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The Roles of Alcohol Use and Sleep Quality on the Relationship between Fear of Missing out and Intimate Partner Violence

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I am submitting herewith a dissertation written by Hannah Grigorian entitled "The Roles of Alcohol Use and Sleep Quality on the Relationship between Fear of Missing out and Intimate Partner Violence." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

Gregory L. Stuart, Major Professor

We have read this dissertation and recommend its acceptance:

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Dixie L. Thompson

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)
The Roles of Alcohol Use and Sleep Quality on the Relationship between Fear of Missing out and Intimate Partner Violence

A Dissertation Presented for the Doctor of Philosophy Degree
The University of Tennessee, Knoxville

Hannah Grigorian
May 2022
ABSTRACT

Intimate partner violence (IPV) is a significant societal problem with many associated consequences. One unidentified risk factor for IPV perpetration may be the fear of missing out (FOMO) or the specific anxiety resulting from perceived exclusion from socially rewarding experiences. FOMO may threaten needs related to belonging, foster a hostile cognitive bias, and increase one’s proclivity toward violence. FOMO was consistently related to alcohol use and consequences among undergraduate students. The current study replicated and extended past findings by examining bivariate associations between FOMO, alcohol use, and IPV as well as a hypothesized mediation model in which FOMO positively associated with IPV through alcohol use. Additionally, sleep impairment may enhance the myopic effects of alcohol use on IPV, increasing the likelihood for instigation while decreasing inhibition. Therefore, I hypothesized that sleep quality would moderate the relationship between alcohol use and IPV. Analyses of a cross-sectional sample of 585 undergraduate students showed a positive association between FOMO, psychological IPV, and alcohol use. Further, FOMO positively associated with psychological and physical IPV through alcohol use. However, findings did not support the hypothesis that clinical sleep impairment would moderate the path from alcohol use to IPV. This study is the first to delineate the relationship between FOMO and IPV and holds implications for alcohol use and IPV interventions on college campuses. Future research should develop temporal models (e.g., daily diaries) of these constructs in an effort to better inform prevention and intervention efforts.
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Intimate partner violence (IPV) is a detrimental public health problem with high prevalence and severe consequences. The Centers of Disease Control (CDC) broadly defined IPV to include all violent acts and coercive tactics perpetrated within intimate relationships across a variety of domains (e.g., physical and psychological violence.; Breiding, Basile, Smith, Black, Mahendra, 2015). Intimate relationships include a wide range of partnerships marked by one or more identifying factors of emotional connectedness, regular contact, identifying as a couple, and increased familiarity. However, cohabitation and marriage are not requirements of IPV. Physical and psychological aggression in intimate relationships cover a variety of different acts. Physical IPV encompasses any act perpetrated against an intimate partner that uses intentional physical force. While this force has the potential to harm, injury is not a requirement of physical IPV. Examples of physical IPV include grabbing, slapping, and choking. Psychological aggression encompasses all acts of communication (verbal or nonverbal) expressed with the intent to harm their partner emotionally or exert control over their actions (Breiding, et al., 2015).

Definitional, methodological and sample differences across studies have resulted in varied IPV prevalence rates (Shorey et al., 2008). Reviews of IPV literature have suggested that 20-37% of college students reported experiencing physical IPV and 72-90% reported psychological IPV victimization (Black, 2011; Shorey et al., 2008). Additionally, the CDC defines the period from age 18-24 as a high-risk time for IPV, indicating that most men and women experience IPV before or during this time (Breiding, 2015; Sugg, 2015). As such, emerging adult and typical college populations experience increased risk.
Consequences surrounding IPV victimization are numerous and highlight the necessity of addressing high prevalence rates and associated risk factors. In a 2012 national report of IPV in the United States, 26% of women and 10% of men reported negative life impacts as a result of experiencing IPV (Smith et al., 2017). Negative consequences for victims of physical and psychological IPV include chronic physical and mental illness, substance misuse, and increased risk for injury (Coker et al., 2002). Victims of IPV were also less likely to engage in health-maintenance behaviors such as regular checkups with a physician (Breiding et al., 2008). Consequences of IPV also include a high economic impact. Substantial costs are associated with victim’s increased medical costs, loss of productivity, and needs within the criminal justice system. Large-scale data analyses have indicated the cost of IPV across a victim’s lifetime to be $103,767 for women and $23,414 for men (Peterson et al., 2018). As such, IPV is a prevalent and detrimental social problem that may result in long-term health and economic consequences. The conditions and consequences surrounding IPV warrant increased investigation into preventing and intervening on IPV perpetration in high-risk groups, such as college students. One such risk factor that may be particularly salient in college populations is the Fear of Missing Out (FOMO) which researchers have not yet examined in violence literature.
CHAPTER TWO: LITERATURE REVIEW

FOMO

Marketing and consumer strategies were the first to delineate FOMO as a sociocultural phenomenon (Herman, 2000, 2018). As a psychological construct, FOMO centers around the need to be connected with the plans and actions of others (Przybylski et al., 2013). Extant literature defined FOMO as the associated anxiety or apprehension that can occur when an individual places focus on missing potentially rewarding experiences with others. This fixation on being “in the know” and included in core social experiences, is evidenced as a common experience among emerging adult and college populations (Milyavskaya et al., 2018). Additionally, FOMO is posited to be increasing in prevalence and relevancy with the rise of social media which emphasizes the public sharing of social connections and experiences (Ellison et al., 2007). This is one possible explanation for the relevancy of FOMO within college populations. In a nationally representative sample of 2079 adults surveyed online, FOMO was found to be more common in younger samples (Przybylski et al., 2013). Such findings speak to the importance of examining FOMO in college populations.

