructs together (e.g., studies including SMU, negative emotions, total DASS-21, and alcohol behaviors; Acuff et al., 2020; Gonzalez et al., 2011; Jordan et al., 2018; Kahler et al., 2008; Kim, 2017; Lyvers & Coundouris et al., 2018; Lyvers & McCann et al., 2018; Nesi et al., 2017) since no study to date has tested these specific serial mediation models before. The Monte Carlo power analysis indicated a minimum of 330 participants were necessary to reach .80 power with an alpha of .05 for the serial mediation path of interest for this proposed study.

Aim 2. A series of power analyses were conducted using G*Power 3.1 to determine the required sample size for the hypotheses that contain moderation (H4 & H5). There have not been any studies to date that have examined the moderating effects of coping and enhancement drinking motives between emotional well-being and alcohol outcomes in a moderated serial mediation model, therefore literature examining similar constructs were used to determine the required sample size to power the moderated path (Cohen, 1992).

Literature examining how coping drinking motives moderates the relationship between a construct related to emotional well-being (e.g., depression, anxiety, affect, etc.; Marten et al., 2008; Goldstein et al., 2012; Mulligan et al., 2016) and alcohol outcomes/behaviors were used to conduct the power analysis for H4. Based on the R^2 values from previous literature (Goldstein et al., 2012; Marten et al., 2008; Mulligan et al., 2016), an f^2 of .031 was produced, resulting in a suggested sample size of 256.

Similarly, literature examining enhancement drinking motives as a moderator between a construct related to emotional well-being and alcohol outcomes/behaviors was used to conduct a power analysis for H5 (Gautreau et al., 2015; Haynes et al., 2018; Ralston et al., 2013). An f^2 of .023 was used for the analysis, producing a suggested sample size of 331. Taken together, 330 students were necessary to test Aim 1 (indirect effects) and 251 and 331 students were necessary to test Aim 2 (moderation by drinking motives). Therefore, to power the hardest-to-detect effect, a sample size of $N = 331$ was necessary.

CHAPTER III

RESULTS

Data Cleaning

Missing Data

Missingness was examined for the final dataset. There were three cases identified to have missingness for DASS and three cases for enhancement drinking motive. Missing on DASS was significantly related to age, quantity, and frequency. The mean difference in age was less than one (missing $M = 21.00$; not missing $M = 20.17$). Due to the difference in age being so minute, age was not included as a control variable in analyses. The means of missing DASS cases for quantity ($M = 13.00$) and frequency ($M = 4.00$) were greater than non-missing DASS cases (quantity $M = 5.46$; frequency $M = 1.83$). Having missing data on enhancement drinking motive was significantly related to quantity and frequency. The same trend was found, where cases missing on enhancement motive had higher means of quantity ($M = 15.50$) and frequency ($M = 4.00$) compared to non-missing cases (quantity $M = 5.50$; frequency $M = 1.80$). Since variables with significantly different means between missing and non-missing were all outcome variables (i.e., quantity and frequency), they were not included as covariates in analyses. Missingness for alcohol outcomes (i.e., quantity, frequency, and alcohol-related consequences) was not examined and items left unanswered were considered as not being endorsed (i.e., included in the final score as a zero instead of a blank response) when calculating the total composite score, as is common for these specific measures.

Assumptions Check

Boxplots were used to examine if there were any outliers. Cases considered extreme or far outliers (i.e., values with asterisks far from other cases) were winsorized. There was one outlier observed which resulted in the change of one value for quantity. Normality was assessed using histograms, skewness, and kurtosis. All study variables demonstrated normal distributions and did not have problematic skewness or kurtosis values (skewness ≤3.0; kurtosis ≤10; Kline, 2023). Scatterplots were created for each IV predicting a DV (i.e., for each path in the hypothesized models), resulting in 11 scatterplots. Since there was no evidence of distinct non-linearity observed for any proposed model paths and nonnormality was not apparent, transformations were not made to the data.

Multivariate outliers were also examined with the use of Mahalanobis distance (leverage), externally studentized residuals (distance), as well as DFFITS values (influence; Darlington & Hayes, 2016). Multivariate outliers were examined for each path across models where a variable is predicting an outcome (11 total possible paths). A Mahalnobis Distance value greater than 6.63 was considered an outlier (using an alpha of .01 and k of 1). The cutoff value for studentized residuals that determined if a case's distance was an outlier was 4.26 (using an n of 369 and an alpha of .00003 by dividing .01 by 369). A DFFITS value greater than 0.104 was considered an outlier (because this study included a larger sample size, $\pm 2\sqrt{(k+1)/n}$ was the recommended DFFITS cutoff with 369 as the sample size; Belsley et al., 1980). For leverage, there were 2 outliers identified across paths (i.e., the same path across models, such as the final path with a variable predicting an alcohol outcome) predicting quantity, 2 outliers across paths predicting frequency, and 2 outliers across paths predicting alcohol-related consequences. No outliers for leverage were identified for all other paths across models. For distance, there were a total of 8 outliers identified across paths predicting quantity and 4 total outliers across paths

predicting alcohol-related consequences. No outliers for distance were identified for all other paths across models. For influence, there 8, 11, and 13 outliers identified for three paths across models where variables (i.e., drinking to enhance, DASS, and drinking to cope, respectively) predicted quantity. There were 12, 13, and 13 outliers identified for three paths across models where variables (i.e., drinking to enhance, drinking to cope, and DASS, respectively) predicted frequency. All outliers identified were related to the drinking outcome variables, or the final path of the models. Since univariate outliers were also examine and any extreme outliers were winsorized, in addition to the inclusion of bias-corrected bootstrapping to analyses, which is not sensitive to small departures from normality, transformations to the independent variables were not performed.

Aim 1

A serial mediation model (Model 1) was conducted to test hypotheses 1-3. It was hypothesized that escapism SMUM would be positively related to negative emotional consequences (H1), which would then be positively related to greater overall emotional distress (H2), and greater distress would then be associated with greater alcohol-related consequences and consumption (H3a-c).

Hypothesis 1-3

Escapism SMUM was significantly and positively related to negative emotional consequences from social media use after controlling for sex, $B = 0.14$, 95% CI [0.067, 0.216]. Results suggest endorsing greater escapism motives was related to experiencing greater negative emotional consequences, supporting hypothesis 1. Engaging in greater negative emotional consequences from social media use was also associated with greater emotional distress after controlling for sex, $B = 0.18$, 95% CI [0.090, 0.260], supporting hypothesis 2.

Greater emotional distress was significantly associated with experiencing greater alcohol-related consequences when controlling for sex and alcohol quantity (H3a), $B = 1.13$, 95% CI [0.316, 1.939]. Emotional distress was not significantly related to drinking quantity (H3b) or drinking frequency (H3c). Endorsing greater escapism SMUM was also not indirectly related to any alcohol outcome through negative emotional consequences and emotional distress. Hypothesis 3 was partially supported (see Table 3).

Aim 2

A moderated serial mediation model was performed to test if drinking to cope (H4) and or drinking to enhance (H5) moderated the association between emotional distress and alcohol outcomes. It was hypothesized that endorsing greater coping and/or enhancement drinking motives would positively strengthen the relationship between emotional distress and alcohol outcomes.