While empirical data on FOMO is scant, Self-Determination Theory (SDT) can conceptualize this construct. Within a SDT framework, an individual’s ability to self-regulate psychological experiences (e.g. anxiety) and behaviors is dependent on the fulfillment of 3 fundamental psychological needs: autonomy, competency, and relatedness (Deci & Ryan, 2008). Autonomy needs focus on agency, competency needs on perceived capability, and relatedness needs on the depth, quality, and quantity of interpersonal connections. Existing literature conceptualizes these needs as universal and applicable across a variety of cultures. As such, individuals are not theorized to have differing levels of these needs but varying contexts and
circumstances which enable or “thwart” these needs (Deci & Ryan, 2008). In fact, in a study examining FOMO in a sample of 1013 men and women, individuals who identified unsatisfied psychological needs (e.g. relatedness) were at higher risk for experiencing FOMO (Przybylski et al., 2013).

**FOMO and Aggression**

The need to belong is central to FOMO as a construct. In fact, neurobiological correlates of FOMO suggested that those higher in FOMO were more likely to seek approval and pay attention to areas of social inclusion (Lai et al., 2016). Further, social pain or distress may occur from the perceived or actual social exclusion from important social groups or close relationships (Eisenberger & Lieberman, 2004). This is posited to be an extension of attachment such that it is evolutionarily adaptive to experience distress when away from the support and safety of a caregiver (Eisenberger & Lieberman, 2004). Even when there is a high incentive to avoid inclusion (e.g. avoiding a financial burden), individuals will still report pain and lower need satisfaction when faced with social exclusion (Van Beest & Williams, 2006). This has salience for emerging adult populations as they are beginning to separate from primary caregivers while placing increased emphasis on peer groups for socialization and identity formation (Lam et al., 2014).

While research examining the link between FOMO and IPV is limited, existing literature clearly defined perceived rejection and social exclusion as risk factors for the perpetration of aggression (Abrams et al., 1996). DeWall and colleagues posited that perceived social rejection may foster a hostile cognitive bias such that the exclusion is seen as antagonistic and reacted to defensively (2009). Consistent with their hypothesis, when tested within a laboratory aggression paradigm, the perception of social exclusion predicted the misinterpretation of neutral stimuli as
aggressive (DeWall et al., 2009). Social exclusion predicted aggression toward both the perceived threat and neutral participants during such experiments and hostile cognitive bias following manipulated exclusion was found to increase aggression perpetration (DeWall et al., 2009; Twenge et al., 2001). Therefore, it is plausible that FOMO may relate to aggression through threats to belonging or perceived social exclusion. However, studies have not examined FOMO in the context of IPV.

**FOMO and Alcohol Use**

Consistent with SDT, individuals with unsatisfied psychological needs, and relatedly high FOMO, may also seek alternative ways to fill these needs (e.g., seeking socially rewarding experiences). When facing exclusion, individuals were more likely to make attempts to reconnect or strengthen social bonds (Maner et al., 2007). Such inclinations may make engagement in risky behavior more likely. For instance, those high in FOMO may engage in increased or problematic drinking patterns (e.g. Przybylski et al., 2013). One such study examined the relationship between FOMO and daily drinking patterns and consequences among 262 college students over the course of 13 days (Riordan et al., 2015). Assessment of drinking patterns included the number of weekly drinks, drinking frequency, and the quantity of alcohol consumed. To reduce the likelihood of reports during periods of intoxication, surveys were only available from 3-8 pm. Students higher in FOMO drank 1.5 times more during periods of alcohol consumption. Additionally, those higher in FOMO evidenced more frequent negative consequences related to alcohol-use. Specifically, those higher in FOMO reported 6.6 negative consequences over the past 3 months, while those low in FOMO only reported 3.2 incidents (Riordan et al., 2015).
Several psychological, environmental, and cohort-specific factors may drive the relationship between FOMO and alcohol use among college students. First, being high in FOMO may affect the perception of peer pressure to drink. In a study of undergraduate students, researchers found that the path from peer pressure to alcohol consumption was stronger for individuals who reported unsatisfied psychological needs as defined by SDT (e.g. poor autonomy; Knee & Neighbors, 2002). Therefore, those who experience high FOMO may perceive peer pressure more intensely and succumb to drinking more frequently. Second, motivation patterns central to high FOMO may increase alcohol consumption. For instance, those high in FOMO may be more driven by social motives to conform with peers. Consistent with this, in a sample of 399 college students, social modeling, peer pressure (social influence), and perceived social norms associated with elevated alcohol use (Wood et al., 2001). In a separate sample, social camaraderie was cited as a primary motivator to drink and was associated with greater drinking (LaBrie et al., 2007). College students are also in an environment where alcohol consumption is common and more likely to be utilized as a social outlet or a focus of social events (Borsari & Carey, 2001; Thombs, 1995). As a result, those who are experiencing FOMO may be more likely to turn to drinking to ameliorate this experience. Finally, college students now are experiencing the increased relevancy and ubiquity of social media. Students frequently engage with social media to connect with friends and family and maintain connections at college (Subrahmanyam et al., 2008). In their study of 2079 adults aged 22-60, those high in FOMO engaged with social media more than those low in FOMO (Przybylski, 2013). Przybylski theorized that those high in FOMO may be aware of more alcohol-based social events as a result of their increased social media checking behaviors. All such factors may increase the likelihood and opportunities for college students high in FOMO to engage in alcohol use.
Alcohol Use and IPV

This connection between FOMO and alcohol use is concerning, in part, because of alcohol’s theoretical and empirical links to increased IPV perpetration (Foran & O’Leary, 2008). Several theories address alcohol-facilitated aggression. One of the most prominent theories is Alcohol Myopia Theory (AMT). Within AMT, alcohol use is posited to decrease one’s ability to effortfully control cognition (Steele & Josephs, 1990). As a result, individuals focus on the most salient environmental cues around them and have less access to other, more inhibiting cues that they may have access to while sober. Salient cues may include empirically identified triggers for alcohol-facilitated aggression including perception of threat, offense, and distress (McMurran et al., 2012). AMT indicates that, when intoxicated, such salient cues may become the primary attentional focus (Steele & Josephs, 1990). This makes instigation, and therefore violence, more likely.

Several empirical studies have evidenced support for AMT. For instance, narrowed attention and overlooked peripheral details in the presence of alcohol was demonstrated in a sample of 98 women who drink socially (Jaffe et al., 2019). Researchers assigned participants to either a high dose alcohol group, a low dose alcohol group, or a placebo group. Following this, the participants viewed a stressful film as a representation of a salient environmental cue and the investigators asked them to recall the details. Participants evidenced impairment consistent with AMT, such that the limited attentional capacity of intoxicated participants was used to focus on central themes of the film at the expense of peripheral details (Jaffe et al., 2019).

Focusing on these central details (salient cues) has the potential to increase or decrease aggression depending on the nature and interpretation of the cue itself (Giancola & Corman, 2007). For instance, in a laboratory aggression paradigm, alcohol-intoxicated participants were
more likely to perpetrate violence when exposed to cues that promote violence than alcohol-intoxicated participants who were presented with violence-inhibiting cues (Giancola et al., 2011). Additionally, research indicated that there may be an alcohol-facilitated cognitive bias toward aggression-promoting stimuli among male and female problematic drinkers with a history of IPV perpetration (Massa et al., 2019).

Findings that support the association between alcohol use and the perpetration of physical and psychological IPV are represented in cross-sectional, longitudinal, and experimental studies of violence and across sample types (e.g. clinical, community, college students; Crane et al., 2016; Moore et al., 2011; Shorey et al., 2014; Stuart et al., 2003). Cross sectional findings in multiple national samples indicated that incremental increases in drinking (e.g. each additional drink) and thresholds of hazardous drinking may increase the likelihood of IPV perpetration (O’Leary & Schumacher, 2003). Clinical samples demonstrated similar findings. In a sample of 150 men arrested for IPV and court-ordered to treatment, men engaging in alcohol misuse were more likely to be generally violent and perpetrated IPV at elevated severity rates (Stuart et al., 2003; Thomas et al., 2013).

Longitudinal examinations of men and women support these findings. Using timeline follow back procedures, 105 women court ordered to batterer intervention programs for the perpetration of IPV evidenced relatively more violence on days they were drinking and drinking heavily relative to nondrinking days (Stuart et al., 2014). Nonclinical, college samples evidenced similar findings that speak to the temporality of alcohol use and IPV perpetration (Moore et al., 2011; Shorey, Stuart, McNulty, et al., 2014). In a 90-day, daily examination of the drinking and violence patterns of college men, findings evidenced a temporal association between heavy drinking and increased odds of physical and psychological violence perpetration (Shorey, Stuart,
McNulty, et al., 2014). Similar findings were found in a previous study examining the drinking patterns of 184 men and women (Moore et al., 2011). Psychological and physical IPV perpetration were more likely to occur on drinking days and each additional drink increased the odds of perpetration for men and women (Moore et al., 2011).

Experimental studies provide additional information on the potential causality of this relationship above and beyond cross-sectional and event-level data analysis (Davis et al., 2014). Experimental studies have aimed to examine whether the relationship between alcohol and IPV perpetration meet causal criteria by establishing covariance, temporal precedence, and minimizing the effects of third variables (e.g. Crane et al., 2016). In a meta-analysis of 22 experimental studies, men administered alcohol were more likely to present aggressively in an IPV aggression paradigm than men who did not drink (Crane et al., 2016). However, researchers have called for increased investigation into the path between alcohol and violence (Foran & O’Leary, 2008). Emphasis was placed on relationship and individual variables that may interact with the association between alcohol use and IPV (Crane et al., 2016).

**Alcohol Use, Sleep, and IPV**

Sleep quality is one such variable that studies should examine as an individual-level variable that could affect the strength of the path from alcohol use to IPV perpetration. Sleep quality includes several aspects including sleep duration, number of awakenings, and time until sleep onset (Ohayon et al., 2017). Deficits in any of these areas have evidenced negative physical and mental health effects (Killgore, 2013; Reynolds & Banks, 2010). Extant literature often refers to such deficits as “impairments”, “deprivations”, or “disruptions” in sleep quality. Sleep disruption is a prevalent problem among college students with 60% reporting impaired sleep (Lund et al., 2010). Additionally, sleep impairment was associated with increased conflict and
aggression perpetration (Gordon & Chen, 2014; Keller et al., 2019). Clinical samples of perpetrators of IPV have also demonstrated more severe sleep problems relative to community samples (Hoshino et al., 2009). While there is a paucity of research regarding sleep and IPV, researchers hypothesize that sleep impairment may increase the likelihood for violence perpetration by increasing the likelihood for instigation and decreasing inhibition processes (C. Anderson & Platten, 2011; Gordon & Chen, 2014). Sleep deprivation or impairment may then relate to violence similarly to alcohol, as conceptualized by AMT, and amplify the path from alcohol to IPV.