Hypothesis 4

Contrary to hypotheses, drinking to cope was not found to moderate the relationship between emotional distress and alcohol-related consequences (H4a), drinking quantity (H4b), nor drinking frequency (H4c), but there were significant main effects. Drinking to cope (after controlling for emotional distress) was significantly associated with all three alcohol outcomes such that students endorsing greater drinking to cope motives generally reported experiencing more alcohol-related consequences (even when controlling for alcohol consumption), $B = 1.32$, 95% CI [0.567, 2.028], drinking greater quantities, $B = 2.63$, 95% CI [1.926, 3.400], and drinking more frequently, $B = 0.61$, 95% CI [0.444, 0.799]. Emotional distress (after controlling for drinking to cope) remained significantly positively related to alcohol-related consequences, $B = 0.78$, 95% CI [0.031, 1.515], but became negatively related to drinking frequency, $B = -0.29$,

95% CI [-0.521, -0.049], and was not related to alcohol quantity. Escapism SMUM was found to be significantly indirectly related to less alcohol-related consequences, quantity, and frequency after controlling for drinking to cope and its interaction with emotional distress as reported in Table 3. Hypothesis 4 was not supported by these findings since drinking to cope was not found to be a significant moderator.

Hypothesis 5

Drinking to enhance was also not found to moderate the relationship between emotional distress and alcohol-related consequences (H5a), drinking quantity (H5b), nor drinking frequency (H5c), but there were main effects. Controlling for emotional distress, endorsing greater drinking to enhance motives was significantly related to reporting greater alcohol-related consequences, $B = 0.84$, 95% CI [0.160 1.266], drinking quantity, $B = 2.10$, 95% CI [1.388, 2.515], and drinking frequency, $B = 0.347$, 95% CI [0.201, 0.482]. Controlling for enhancement motives, emotional distress was also positively associated with alcohol-related consequences, $B = 0.89$, 95% CI [0.252. 1.380], but was not significantly associated with quantity or frequency. There was one significant indirect effect, such that escapism SMUM was negatively indirectly related to alcohol-related consequences according to confidence intervals, $B = -0.01$, 95% CI [-1.277, -0.330] after controlling for enhancement drinking motives and its interaction with emotional distress. Hypothesis 5 was also not supported by these findings since drinking to enhance was not found to be a significant moderator (see Table 3).

Table 3

Escapism Social Media Use, Negative Emotional Consequences from Social Media Use, and

DASS Predicting Alcohol Problems, Quantity, and Frequency

	B	*SE*	*p*	95% CI
Aim 1 (Model 1)				
Hypothesis 1				
Escapism SMU motives → Negative emotional consequences from SMU	**0.14**	**0.04**	**<.001**	**0.067, 0.216**
Hypothesis 2				
Negative emotional consequences from SMU → DASS	**0.18**	**0.04**	**<.001**	**0.090, 0.260**
Hypothesis 3				
H3a				
DASS → Alcohol problems	**1.13**	**0.41**	**.006**	**0.316, 1.939**
Escapism SMU motives → Alcohol problems	**-0.17**	**0.19**	**.358**	**-0.566, 0.181**
Indirect effect:				
Escapism SMU motives → Negative emotional consequences from SMU → DASS → Alcohol problems	-0.109	0.09	.247	-0.337, 0.042
H3b				
DASS → Quantity	-0.07	0.55	.894	-1.169, 0.988
Escapism SMU motives → Quantity	-0.43	0.26	.100	-0.948, 0.074
Indirect effect:				
Escapism SMU motives → Negative emotional consequences from SMU → DASS → Quantity	-0.002	0.02	.901	-0.035, 0.026
H3c				
DASS → Frequency	-0.10	0.14	.501	-0.377, 0.190
Escapism SMU motives → Frequency	-0.06	0.07	.378	-0.202, 0.075
Indirect effect:				
Escapism SMU motives → Negative emotional consequences from SMU → DASS → Frequency	-0.002	0.004	.551	-0.013, 0.004
Aim 2 (Models 2 & 3)				
Hypothesis 4 (Model 2; DASS * Drinking to cope)				
H4a				
DASS → Alcohol problems	**0.78**	**0.38**	**.039**	**0.031, 1.515**
Drinking to cope → Alcohol problems	**1.32**	**0.37**	**<.001**	**0.567, 2.028**
DASS * Drinking to cope → Alcohol problems	-0.24	0.39	.535	-0.881, 0.668

Table 3 *(continued)*

	B	SE	p	95% CI
Escapism SMU motives → Alcohol problems	**-0.38**	**0.20**	.052	**-0.776, -0.010**
Indirect effect:				
Escapism SMU motives → Negative emotional consequences from SMU → DASS → Alcohol problems	**-0.19**	**0.10**	.056	**-0.440, -0.041**
H4b				
DASS → Quantity	-0.87	0.44	.051	-1.730, 0.011
Drinking to cope → Quantity	**2.63**	**0.38**	**<.001**	**1.926, 3.400**
DASS * Drinking to cope → Quantity	-0.06	0.44	.892	-0.981, 0.780
Escapism SMU motives → Quantity	**-0.76**	**0.24**	**.002**	**-1,255, -0.309**
Indirect effect:				
Escapism SMU motives → Negative emotional consequences from SMU → DASS → Quantity	**-0.02**	**0.01**	.129	**-0.061, -0.003**
H4c				
DASS → Frequency	**-0.29**	**0.12**	**.016**	**-0.521, -0.049**
Drinking to cope → Frequency	**0.61**	**0.09**	**<.001**	**0.444, 0.799**
DASS * Drinking to cope → Frequency	0.01	0.11	.908	-0.186, 0.245
Escapism SMU motives → Frequency	**-0.14**	**0.07**	**.035**	**-0.272, -0.008**
Indirect effect:				
Escapism SMU motives → Negative emotional consequences from SMU → DASS → Frequency	**-0.01**	**0.004**	.095	**-0.020, -0.001**
Hypothesis 5 (Model 3; DASS * Drinking to enhance)				
H5a				
DASS → Alcohol problems	**0.89**	**0.41**	**.029**	**0.073, 1.667**
Drinking to enhance → Alcohol problems	**0.84**	**0.29**	**.003**	**0.252 1.380**
DASS * Drinking to enhance → Alcohol problems	0.40	0.34	.232	-0.187, 1.131
Escapism SMU motives → Alcohol problems	-0.34	0.20	.087	-0.738, 0.031
Indirect effect:				
Escapism SMU motives → Negative emotional consequences from SMU → DASS → Alcohol problems	**-0.19**	**0.10**	.063	**-0.448, -0.036**
H5b				
DASS → Quantity	-0.48	0.46	.292	-1.388, 0.407
Drinking to enhance → Quantity	**2.10**	**0.29**	**<.001**	**1.559, 2.711**
DASS * Drinking to enhance → Quantity	-0.10	0.43	.812	-0.951, 0.747

Table 3 *(continued)*

	B	*SE*	*p*	95% CI
Escapism SMU motives → Quantity	**-0.80**	**0.24**	**.001**	**-1.277, -0.330**
Indirect effect:				
Escapism SMU motives → Negative emotional consequences from SMU → DASS → Quantity	-0.01	0.01	.356	-0.047, -0.007
H5c				
DASS → Frequency	-0.17	0.13	.194	-0.416, 0.085
Drinking to enhance → Frequency	**0.37**	**0.08**	**<.001**	**0.223, 0.519**
DASS * Drinking to enhance → Frequency	-0.04	0.10	.708	-0.241, 0.159
Escapism SMU motives → Frequency	-0.13	0.07	.068	-0.265, 0.010
Indirect effect:				
Escapism SMU motives → Negative emotional consequences from SMU → DASS → Frequency	-0.004	0.004	.280	-0.015, -0.001

Note. SMU = social media use. DASS = Depression Anxiety Stress Scale. Sex was coded 0 = *male*, 1 = *female* (*n* = 3 for "Prefer not to answer"). DASS, drinking to cope, and drinking to enhance were mean-centered for Aim 2 (H4 & H5).

CHAPTER IV

DISCUSSION

The purpose of this examination was twofold: to test if using social media with escapism motives was related to greater alcohol-related consequences and consumption via greater negative emotional consequences and emotional distress (Aim 1), and test if drinking to cope and/or drinking to enhance motives moderated the relationships between emotional distress and drinking outcomes by strengthening their associations (Aim 2). Overall, there was partial support across hypotheses of Aim 1 (specifically, it was supported only for alcohol-related consequences based on individual significant model paths), and there was a lack of support for hypotheses of Aim 2. Given the prolific increase in social media use over the past decade (Kross et al., 2021; Moretta et al., 2023) as well as the emerging research identifying potential new risks social media use may have on health behaviors (Boyle et al., 2017; Hormes, 2014; LaBrie et al., 2021), this study aimed to clarify *how* social media use (i.e., motives behind its use rather than frequency of use) is related to drinking behaviors among college students, who are an at-risk population to increased alcohol-related consequences (Hingson et al., 2017; Patrick et al., 2020).

Aim 1

Hypothesis 1-2: Social Media Escapism Motives, Emotional Consequences, and Emotional Distress

For the first aim, which consisted of three hypotheses, results supported the first two hypotheses and partially supported the third hypothesis. Greater levels of using social media for escapism motives (e.g., to forget about one's worries) was related to experiencing greater negative emotional consequences from social media, and consequences were then related to

greater emotional distress. These findings align with the Multidimensional Model of Social Media Use (Yang et al., 2021), postulating that using social media for compensatory motives (i.e., escapism, relationship formation, FOMO) or to alleviate oneself from a real-life detriment can lead to negative outcomes. The Model of Compensatory Internet Use (Kardefelt-Winther, 2014) can also be applied to these findings as it was created to shift the perspective of maladaptive internet use from a purely "addictive" perspective to focusing on the more underlying reasons for why individuals are using the internet that can impair certain problems not always related to addiction. Students who are using social media as a form of escapism to try to alleviate negative emotions may conversely experience greater levels of negative emotional responses from social media partly due to *why* they chose to use social media in the first place. This ultimately may exacerbate rather than alleviate levels of emotional distress.

Literature examining the relationship between social media use and emotional distress remains mixed (Kross et al., 2021; Michikyan et al., 2023; Nesi et al., 2021; Rideout & Fox, 2018; Valkenberg, 2021) and underscores how complex this relationship is. For instance, with a sample including college-aged individuals, a report found teens and young adults (ages 14-22 years old) with moderate to severe depressive symptoms did not have different levels of engagement with social media use compared to their peers who do not experience depressive symptoms (Rideout & Fox, 2018). These findings by Rideout & Fox (2018), and also supported by other studies (Bennett et al., 2020; Berryman et al., 2018; Rasmussen et al., 2020), suggest frequency of use to is not as explanatory of an element for emotional distress. This report also found individuals with greater depressive symptoms were more likely to use social media to feel less lonely, to prefer to communicate on social media instead of in-person, and to have more negative experiences on social media than their peers (Rideout & Fox, 2018). It appears

individuals may have different motives to use social media that may be partly related to their pre-existing levels of emotional distress, such as depressive symptoms, and could be related to their experiences on social media. It could be students who are already experiencing higher levels of emotional distress, such as greater depressive symptoms, may be more likely to engage in social media for compensatory motives, such as escapism, thus leading to more negative emotional responses than those who are not as emotionally distressed (Rideout & Fox, 2018), which may then worsen their levels of distress as suggested by the current study. However, it was also indicated in the report (Rideout & Fox, 2018) that more individuals with depressive symptoms who used social media when they are feeling depressed, anxious, or stressed reported that it made them feel better (30%) rather than feel worse (22%). One potential explanation could be using social media for compensatory purposes similar to coping (e.g., to feel less lonely, to forget about one's worries, for mood regulation) can provide some temporary relief for some individuals, but not a long-term solution, and this temporary relief prevents them from engaging in a more adaptive form of mood regulation. Evidence from the current study indicate there to be a positive association between escapism motives and negative emotional consequences, or responses from social media use, as well as between emotional consequences with emotional distress as posited by the Multidimensional Model of Social Media Use (Yang et al., 2021). Motives of social media use may contribute to explaining why some people are emotionally harmed by or benefitted from their social media use. These findings contrast those of a study that prospectively assessed emotional responses from social media use and how it relates to depressive symptoms (Nesi et al., 2021). Researchers found higher levels of depressive symptoms to precede and be related to more frequent negative emotional responses to social media use over time, but the same was not true in the reverse direction (i.e., negative emotional

responses to social media use did not precede depressive symptoms) as may be interpreted in the present study. An alternative explanation could be that the direction of the relationship is reversed or bidirectional, and emotional distress may precede SMUM and/or emotional consequences from SMU. Being in a heightened state of emotional distress in-the-moment may lead individuals to use social media as a short-term or temporary solution to relieving any negative emotions as supported by the findings from Nesi et al. (2021). This type of directionality is also supported by the Model of Compensatory Internet Use (Kardefelt-Winther, 2014) and the Multidimensional Model of Internet Use (Yang et al., 2021) as the compensatory-related motive of social media users may be a result of the social media user's pre-existing state of distress. Nesi et al. (2021) used a prospective research study design, which is more informative regarding causality than the cross-sectional design used in the current study, which cannot establish temporality. Unlike the present study, researchers examined adolescents instead of college students and did not assess motives of social media use as a potential variable of interest that could be related to depressive symptoms. Nonetheless, findings from the present study add to the scant literature examining the relationship between SMUM, a factor supported by nascent research in this area, and indicators of emotional distress among the college student population.