AMT posits that intoxicated individuals are attentionally drawn to the most salient cues around them and experience greater difficulty processing more inhibitory cues (Steele & Josephs, 1990). Sleep has the potential to exacerbate this effect both by increasing the likelihood of interpreting stimuli as provoking and by decreasing an individual’s ability to process inhibitory cues. For instance, examinations of pupillary responses has indicated greater emotional reactivity to negative stimuli among sleep deprived individuals (Franzen et al., 2009). Even after one night of sleep deprivation, experimental findings evidenced magnified neural and autonomic responses when presented with negative stimuli (C. Anderson & Platten, 2011). Additionally, positive responses may be minimized and less likely to elicit a response from individuals who are partially or fully sleep-deprived (Pilcher et al., 2015). Consistent with this, a study that utilized experience-monitoring of medical students, indicated that sleep deprivation was associated with the minimization of positive events and the amplification of negative events (Zohar et al., 2005). In this way, sleep deprivation appears to function similarly to alcohol myopia.

This magnification of negative stimuli and minimization of positive stimuli, also has relevancy for the interpretation of facial expressions and emotion recognition. Facial expressions
play a significant communicatory role in interpersonal relationships such that they both communicate affiliation and social inclusion and provide crucial survival information (e.g., the presence of danger; Blair, 2003). However, sleep deprivation may make it more difficult to accurately recognize facial expressions (Van Der Helm et al., 2010). In an experimental task of facial recognition, sleep deprivation was related to the overestimation of threatening facial expressions (Goldstein-Piekarski et al., 2015). As an extension of this, Kilgore and colleagues, (2017) presented participants with morphed faces exhibiting ambiguous combinations of six basic emotions (happiness, surprise, fear, sadness, disgust, anger). Investigators asked participants to identify the dominant emotion in each face. Findings evidenced that sleep deprivation decreased participants’ ability to recognize happiness or sadness but had no effect on the recognition of threat-signaling expressions (e.g., disgust and anger). Researchers concluded that sleep deprivation creates a deficit in the capacity for cognition and emotion which may result in the prioritization of certain emotion recognition resources (Killgore et al., 2017). Individuals may prioritize potentially threatening emotional stimuli over less “urgent” stimuli that are more centered on social affiliation and empathy (e.g., happiness and sadness). Therefore, individuals who are more sleep deprived may be more likely to define threats in their environment. As previously outlined, perception of threat was found to be a trigger for alcohol-facilitated aggression (McMurran et al., 2012). Sleep deprivation may make this perception more likely especially in the presence of the myopia effects of alcohol.

Not only are negative stimuli more likely to be perceived or misattributed when individuals are sleep deprived, but evidence suggested that sleep deprivation may also lead to a decrease in the ability to implement inhibitory processes (C. Anderson & Platten, 2011). Consistent with this, on a Go-No Go task, participants experiencing 2 days of total sleep
deprivation had more difficulty inhibiting their responses when required by the task (Drummond et al., 2006). Literature reviews further identified sleep deprivation as an impairing factor for complex decision making such as those that involve innovation, uncertainty, or nuanced information (Harrison & Horne, 2000). For instance, a simulated task of decision making under uncertainty was administered to 34 participants before and after 49.5 hours of sleep deprivation (Killgore et al., 2006). Results showed that individuals were less able to critically consider short-term benefits against longer term consequences which resulted in increasingly risky decision making. Overall, the brain appears unable to fully compensate for sleep-related neural impairment when faced with a nuanced decision that requires the integration of multiple elements (Schnyer et al., 2009).

Additionally, individuals who experienced sleep deprivation evidenced an impaired ability to use higher order emotional processing (Mauss et al., 2013). Within this laboratory paradigm, participants who were sleep deprived were less able to use reappraisal strategies to ameliorate experiences of negative affect in response to saddening stimuli. Therefore, in situations of conflict, individuals may have greater difficulty integrating less salient cues that may serve an inhibitory function. Overall, previous findings indicated that sleep deprivation could function as a significant stressor and could amplify the path from alcohol use to violence by further exacerbating underlying mechanisms of AMT. Sleep deprivation could likewise increase the likelihood of experiencing instigating cues and limit access to inhibitory cues or processes that may prevent violence.

**Purpose and Hypotheses**

While theoretical and empirical research has elucidated the associations between FOMO and alcohol use (e.g. Riordan et al., 2015) as well as alcohol use and IPV (e.g. Temple et al.,
2008), a study has not examined a model of these combined constructs. The current study aimed to delineate the association between FOMO and IPV as well as to test a proposed mediation model examining the direct and indirect paths between FOMO, alcohol use, and physical and psychological IPV perpetration. Additionally, sleep impairment may enhance the myopic effects of alcohol use on IPV and the study therefore examined clinical sleep impairment as a moderator of that path. I hypothesized the following for the current study:

1. That FOMO would positively associate with alcohol use and physical and psychological IPV.

2. That alcohol use would mediate the relationship between FOMO and psychological and physical IPV perpetration through alcohol use.

3. Within the mediation model presented in hypothesis 2, sleep quality would moderate the path between alcohol use and IPV such that poor-quality sleepers would evidence a stronger relationship from alcohol use to IPV than good-quality sleepers.

Although no hypotheses directly addressed gender differences, due to some inconsistencies regarding the effect size across gender in meta-analyses of the path from alcohol use to IPV (e.g. Foran & O’Leary, 2008), gender was also examined as a moderator of this path within hypothesis 2 for the current study. Further, as data collection occurred throughout the beginning of the COVID-19 pandemic, the current study examined group differences for those recruited before and after the University released reactionary policies related to COVID-19.
CHAPTER THREE: METHOD

Participants

Consistent with our other studies of IPV in college students (Brem, Wolford-Clevenger, et al., 2018), participants were required to be over age 18 and currently in a romantic relationship that had lasted at least 1 month to be eligible for participation in this study. Analyses excluded participants who did not fully meet eligibility criteria (N = 15), were outside of emerging adulthood (N = 3; Arnett et al., 2014), cited being dishonest in their answers (N = 23), or refrained from answering questions related to dishonesty in response to study questions (N = 10). After exclusions, the study recruited 585 undergraduate students. Participants were 18-29 years old with a mean age of 18.88 (SD = 1.30). Most of the sample identified as female (N=404) while 180 identified as male and 4 as “other”. The sample was mainly Caucasian (78.8%) followed by Multiracial (6.30%), Black/African American (5.80%), Asian-American (4.60%), Hispanic/Latino (2.40%), Indian/Middle Eastern (1.50%), “Other” (.30%) and Native American (.20%). Most of the sample identified as heterosexual (88.10%) while 11.70% identified as a sexual minority group with 7.8% identifying as bisexual, 2.6% as homosexual, and 1.4% as “other”.

Procedure

The current study used the SONA Psychology online system (http://www.sona-systems.com) to recruit participants within psychology department classes for course credit. Psychology courses made enrolled students aware of this website and the opportunity to participate in research. Study information presented on the SONA site included an embedded link to a Qualtrics platform web survey. Clicking the link presented participants with eligibility check questions. These questions confirmed that the participants were over age 18 and currently in a
romantic relationship lasting at least 1 month. Qualtrics directed all eligible participants to an electronic consent form which they read and indicated their consent by clicking an acknowledgement button. The survey also presented participants with the option to print the consent form. The survey then presented the validated scales detailed below. This study did not require participants to answer all items and could skip any question at their own discretion. The final page of the survey presented participants with debriefing information including psychological resources. Study investigators granted 2 course credits to all participants who reached the end of the survey and .5 credits to all who discontinued the study for their time spent reading the consent form.

Measures

Relationship length.

The current study assessed relationship length with one item that asked “For how many months have you been dating your current partner?”

Physical and Psychological IPV Perpetration.

The Revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996; Strauss, Hamby, & Warren, 2003) assessed self-reported psychological and physical IPV perpetration in the past 12 months. The online study presented participants with 20 items from the Psychological Aggression and Physical Assault subscales of the CTS2. Participants rated each of these items on a 0 to 7 scale. A score of 0 indicated that the behavior has not occurred and 6 represented endorsement that the behavior occurred more than 20 times. Scores within this range represent more relative frequencies of perpetration for each act in the past 12 months. Participants indicated a “7” if the behavior occurred outside of that specified timeframe (i.e., prior to the past year). Therefore, for the purpose of this study, all scores of “7” were recoded to “0”. Analyses
summed the midpoint of each frequency range for each participant. Within this scale, higher total scores represent more frequent perpetration of IPV. The CTS2 is a standard and frequently used measure to assess IPV and has been found to be reliable and valid (Straus, Hamby, Boney-McCoy, & Sugarman, 1996; Strauss, Hamby, & Warren, 2003), including in college students (Shorey et al., 2011). The current study demonstrated fair reliability in the Psychological Aggression ($\alpha = .74$) scale and good reliability in the Physical Assault scales ($\alpha = .85$). While the CTS2 included sexual assault subscale, study analyses excluded it for 2 main reasons. First, this scale has historically yielded non-normal data with low endorsement and poor variance within samples at the study site. Additionally, the proposed research questions represented an extension of literature surrounding physical and psychological violence perpetration. Therefore, there was less theoretical and empirical evidence to inform hypotheses regarding how the proposed constructs would interact with sexual assault perpetration. See Appendices for the full measure.

**Alcohol Use.**

Alcohol use and associated problems (e.g. alcohol-related injury) were assessed using the 10-item Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993). This self-report measure assessed drinking frequency, quantity, intensity, dependence, tolerance, and consequences. An example item is as follows: “How often during the past 12 months have you found that you were not able to stop drinking once you had started?” Participants rated all items on a 0-4 scale. Analyses summed items to receive a total score (0-40). In this measure, higher scores indicated greater alcohol use and associated problems. Good reliability and validity have been demonstrated in empirical studies (Saunders et al., 1993) as well as in the current study ($\alpha = .84$). See Appendices for the full measure.
FOMO.

FOMO was assessed using the Fear of Missing Out Scale (FOMOS; Przybylski et al., 2013). This scale is a 10-item, self-report measure of how individuals experience apprehension that others are engaged in relatively more rewarding activities or social relationships. An example item is as follows: “I fear others have more rewarding experiences than me.” Participants rated each item on a 5-point Likert scale with 1 indicating that the statement is “Not at all true of me” and 5 indicating the statement is “extremely true of me”. Analyses summed items to get a total score with higher scores indicating greater fear of missing out. This measure has been found to have good internal consistency with a Cronbach’s alpha of .85 (Riordan et al., 2015). The current study demonstrated similar reliability (α = .89). See Appendices for the full measure.

Sleep Quality.