Although there is little research overall that has examined the effects of escapism or maladaptive SMUM on indicators of emotional wellbeing, there has been a recent increase in research interested in the effects of why individuals use social media (beyond frequency of use). Despite the focus of these recent studies being COVID-19 pandemic-related issues (Michikyan et al., 2023; Moretta et al., 2023; Sun et al., 2023; Thygesen et al., 2022), some of the formative work in this area was conductive prior to the pandemic (van Ingen et al., 2016; Marino et al.,

2018). Pre-pandemic studies have indicated individuals may use social media to cope with negative life events (van Ingen et al., 2016), and that using social media for coping motives may be associated with problematic social media use (Marino et al., 2018). Findings by Marino et al., (2018) are corroborated by a recent post-pandemic longitudinal study that used similar methods of assessing problematic SMU and SMUM following the traditional addictive framework often used in substance use research (i.e., coping, conformity, enhancement, social; Moretta et al., 2023). Participants (general adults) with higher levels of COVID-19 pandemic-related stress had higher levels of problematic SMU and they used social media for more negative reinforcement (i.e., coping and conformity) as well as positive reinforcement (i.e., social and enhancement) motives. Further, coping SMU motives had the strongest association with problematic SMU. Escapism, such as a distraction from a stressor, can be viewed as a way to cope, which is not inherently maladaptive and can have positive short-term effects (Donnelly et al., 2016; Graves et al., 2021; Olsen et al., 2022; Rideout & Fox, 2018), but habitual or constant use of escapism can lead to more negative long-term effects on emotional well-being since the source of distress is not being effectively addressed (Donnelly et al., 2016; Jouhiki et al., 2022). Engaging in avoidance coping styles has also been found to be related to exacerbated levels of emotional distress (Doron et al., 2014; Mahmoud et al., 2012). Evidence suggests there are individuals who engage in social media use with the motive to cope with negative life events (van Ingen et al., 2016), such as the COVID-19 pandemic (Moretta, 2023), which may lead to negative outcomes. Marino et al. (2018) and Moretta et al. (2023) examined social media coping motives following a similar addictive framework, but only focused on how those motives are related to problematic social media use, rather than looking downstream at emotional distress and health behavioral outcomes as examined in the current study. Furthermore, researchers have argued the need to

move beyond the traditional addictive framework (Cataldo et al., 2022; Kardefelt-Winther, 2017; Moretta et al., 2022) as done by both studies.

Cross-sectional social media motives research conducted post-pandemic indicates increased COVID-19 related distress (Sun et al., 2023; Michikyan et al., 2023) and general poorer mental health (Thygesen et al., 2022) were related to engaging in social media for compensatory motives, such as to cope (e.g., mental disengagement; Sun et al., 2023; to alleviate negative emotions; Michikyan et al., 2023) or to decrease loneliness (Thygesen et al., 2022), especially for members of younger populations (Sun et al., 2023; Thygesen et al., 2022), including college students (Michikyan et al., 2023). Results from these pandemic-related studies corroborate the need to focus on college-aged individuals, as they may be a key population to investigate maladaptive SMUM moving forward. However, results by Michikyan et al. (2023) indicated using social media to cope could also be beneficial to college students' mental health (i.e., fewer depressive symptoms and higher life satisfaction), again highlighting the complexities of social media and psychological well-being, which may be highly dependent on how social media platforms are being used and why.

Although there has been a greater focus on explicating mechanisms of social media use and their effect on well-being, a majority of recent research on SMUM have only assessed COVID-19-specific distress or uses data collected during the pandemic (Michikyan et al., 2023; Moretta et al., 2023; Sun et al., 2023; Thygesen et al., 2022). Findings from the current study confirm motives of social media may be an important mechanism to consider when examining the effects of social media on aspects of emotional well-being even after the peak of the COVID-19 pandemic. My findings suggest motives of social media have links to negative emotional responses and state of emotional distress, and certain individuals may be at greater risk to

experiencing the negative effects of social media. Yet, few studies have further examined how social media use may be indirectly related to specific health behaviors, such as alcohol use as this study has tested.

Hypothesis 3: SMUM, Emotional Distress, and Alcohol Outcomes

Students who reported greater emotional distress experienced greater alcohol-related consequences than students who had lower distress levels, but emotional distress was not associated with level of alcohol consumption (i.e., quantity and frequency). These findings align with previous literature indicating aspects of poorer emotional well-being (e.g., negative affect or mood; Simons et al., 2005; Stevenson et al., 2019; depressive symptoms or perceived stress; Acuff et al., 2018; Sebena et al., 2012; emotion regulation difficulties; Dvorak et al., 2014) to be related to alcohol-related consequences as well as not being related to alcohol consumption (Emery & Simons, 2020; Tovmasyan et al., 2022). Evidence suggests individuals with increased levels of emotional distress report experiencing more alcohol-related consequences, regardless of how much they have drunk. It could be, although not consuming more, these individuals may consume alcohol in such a way as to experience more problems (e.g., one individual spaces four drinks out throughout the night [over four hours or more], whereas another individual quickly consumes them same number of drinks to experience a greater level of drunkenness). Furthermore, endorsing greater escapism motives of social media use was not found to be significantly indirectly related to alcohol-related consequences, but mechanisms linking SMUM to greater alcohol-related consequences (i.e., via negative emotional consequences from social media use and overall emotional distress) were significant and positive. Results imply engaging in maladaptive motives of social media, specifically escapism motives, may play a contributing role in identifying who is at greater risk of reporting alcohol-related consequences through its

relation with emotional distress. College students experiencing one or more mental health problems has nearly doubled in the past decade (Lipson et al., 2022). In addition to the growing concern of how social media may be influencing the mental and emotional state of college students, more research is warranted, especially in identifying the mechanisms of how social media may be shaping certain health behaviors. Although there is an emergent body of research focusing on how social media is related to alcohol behaviors through alcohol-related content, or posts made on social media that involve alcohol (see Curtis et al., 2018 and Strowger & Braitman, 2022 for reviews), there remains a gap in how SMUM may be related to alcohol behaviors via indicators of emotional distress.

Although few longitudinal examinations have linked SMU (e.g., SMU frequency; LaBrie et al., 2021; types of SMU engagement; Oksanen et al., 2021) or problematic online behaviors (among adolescents; Gámez-Guadix et al., 2015; among general population; Jouhki et al., 2022) to problematic alcohol-related behaviors, this is the first study to have examined how motives of SMU may be related to alcohol behaviors among college students. Despite not assessing specifically social media, a longitudinal examination of the general population indicated escapism, excessive drinking, and psychological distress independently predicted greater problematic internet use within person (Jouhki et al., 2022). Authors suggested escapism as the key driver to engaging in certain behaviors with avoidance motives, which may play a role in developing problematic behaviors (Jouhki et al., 2022) according to Escape theory (Donnelly et al., 2016). Although Escape theory posits materialistic people engage in activities via materialism (i.e., consumption of tangible objects) as a form of escapism to suppress in-the-moment thoughts of excessive self-awareness (e.g., feeling inadequate; Donnelly et al., 2016), evidence suggests this may also be applied to other non-materialistic escapist behaviors, such as

online behaviors (Jouhki et al., 2022). Escape-avoidance coping style (e.g., applying behavior disengagement when faced with stress; Poprawa et al., 2019) has been found to be related to other dysfunctional behaviors, such as alcohol consumption and using the internet/media to cope (Poprawa et al., 2019) in addition to poorer emotional well-being (Doron et al., 2014; Mahmoud et al., 2012). There is evidence suggesting dysfunctional online-related behaviors may be linked to alcohol behaviors in both directions (Gámez-Guadix et al., 2015; Jouhki et al., 2022), but there is very limited research focusing on how motives of social media use, rather than general internet use (Gámez-Guadix et al., 2015; Jouhki et al., 2022) or frequency of SMU (LaBrie et al., 2021), is related to alcohol-specific behaviors among college students. Based on findings from the current study, it could be that certain behaviors, such as social media use, may manifest as a result of individuals who primarily rely on escapism to avoid real-life stressors or internal feelings of inadequacy as posited by Escapism theory (Donnelly et al., 2016) and supported by the findings of Poprawa et al. (2019). In other words, individuals with higher escapism-trait may be at greater risk of experiencing alcohol-related consequences as a result of escapism SMU further impairing their emotional well-being. This may put them at greater risk of exacerbating their current state of emotional distress if they are already in a state of distress (hence why they engage in social media with escapism intent; Yang et al., 2021), which may lead them to engage in more problematic alcohol use, regardless of their alcohol consumption levels, due to their levels of emotional distress (Acuff et al., 2018; Dvorak et al., 2014; Sebena et al., 2012; Simons et al., 2005). Taken together, research examining SMU (unrelated to alcohol-related content on social media) in conjunction with alcohol behaviors is slowly emerging, but this is the first study to have identified a potential sequential relationship between motives of SMU and alcohol-related consequences via indicators of emotional distress. Literature on SMU and emotional

distress remains largely mixed, but findings of the current study expand this examination to demonstrate how motives (beyond SMU frequency) can be a factor to consider in understanding who may be negatively impacted by their SMU and how this may be related other risky behaviors related to their well-being.

Aim 2

Hypothesis 4 and 5: Moderation of Internal Drinking Motives on Emotional Distress and Alcohol Outcomes

Internal drinking motives, drinking to cope and drinking to enhance, failed to significantly moderate the association between emotional distress and alcohol outcomes. Literature examining how emotional or psychological distress is related to alcohol problems and consumption via drinking motives (i.e., the most proximal step before alcohol outcomes in models of mediation) has yielded fairly consistent findings (Bravo et al., 2016; de Leon et al., 2020; Kenney et al., 2013; Merrill et al., 2014), but remains mixed when examined as a moderator (Armeli et al., 2010; Dora a et al., 2022; Grant et al., 2007; Holahan et al., 2001; Mulligan et al., 2016; O'Hara et al., 2014; Wycoff et al., 2020). Main effects from drinking to cope were significantly and positively related to alcohol-related consequences, quantity, and frequency. Therefore, students who had higher endorsement of drinking to cope as their motive for drinking reported greater alcohol-related consequences as well as higher quantities of alcohol and more frequent drinking in the past 90 days. These findings are supported by previous studies among college students demonstrating consistent associations between drinking to cope and alcohol-related consequences specifically (Bravo et al., 2016; Bresin & Mekawi, 2020; Cook et al., 2020; Read et al., 2003). When looking at alcohol consumption outcomes, some prior studies have found support for this association (among young adults; Allen et al., 2020; Martins et al.,

2018; among college students; Merrill & Read, 2010) but others have not (Cook et al., 2020; O'Hara et al., 2014; Waddell et al., 2022). For instance, Cook et al. (2020) and Waddell et al. (2022) did not find coping motives to predict alcohol consumption within- or between-person among samples of mostly college students in a longitudinal examination, but coping motives were directly related to alcohol-related consequences as also suggested by the current study. Drinking to enhance was similarly not found to be a significant moderator in the current study but was significantly related to reporting higher alcohol-related consequences, quantity, and frequency. Findings are mostly supported in the literature; drinking to enhance is a robust predictor of greater alcohol consumption (Bresin & Mekawi, 2020; Cooper et al., 2016). Drinking to enhance, as a mediator (Kenney et al., 2013) and a moderator (Armeli et al., 2010), has been linked to symptoms of poor mental health (i.e., depression, anxiety, stress; Kenney et al., 2013; anxiety; Armeli 2010) leading to greater levels of alcohol consumption and alcohol problems, although research is limited for these associations. Results from the current study suggest effects of emotional distress on alcohol outcomes do not depend on levels of drinking to cope or to enhance (or vice versa). Further, indirect effects became significant and negative between escapism SMUM and all alcohol outcomes in model 2 and with only alcohol-related consequences in model 3 after controlling for drinking motives (i.e., at average drinking to cope or enhance levels) and their interaction with emotional distress (contrasting to the significant positive individual model paths providing support for Hypothesis 3 in model 1 without these predictors). However, given how these relationships were largely not significant in the first model examining mediation (without controlling for drinking motives and their interaction), it can also likely be concluded that there is not a significant relationship.

Partially in contrast to motivational theories of alcohol use (Cooper et al., 1995; Cox & Klinger, 1988) often used in alcohol research, all interactions were statistically non-significant in the current examination. A meta-analysis (Dora et al., 2022) also did not find self-reported trait-level drinking to cope to serve as a significant moderator between the association of daily-level affect (within-person) and alcohol outcomes; although the predictors were different (between-person differences in emotional distress in the current study and within-person differences in negative affect in the meta-analysis), both studies suggest internal drinking motives do not moderate the association between emotions and drinking. Very few studies have found internal drinking motives as a trait to be a significant moderator (regardless of direction), but Armeli et al. (2010) reported significant moderation effects using a daily-affect model design in one part of their study where drinking to cope was treated as a stable trait and affect was assessed at a daily-level. Contrary to hypotheses, a two-way interaction indicated drinking to cope as a moderator was related to *less* drinking during periods of relatively high daily negative affect among college students, whereas drinking for social enhancement motives was related to having a positive relationship between negative affect and drinking frequency. As suggested by Dora et al. (2022), and that can be applicable here as well, individual's self-reported drinking motives at baseline (i.e., trait-level) may not be an accurate representation of the in-the-moment decision making process to drink but is rather a more general mental model of their drinking experiences. These experiences may include and be influenced by being in a social context or reporting a selective recall of an instance one drank as well as the feelings after, but not the internal reason that made an individual decide to drink before. Indeed, Armeli (2010) found depressive affect (assessed retrospectively instead of daily) to be related to *greater* drinking quantity for those having high-trait drinking to cope but this interaction was contingent upon having low-trait drinking for

social-enhancement motives (i.e., a three-way interaction). These findings slightly differ compared to the daily-level affect models from the same study (i.e., a two-way interaction that suggested daily negative affect was related to *less* drinking as drinking to cope increased; Armeli, 2010), implying high-trait drinking to cope may be a risk factor to increased drinking for those with depressive symptoms only if they do not drink for social-enhancement reasons between-person. It could also be that these effects are true at the within-person level (i.e., affect explaining variability in day-to-day drinking decisions) rather than between-person level (i.e., explaining differences across individuals) given these mixed findings of affect's relationship with drinking outcomes dependent upon drinking motives. O'Hara et al. (2014) similarly did not find trait-level drinking to cope to moderate the relationship between episodic negative mood and drinking, as found by Dora et al. (2022), but greater daily negative affect (i.e., higher anxiety, anger, or sadness) was associated with greater drinking and a greater likelihood of reporting episodic drinking to cope. Findings suggest students who drank for coping purposes at an episodic level did not differ in how they reported levels of drinking to cope at baseline (i.e., trait-level), further underscoring the idea that these processes may operate more evidently at an episodic level rather than between person as assessed in the current study.

Inconsistent findings between trait and daily-level drinking motives are corroborated by a recent systematic review, with authors suggesting trait motives (i.e., reported at baseline) and EMA-reported motives may not be capturing the same construct (Votaw & Witkiewitz, 2021). Therefore, another potential explanation of the results of hypothesis 4 and 5 could be that contemporary drinking motives of college students are not being accurately captured by measures available and frequently used in research (Dora et al., 2022; King et al., 2023; O'Hara et al., 2014; Todd et al., 2004; Votaw & Witkiewitz, 2021). King et al. (2023) recently re-

examined the factor structure of drinking motives in young adults and identified social tension

(e.g., "To be more comfortable") as a new factor predictive of alcohol consumption.