The Sleep Condition Indicator (SCI) was used to assess overall sleep quality for each participant (Espie et al., 2014). The SCI is an 8 self-report items based on the insomnia criteria listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychological Association, 1980)). Participants rated each item on a 0-4 scale that assessed various aspects of sleep (e.g., sleep patterns, perceived impact of poor sleep, history of sleep-related problems, etc.). Analyses calculated total scores by summing all 8 items (0-32) with higher scores indicating better sleep quality. The clinical cutoff dichotomized this scale. The current study designated participants that scored over 16 as “good quality sleepers” and coded them a “1” and participants that scored 16 or less as “poor quality sleepers” and coded them a “0”. The SCI has demonstrated good reliability as well as convergent validity with other, well-known sleep measures such as the Insomnia Severity Index (Espie et al., 2014). In the current study, the SCI
demonstrated good reliability with a Cronbach’s Alpha of .86. See Appendices for the full measure.

**Data Analytic Strategy**

**Preliminary Analyses**

Preliminary analyses began by examining the quality of data. I used Little’s Missing Completely at Random (MCAR) test in SPSS to determine that data were MCAR. Following this, I examined the asymmetry and kurtosis of all study variables (FOMO, alcohol use, Psychological IPV, Physical IPV, and relationship length). Variables with significant skew or kurtosis determined by the guidelines put forth by George (2011) were log transformed (see Table 1). Following corrections, I ran bivariate correlations using log-transformed variables where applicable to test for associations between study variables and, specifically, the bivariate associations between FOMO, alcohol use, and psychological and physical IPV (hypothesis 1). I also conducted a series of independent t-tests to determine whether there were differences across dichotomized gender (male and female), sexual minority status (heterosexual or sexual minority), and the instatement of COVID-19 policies (pre and post). Significant differences across gender and sexual minority status identified in the t-tests (see Results section and the significantly different means presented in Table 2) were further explored using Multigroup Models (MGM) in Mplus Version 8.5 (Muthén, L. K., & Muthén, 1998). In both MGMs, I compared a freely varying model to a model in which I constrained paths by either gender or sexual minority status. I constrained all paths which contained affected variables as determined by the t-tests. I then compared these models using a chi-square difference test. A significant chi-square test would indicate that the constraining variable moderated those paths and a nonsignificant test would indicate that there was no moderation. As the chi-square difference tests evidenced no moderation
for gender or sexual minority status (see results for further details), I entered gender and sexual minority status into the overall model as controls for mean differences. I further outline this model below.

**Hypothesis Testing**

Hypothesis 2 aimed to examine the relationship between FOMO and physical and psychological IPV through alcohol use. This hypothesis was tested using structural equation modeling in Mplus Version 8.5 (Muthen & Muthen, 1998). This study examined physical and psychological IPV perpetration as separate outcome variables in a single model. As there is a strong association between physical and psychological IPV (Murphy & O’Leary, 1989; Salis, Salwen, & O’Leary, 2014), associations between outcomes were controlled for. This model simultaneously regressed physical and psychological IPV onto AUDIT and FOMO total scores as well as relationship length, gender, and sexual minority status. The model also regressed AUDIT scores onto FOMO total scores. Relationship length, gender, and sexual minority status functioned as statistical controls. See Figure 2 for a visual representation of this model. I utilized Full Information Maximum Likelihood (FIML) due to its resilience to non-normal and missing data (Enders, 2010). I analyzed the indirect associations between FOMO and physical and psychological IPV perpetration through AUDIT using the bias-corrected bootstrap method while controlling for associations among physical and psychological IPV perpetration as well as defined control variables. The model specified ten thousand bootstrap samples and 95% bias-corrected confidence intervals. In output, I used the absence of zero in the confidence intervals to determine the statistical significance of indirect effects.

Following this, I examined sleep quality as a possible moderator of the path from AUDIT to psychological and physical IPV perpetration (hypothesis 3). Analyses used the clinical cut-off
for sleep problems to dichotomize dichotomized Sleep quality (as defined by the Sleep Condition Indicator). Consistent with literature (Espie et al., 2014), I designated total scores of 16 or lower as “poor quality sleepers” with those above this cut off as “good quality sleepers”. An MGM tested moderation by sleep quality. In the MGM, I estimated and compared 2 models. In the first model, I constrained the path from AUDIT to IPV by sleep quality (equal across groups) while the second allowed for inequalities between parameters (i.e., an unconstrained model). I then compared model fit using a chi-square difference test. A significant chi-square would indicate that sleep quality moderated the paths from AUDIT to psychological and physical IPV.

**Post-Hoc Analyses**

Subsequent to the primary hypothesis testing, two distinct post-hoc analyses were conducted. See “Post Hoc Analyses” in the results section for further description.
CHAPTER FIVE: RESULTS

Preliminary Results

Missing Data Analysis

Using Little’s Missing completely at random (MCAR) test for missing data, it was determined data were MCAR, $\chi^2(69, N=585) = 70.99$, $p = 0.41$.

Asymmetry and Kurtosis

Prior to analyses, I examined the skew and kurtosis of all study variables. Asymmetry and kurtosis were determined by values greater than 2 or less than -2 (George, 2011). Physical and psychological intimate partner violence (IPV) as well as relationship length violated this rule. I log-transformed these variables for the purpose of bivariate correlations and the examination of mean differences in $t$-tests. Table 1 presents skew and kurtosis data before and after log transformation.

Descriptive Statistics.

I then conducted a bivariate correlation analysis using relevant transformed values. Table 2 presents bivariate correlations. FOMO was correlated with all study variables except physical violence and relationship length. All correlations were positive except dichotomous sleep which indicated that as FOMO increased, sleep problems were less likely. AUDIT was correlated with all variables besides sleep variables and sexual minority status. AUDIT positively correlated with psychological and physical IPV while it was negatively correlated with relationship length. Further, AUDIT was negatively correlated with dichotomized gender (1= Male; 2=Female) and sexual minority status (1=Heterosexual; 2=Sexual Minority) such that higher audit scores independently associated with being male and heterosexual. Psychological IPV correlated with all study variables except gender and sexual minority status. All correlations were positive except
sleep indicating that as instances of psychological IPV increased over the past 12 months, sleep in the past month increased in quality. Physical IPV positively correlated with alcohol use and psychological IPV and was negatively correlated with gender such that physical IPV was associated with being male.