Additionally, authors found a unique positive association between drinking to cope and alcohol

quantity that the DMQ-R (Cooper, 1994) did not show, as well as no association between

enhancement motives and alcohol-related consequences, of which the DMQ-R did demonstrate

(and was found in the current study). Mixed findings when examining internal drinking motives

as a moderator could suggest other elements may be at play as well, such as drinking context.

For example, in a study that found drinking to cope to be a significant moderator, students

reporting symptoms of social anxiety were more likely to engage in party drinking games if they

had higher levels of drinking to cope (Mulligan et al., 2016), potentially suggesting there to be an

influence of drinking context (i.e., being at a party or the social pressure of a drinking game).

Findings from the current study add to the literature examining internal drinking motives as a

moderator between aspects of emotional distress and drinking outcomes among college students,

signifying further investigation is needed by considering whether this is a within-person versus

between-person process, and identifying the best methods for assessing these motives among

college drinkers.

Despite being so ingrained into the daily lives of millions, the effects of social media

remain unclear, especially in *how* social media may be related to emotional and behavioral

health. Understanding motives of social media use can serve as a valuable avenue to aid in

determining why some users are being emotionally afflicted by their social media use as there

are also many benefits from social media (Naslund et al., 2020). Narrowing down individual

social media use patterns may be a fruitful approach to developing effective health interventions,

especially among impressionable social media users such as college students. In a recent study,

profiles of TikTok users were explored to further understand what motivates individuals to use TikTok (Gu et al., 2022). Researchers identified four profiles, including an escapist addiction motives profile of which was discussed to potentially not benefit from the positive aspects of TikTok (i.e., having socially rewarding self-presentation from using TikTok; Gu, 2022). Findings from this study and the current study suggest identifying profiles of social media users at greater risk of consequences to their emotional health may be a good way to identify who to intervene with (by informing social media users how to protect themselves as well as aid in shaping health interventions for these individuals; Gu et al., 2022). For example, exhibiting high escapist addiction tendencies characterized by high levels of escapism SMUM may be reflective of how individuals are engaging in problematic behaviors across other aspects of their lives. Helping individuals become aware of and address their escapist social media use behaviors (i.e., why are they using social media to escape in the first place) may aid in intervening with other health behaviors that were exacerbated by their maladaptive social media use (e.g., alcohol use). These individuals may benefit most from interventions designed to help them identify and use more adaptive coping mechanisms that provide long-term mood regulation skills. Social media has been used as a platform to administer health interventions (Naslund et al., 2020), but research is limited in regards to considering social media motives or user profiles as an element to tailor health interventions. Resources on college campuses may be able to aid students who are demonstrating symptoms of emotional distress by encouraging more mindful SMU habits if their use is identified as a potential source of distress.

Limitations and Future Direction

This is a cross-sectional study based on retrospective self-report data. As mentioned above, the nature of cross-sectional study designs is that directionality of associations among

variables cannot be inferred; longitudinal or EMA study designs can help to establish

temporality. Recall bias is also a possibility among self-report data, with participants being asked

to recall experiences from the past 90 days. It should be noted that self-reported past 90-day

recollection of alcohol consumption has demonstrated modest correlations compared to daily-

reported data methods (Searles et al., 2000), indicating retrospective self-report data is fairly

accurate to be examined in conjunction to other behaviors. Data collection occurred from

October 2022 to April 2023, and although data collection has taken place after the height of the

pandemic, with a majority of school functions having returned to normalcy, the pandemic has

had a large effect on college students (Nails et al., 2023) and their drinking patterns (Acuff et al.,

2022) potentially causing a History Effect among these data. Although power analyses were

performed prior to data collection to ensure a sufficient sample size, a larger sample size could

have detected a smaller effect. Additionally, the sample of college students used in the present

study were lighter drinkers (drinking less than twice a week on average and less than 5 drinks;

see Table 2). Findings may differ on a college campus with a more prominent drinking culture,

such as having a more traditional Greek life influence where one is surrounded by peers who

drink more heavily and more often (Reid et al., 2021). Given how nearly 80% of the sample

identified as female, and a majority of the sample identified as either Black (39.8%) or White

(53.4%), findings may not be generalizable to all college students or other races/ethnicities.

Racial and ethnic differences in alcohol behaviors have been examined in recent decades

(Gardner et al., 2020; Presley et al., 2002), but research is scant when examining racial

differences in social media related behaviors. Escapism tendencies (i.e., trait) as a potential distal

predictor or a moderator emerged as a relevant factor when relating our findings to the literature

but was not included in any models. It could be that students who have high escapism traits

would be more prone to using social media for escapism purposes and experiencing negative

emotional consequences from doing so. Pre-existing mental illness diagnosis was also not

included in models but may serve as a potential moderator between SMUM and outcomes. As

suggested by Rideout & Fox (2018), there are differences in experiences with social media

between individuals with moderate to severe depressive symptoms and those without.

Despite a recent spike in research beginning to assess SMUM, there has yet to be a

standard assessment of different motives. Future research should establish a common, validated

measure to assess various SMUM. Having an established measure would provide some unity in

the social media literature, especially with several studies still using older scales derived from

assessing Facebook-specific behaviors. This study only tested escapism motives of social media

use, but other motives may also have a potential negative or positive effect on problematic

alcohol outcomes. Therefore, identifying and differentiating mechanisms of social media use can

aid in designing interventions by considering using social media as a function to reduce

problematic alcohol use among college students. Social media is not inherently harmful, as there

are definitely benefits that have been reported (Michikyan et al., 2023; Rideout & Fox, 2018) and

it is often used as a resource for health information or purposes (Chen & Wang, 2021). Efficacy

of health interventions using social media as a medium may be improved if motives are better

understood. Further, EMA studies assessing daily SMUM and alcohol behaviors of college

students would also aid in elucidating directionality among variables. The literature examining

internal drinking motives as a moderator remains mixed and it is possible a new method of

assessing drinking motives may be warranted. Similar to trends of social media use regularly

changing, drinking behaviors among college students are changing as well. Students are

generally drinking less compared to 20 years ago (Schulenberg et al., 2020), and their primary

motives for drinking may be shifting as well, given the equivocality in recent research. Additionally, motives for drinking may differ across population or developmental period (e.g., young adult college students vs. older adults; Arnett, 2005; King et al., 2023).

CHAPTER V

CONCLUSION

This study examined the associations between SMUM, indicators of emotional distress, and alcohol outcomes among a college student population as well as test if drinking to cope and/or enhance moderated the effect of distress on alcohol outcomes. Results suggest using social media as a form of escapism may be related to increased levels of emotional distress and linked to alcohol-related consequences via these indicators, but not to alcohol consumption. Neither drinking to cope nor drinking to enhance moderated the relationship between emotional distress and alcohol outcomes, but both motives were directly related to greater alcohol-related consequences, quantity, and frequency. Literature examining drinking motives have become mixed in recent years, suggesting other elements may be at play, such as drinking context and method of assessing motives. Investigating profiles of social media users at greater risk of consequences to their emotional and behavioral health is a potential avenue of research that may help by not only by informing social media users how to protect themselves, but also as aid in shaping future health interventions for these individuals.