**COVID-19 Group Differences**

Following basic descriptive statistics, I conducted an independent samples \( t \)-test to examine mean differences before and after the university where the study took place enacted COVID-19 policies. Groups evidenced no significant mean differences and the current study combined groups in all subsequent analyses.

**Differences Among Sexual Minority Students**

To account for the unique lived experiences of students who identified as sexual minorities, I ran an independent samples \( t \)-tests to examine mean differences between students who identified as heterosexual and those who identified as a sexual minority. Students who identified as sexual minorities endorsed greater FOMO, \( t(575) = -3.00, p < .01 \), and fewer sleep problems when calculated as a continuous total score, \( t(573) = -3.18, p < .001 \), or when dichotomized at the clinical cutoff, \( t(76.39) = 2.02, p = .04 \). Please note that the analysis examining the differences in dichotomized sleep scores violated Levene’s test for equality or variances, \( (F = 35.93, p < .001) \) and therefore represent a nonparametric test. As a result, I reported the \( t \) statistic not assuming homogeneity of variance.

Following this, I ran an MGM to determine if differences among groups moderated the associations between variables within the overall path model in Figure 1. Using a chi-square difference test, I compared the freely varying model to a model where I constrained paths involving FOMO by sexual minority status. The chi-square difference test evidenced no
significant differences between the models, $\Delta \chi^2 (3) = 2.29, p = .51$. Therefore, there was no indication of moderation by sexual minority status on these paths. To account for mean differences, I placed sexual minority status as a control within the model as shown in Figure 2.

**Differences Between Binary Genders**

Following the examination of university policies relating to COVID-19 and sexual minority group differences, I examined mean differences in study variables among binary gender. Women evidenced significantly higher levels of FOMO than men, $t(411.34) = -5.56, p < .001$. I reported the $t$ statistic not assuming homogeneity of variance as the nonparametric alternative following a violation of Levene’s test ($F=8.43, p < .01$). Men evidenced greater physical IPV, $t(208.35) = 2.48, p = .01$, and fewer sleep problems when calculated as a total score, $t(570) = -3.07, p < .01$, or dichotomized at the clinical cutoff, $t(316.96) = 2.57, p = .01$. Findings revealed that dichotomous sleep ($F=7.20, p < .01$) and physical violence ($F=32.45, p < .001$) violated Levene’s test of homogeneity of variance. In both cases, I reported the $t$ statistic that did not assume homogeneity of variance.

I ran an MGM to determine if differences between men and women moderated the associations within the full model. I compared a freely varying model to a model constrained on all paths within the full model which included FOMO and physical IPV. The chi-square difference test revealed no significant differences between the models, $\Delta \chi^2 (6) = 10.27, p = .11$. In accordance with these findings, I added gender as a control to account for mean differences between men and women as evidenced in Figure 2 but made no further changes to the model.

**Hypothesis Testing**

**Overall Model**

Following preliminary data analysis, I tested a proposed mediation model (see Figure 2) to examine my hypothesis that FOMO would positively associate with psychological and physical
IPV through alcohol use. While controlling for relationship length, sexual minority status, and gender, alcohol partially mediated the relationship between FOMO and psychological IPV ($B = .04, 95\% CI [.02, .08]$) and physical IPV ($B = .03, 95\% CI [.01, .08]$). I determined significance through the absence of 0 in the confidence intervals. See Table 3 for standardized coefficients of direct paths between variables as well as Figure 3 for a visual representation of significant paths.

Sleep Moderation of Alcohol to IPV Paths

Following support for the overall model, I sought to extend findings and elucidate the path between alcohol use and violence (See Figure 4). I used an MGM to test the hypothesis that sleep quality would moderate the relationship between alcohol use and physical and psychological IPV. Specifically, I posited that clinically poor sleepers would evidence a stronger relationship between alcohol use and IPV. I compared a freely varying model to one in which I constrained the paths from alcohol use to physical and psychological IPV by dichotomized sleep scores. The chi-square difference test did not evidence significantly worse model fit, $\Delta\chi^2(2) = .35, p = .84$. Therefore, I concluded that sleep problems did not moderate the relationship between alcohol use and IPV.

Post-Hoc Analyses

Dual Sleep and Alcohol Mediators

Following hypothesis testing, I ran an alternative model, presented in Figure 5, in order to examine the contribution of total sleep scores as a mediator while accounting for alcohol use as an explanatory variable. This was a shift from the study hypotheses as I analyzed sleep as a continuous, dual explanatory variable with alcohol use between FOMO and IPV and not a dichotomous mediator on the paths from alcohol use to IPV as presented in Figure 4. To examine this, I simultaneously regressed psychological and physical IPV simultaneously onto AUDIT, sleep quality, and FOMO total scores along with gender, sexual orientation, and relationship
length as control variables. I then regressed AUDIT and sleep quality total scores onto FOMO scores. This model controls for the relationships between outcome variables, mediators, and control and predictor variables. I examined the indirect relationship between FOMO and psychological and physical IPV through AUDIT and sleep quality using the bias-corrected bootstrap method while controlling for associations among physical and psychological IPV perpetration as well as defined control variables. The model specified ten thousand bootstrap samples and 95% bias-corrected confidence intervals. Consistent with the overall model, this analysis specified FIML. In output, I used the absence of zero in the confidence intervals to determine statistical significance of indirect effects.