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APPENDIX A

STUDY DESCRIPTION FOR SONA RECRUITMENT

Research is emerging regarding the effects of social media use on health behaviors. The current study examines the associations between social media use and drinking behaviors among college students to contribute to the understanding of how social media use is related to drinking behaviors.

If you decide to participate, you will complete an online survey, lasting approximately 25-30 minutes. Questions in the online survey assess your social media and alcohol use behaviors, including related consequences, as well as emotional well-being, such as depression, stress, and anxiety.

APPENDIX B

INFORMED CONSENT DOCUMENT

OLD DOMINION UNIVERSITY

PROJECT TITLE: Maladaptive SMUM, emotional well-being, and drinking behaviors among college students

INTRODUCTION
The purposes of this form are to give you information that may affect your decision whether to say YES or NO to participation in this research, and to record the consent of those who say YES. The proposed research titled, "Maladaptive SMUM, emotional well-being, and drinking behaviors among college students" will all be conducted online.

RESEARCHERS
Rachel Ayala Guzman, BS, Graduate Student, Old Dominion University, Psychology Department, rayal001@odu.edu
Abby Braitman, Ph.D., Assistant Professor, Psychology Department, Old Dominion University, abraitma@odu.edu

DESCRIPTION OF RESEARCH STUDY
Several studies have been conducted looking into the subjects of risky drinking behaviors and social media use behaviors among college students. None of them have examined how social media use behaviors may indirectly affect drinking behaviors through emotional well-being (e.g., depression, anxiety, or stress).

If you decide to participate, then you will join a study involving assessment of your own health behaviors. If you say YES, then you will complete a computerized survey (approximately 25 to 30 minutes) assessing your current health behaviors, including alcohol and social media use behaviors, as well as aspects of your mental well-being. Approximately 330 of ODU students will be participating in this study.

EXCLUSIONARY CRITERIA
You must be between at least 18 years old but not older than 25 years old to be eligible for this study. You must also be a student at the host institution (Old Dominion University). You must have at least one active social media account you currently use.

RISKS AND BENEFITS
RISKS: If you decide to participate in this study, it is possible you may experience some discomfort answering questions regarding your behaviors and actions. If you would like to speak to someone at Counseling Services you may call 757-683-4401 or go to 1526 Webb Center. The research involves using a computer, so the risks involved with that are similar to typical computer use.

Additionally, identifying information will be collected from each participant. Alcohol use is illegal for individuals under 21, and so all efforts will be made to safeguard your information. Files with identifying information will be kept only on an encrypted external storage device, and that device will be kept in locked storage location when not in use. If you are using public computers owned and operated by ODU, there may be the possibility of institutional monitoring of your responses. And, as with any research, there is some possibility that you may be subject to risks that have not yet been identified.

BENEFITS: There are no direct benefits for participating in this study.

COSTS AND PAYMENTS
The researchers want your decision about participating in this study to be absolutely voluntary. Yet they recognize that your participation may pose some inconvenience and requires your time. In order to thank you for the time you spent completing the study, you will have the choice to either receive .5 Sona credits upon completion of the survey OR be entered in a lottery for a chance to win one out of five $20 Amazon gift cards.

NEW INFORMATION
If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY
All information obtained about you in this study is strictly confidential. The results of this study may be used in reports, presentations, and publications, but the researcher will not identify you. After data have finished being collected and analyzed, the files tying your name to your responses will be destroyed.

WITHDRAWL PRIVELAGE
It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study   at any time. Your decision will not affect your relationship with Old Dominion University, or otherwise cause a loss of benefits to which you might otherwise be entitled.

COMPENSATION FOR ILLNESS AND INJURY
If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in this research project, you may contact Rachel Ayala Guzman at rayal001@odu.edu or Dr. Tancy Vandecar-Burdin, the current IRB chair at 757-683 3802, or the Old Dominion University Office of Research, at 757 683 3460, who will be glad to review the matter with you.

VOLUNTARY CONSENT

If you have any questions about the study and would like them answered before you provide your consent, please click on the link below to schedule a brief Zoom meeting with the primary investigator, Rachel Ayala Guzman.
[insert link]

By typing your name at the end of this form, you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions now or in the future, please contact Rachel Ayala Guzman at rayal001@odu.edu.

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. Tancy Vandecar-Burdin, the current IRB chair, at 757 683 3802, or the Old Dominion University Office of Research, at 757 683 3460.

And importantly, by typing your name below, you are telling the researcher YES, that you agree to participate in this study.

Your name: _____
You may choose to print a copy of this page for your own record

APPENDIX C

SOCIAL MEDIA USE MOTIVES

Instructions:
We want to know why you are using social media. Please indicate how strongly you agree with each of the following reasons. I use social media…

(1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Neutral, 5 = Somewhat Agree, 6 = Agree, 7 = Strongly Agree)

Escape motivation
To feel less lonely
To fill uncomfortable silence
To make myself feel better when I feel down
To forget about schoolwork or work
To get away from others
To forget about worries and concerns

Relationship motivation
To feel closer to family and friends
To improve relationships with friends and family
To let others know you care for them

APPENDIX D

EMOTIONAL CONSEQUENCES FROM SOCIAL MEDIA USE

Instructions:
When you use social media, how often do you…

5-point Likert scale from 1 = Never to 5 = Always

…feel you can express yourself creatively
…feel hurt by a negative comment from someone
…feel more connected with your friends
…feel less alone
…feel left out or excluded
…feel supported and encouraged by your friends
…feel bad about getting too few likes or comments on your posts/photos
…feel pressure to show the best version of yourself
…feel happy because of a positive comment from someone
…feel like other people are doing better than you

APPENDIX E

DESPRESSION ANXIETY STRESS SCALE-21

Instructions:
Please read each statement and indicate how much the statement applied to you over the past 3 months. There are no right or wrong answers. Do not spend too much time on any statement.

0 = Did not apply to me at all, 1 = Applied to me to some degree, or some of the time, 2 = Applied to me to a considerable degree or a good part of time, 3 = Applied to me very much or most of the time

I found it hard to wind down
I was aware of dryness of my mouth
I couldn't seem to experience any positive feeling at all
I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)
I found it difficult to work up the initiative to do things
I tended to over-react to situations
I experienced trembling (e.g. in the hands)
I felt that I was using a lot of nervous energy
I was worried about situations in which I might panic and make a fool of myself
I felt that I had nothing to look forward to
I found myself getting agitated
I found it difficult to relax
I felt down-hearted and blue
I was intolerant of anything that kept me from getting on with what I was doing
I felt I was close to panic
I was unable to become enthusiastic about anything
I felt I wasn't worth much as a person
I felt that I was rather touchy
I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)
I felt scared without any good reason
I felt that life was meaningless

APPENDIX F

DRINKING MOTIVES

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

1 = almost never/never, 2 = some of the time, 3 = half of the time, 4 = most of the time, 5 = almost always/always

To forget your worries.
Because your friends pressure you to drink.
Because it helps you to enjoy a party.
Because it helps you when you feel depressed or nervous.
To be sociable.
To cheer up when you are in a bad mood.
Because you like the feeling.
So that others won't kid you about not drinking.
Because it's exciting.
To get high.
Because it makes social gatherings more fun.
To fit in with a group you like.
Because it gives you a pleasant feeling.
Because it improves parties and celebrations.
Because you feel more self-confident and sure of yourself.
To celebrate special occasions with friends.
To forget about your problems.
Because it's fun.
To be liked.
So you won't feel left out.

APPENDIX G

DAILY DRINKING QUESTIONNAIRE

Instructions: The following questions are about your alcohol use. For all questions that ask, standard drinks will be equal to roughly 14 grams of pure alcohol, which is found in:
- 12 oz of hard seltzer at 5% alcohol
- 12 oz of regular beer at 5% alcohol
- 8-9 oz of craft beer at about 7% alcohol
- 4-5 oz of wine at about 13% alcohol
- 1.5 oz of liquor in a mixed drink at 40% alcohol
- 1.5 oz of 80 proof liquor at 40% alcohol

The following questions refer to your alcohol use in the past 3 months.

On a *typical Monday…*
how many drinks do you have? (drop down 0-30+)
how many hours typically pass while you are drinking? (0-24)

On a *typical Tuesday…*
how many drinks do you have? (drop down 0-30+)
how many hours typically pass while you are drinking? (0-24)

On a *typical Wednesday…*
how many drinks do you have? (drop down 0-30+)
how many hours typically pass while you are drinking? (0-24)

On a *typical Thursday…*
how many drinks do you have? (drop down 0-30+)
how many hours typically pass while you are drinking? (0-24)

On a *typical Friday*…
how many drinks do you have? (drop down 0-30+)
how many hours typically pass while you are drinking? (0-24)

On a *typical Saturday*…
how many drinks do you have? (drop down 0-30+)
how many hours typically pass while you are drinking? (0-24)

On a *typical Sunday*…
how many drinks do you have? (drop down 0-30+)
how many hours typically pass while you are drinking? (0-24)

Think of the one day you consumed the most alcohol in the past month. How many standard drinks did you consume that day? [dropdown menu; range from 0-30+ drinks]

On this heaviest drinking day, approximately how many hours passed from the beginning of the first drink to the finishing of the last? [dropdown menu; range from 0-24]

How many days in the past month did you have difficulty remembering things you said or did or events that happened while you were drinking? [dropdown menu; range from 0-30+]

How many days in the past month did you pass out during or after drinking? [dropdown menu; range from 0-30+]

APPENDIX H

BRIEF YOUNG ADULT ALCOHOL CONSEQUENCES QUESTIONNAIRE

Instructions: Below is a list of things that sometimes happen to people either during, or after they have been drinking alcohol. Next to each item below, please check each box to indicate whether that item describes something that has happened to you IN THE PAST 3 MONTHS.

In the past 3 months...

1. While drinking, I have said or done embarrassing things.
2. The quality of my work or schoolwork has suffered because of my drinking.
3. I have felt badly about myself because of my drinking.
4. I have driven a car when I knew I had too much to drink to drive safely.
5. I have had a hangover (headache, sick stomach) the morning after I had been drinking.
6. I have passed out from drinking.
7. I have taken foolish risks when I have been drinking.
8. I have felt very sick to my stomach or thrown up after drinking.
9. My drinking has created problems between myself and my boyfriend/girlfriend/spouse, parents, or other near relatives.
10. I have spent too much time drinking.
11. I have not gone to work or missed classes at school because of drinking, a hangover, or illness caused by drinking.
12. I have felt like I needed a drink after I'd gotten up (that is, before breakfast).
13. I have become very rude, obnoxious or insulting after drinking.
14. I have woken up in an unexpected place after heavy drinking.
15. I have found that I needed larger amounts of alcohol to feel any effect, or that I could no longer get high or drunk on the amount that used to get me high or drunk.
16. I have neglected my obligations to family, work, or school because of drinking.
17. I often have ended up drinking on nights when I had planned not to drink.
18. When drinking, I have done impulsive things that I regretted later.
19. I have often found it difficult to limit how much I drink.
20. My drinking has gotten me into sexual situations I later regretted.
21. I've not been able to remember large stretches of time while drinking heavily.
22. My physical appearance has been harmed by my drinking.
23. I have been overweight because of drinking.
24. I have had less energy or felt tired because of my drinking.
25. None of the above.

APPENDIX I

DEMOGRAPHICS

What is your age in years (e.g., 18)? [fill in blank]

Are you currently a student at Old Dominion University?
□ Yes
□ No

What is your current standing?
☐ Freshman
☐ Sophomore
☐ Junior
☐ Senior

What is your race race/ethnicity:
☐ Hispanic or Latino or Spanish Origin of any race
☐ American Indian or Alaskan Native
☐ Asian
☐ Native Hawaiian or Other Pacific Islander
☐ Black/African American/
☐ Middle Eastern or North African (MENA)
☐ White
☐ Two or more races
☐ Prefer not to answer

What sex were you assigned at birth, on your original birth certificate?
□ Female
□ Male
(Don't know)
(Prefer not to answer)

What is your current gender? [Mark only one]
□ Female
□ Male
□ Transgender
□ Non-binary
□ [If respondent is AIAN:] Two-Spirit
□ I use a different term: [free text]
(Don't know)
(Prefer not to answer)

Which of the following best represents how you think of yourself? [Select ONE]:
☐ Lesbian or gay
☐ Straight, that is, not gay or lesbian
☐ Bisexual
☐ [If respondent is AIAN:] Two-Spirit
☐ I use a different term [fill in blank]
(Don't know)
(Prefer not to answer)

What is your employment status?
☐ Full-time
☐ Part-time
☐ Unemployed
☐ Self-employed
☐ Other [free text]

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EDUCATION

Old Dominion University, Norfolk VA   expected 2023
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Thesis: *Maladaptive social media use motives, emotional well-being, and drinking behaviors among college students*
Faculty advisor: Abby Braitman, Ph.D.

California Lutheran University, Thousand Oaks, CA   2021
Bachelor of Science, *Cum Laude*
Major: Psychology; Minor: Sociology
Faculty advisor: Jodie Kocur, Ph.D.

BACKGROUND

Rachel Ayala Guzman is currently a 3rd year in the Health Psychology doctoral program at Old Dominion University. Her current research focuses include studying health behaviors among emerging adults, particularly how and why college students may be engaging in risky behaviors (e.g., using alcohol) in relation to their emotional and psychological well-being. She is also interested in examining psychosocial factors that play a role in existing health disparities among racial minority and at-risk young adult populations such as by integrating the examination of the intersectionality between race and gender.

SELECTED PUBLICATIONS

Ayala Guzman, R., Bolts, O. L., Shipley, J. L., Strowger, M., Braitman, A. L., Prince, M. A. (under review). A cross-sectional examination of race, gender, and intersectionality on protective health behaviors and alcohol outcomes among Black and White college students. *Experimental Clinical Psychopharmacology.*

Ayala Guzman, R., Strowger, M., Kazlauskaite, K., Braitman, A. L. (in progress). Fear of missing out serially mediated by social media use and alcohol-related content on alcohol outcomes among college students cross-sectional examination.

Braitman, A. L., **Ayala Guzman, R.,** Strowger, M., Shipley, J. L., Glenn, D. J., Junkin, E., Whiteside, A., Lau-Barraco, C. (accepted). The impact of COVID-19 pandemic experiences on college drinking via mental distress: Cross-sectional moderated mediation by race. *Alcohol: Clinical and Experimental Research.*