FOMO was associated with higher levels of alcohol use and problems which was then associated with increased psychological IPV ($B = .04, 95\% \text{ CI } [.01, .08]$) and physical IPV ($B = .03, 95\% \text{ CI } [.01, .08]$). Increased FOMO was associated with better sleep which was associated with increased psychological IPV ($B = .06, 95\% \text{ CI } [.02, .10]$). Total sleep scores did not mediate the relationship between FOMO and physical IPV ($B = .01, 95\% \text{ CI } [.008, .05]$). See Figure 5 in appendices for further description, interpretation of results, and a visual representation of this post-hoc analysis.

**Sleep Moderation of FOMO to Alcohol Path**

The second post-hoc analysis was an extension of the overall model presented in Figure 2. The aim of this analysis was to examine whether sleep (dichotomized by the clinical cut-off) would moderate the path from FOMO to AUDIT scores in a model examining the relationship between FOMO and physical and psychological IPV through AUDIT. As such, the series of structural regression equations analyzed using path equations remain the same as the data analytic strategy described for hypothesis 2. I simultaneously regressed physical and psychological IPV onto
AUDIT, FOMO, and control variables while accounting for associations between predictors, controls, and outcomes. The model specified 10,000 bootstrap models and FIML. This post-hoc analysis used this model for a basis of an MGM to determine whether dichotomized sleep scores moderated the relationship between FOMO and AUDIT scores. To examine this, I compared a freely varying model to a model in which I constrained the path from FOMO to AUDIT based on sleep scores. I then ran a chi-square difference test to determine if moderation was present with significant values indicating the association between FOMO and AUDIT varied significantly based on being a clinically poor sleeper versus a good sleeper.

The chi-square difference test evidenced no moderation by sleep problems, $\Delta \chi^2 (1) = .47, p = .49$. See Figure 6 in appendices for further description, interpretation of results, and a visual representation of this post-hoc analysis. See Figure 6 for a visual representation of this model and a discussion of the empirical and theoretical underpinnings to this exploration.
CHAPTER SIX: DISCUSSION

Deficits in relatedness defined by Self Determination Theory (SDT) and central to FOMO are theoretically tied to aggression through feelings of social exclusion and perceived rejection (DeWall et al., 2009; Lai et al., 2016; Twenge et al., 2001). Empirically, FOMO has been consistently linked to increased alcohol use among college students (Przybylski et al., 2013; Riordan et al., 2015) which is also a salient predictor of intimate partner violence (IPV; Crane et al., 2016; Moore et al., 2011; Shorey et al., 2014; Stuart et al., 2003). The current study aimed to replicate and extend these findings within an undergraduate sample by examining bivariate associations between FOMO, alcohol use, and IPV as well as combining these variables within a proposed mediation model. I hypothesized that FOMO would positively associate with alcohol use and psychological and physical IPV. I further hypothesized that FOMO would relate to increased frequency of physical and psychological IPV through alcohol use. As a further extension of prior research, sleep quality was hypothesized to moderate the relationship between alcohol use and IPV as poor sleep quality was shown to have similar myopic effects to alcohol, increasing the likelihood for instigation (Anderson & Platten, 2011; Goldstein-Piekarski et al., 2015; Van Der Helm et al., 2010) and lowering inhibition (Drummond et al., 2006; Mauss et al., 2013). Findings partially supported hypotheses such that FOMO was positively associated with alcohol use consistent with prior research (Przybylski et al., 2013) and psychological IPV consistent with theory (DeWall et al., 2009; Eisenberger & Lieberman, 2004; Twenge et al., 2007). However, FOMO was not associated with physical IPV. Further, findings partially supported our mediation hypothesis such that alcohol use partially mediated the relationship between FOMO and psychological and physical IPV. Finally, despite theoretical justification,
findings did not support sleep quality as a moderator of the relationship between alcohol use and IPV.

SDT posits that deficits in relatedness impair an individual’s ability to regulate psychological experiences (Deci & Ryan, 2008). Individuals may make a concerted effort to strengthen social bonds in response to this dysregulation (Maner et al., 2007). In an undergraduate sample where alcohol is often central to social experiences (Borsari & Carey, 2001; Thombs, 1995), research indicated that individuals are more likely to use alcohol in response to feelings of FOMO (Przybylski et al., 2013; Riordan et al., 2015). Consistent with prior research (e.g., Riordan et al., 2015) and hypothesis 1 FOMO was positively associated with alcohol use in the current study. However, this is the first study to examine the association between FOMO and IPV. With an increased emphasis on peer relationships within emerging adulthood (Lam et al., 2014), FOMO may elicit feelings of social exclusion. The psychological distress related to the perception of exclusion is thought to be evolutionarily informed by attachment (Eisenberger & Lieberman, 2004; Van Beest & Williams, 2006). The resulting feelings of rejection are strongly tied to increased rates of instigation and the perpetration of aggression in laboratory paradigms (DeWall et al., 2009; Twenge et al., 2001). However, empirical studies have never examined the direct relationship between FOMO and IPV. The current study found support for the link between FOMO and IPV which partially supported the study’s hypothesis such that FOMO positively associated with psychological IPV. However, there was no evidence of a relationship between FOMO and physical IPV at the bivariate level in the current study. This may be a result of the non-normality of data even after log-transformation. Data were skewed toward less severe acts and 80.6% of the sample reported no physical IPV perpetration at all. Thus, there was a restricted range of scores on the physical IPV variable. This could, in part, be attributed to social desirability
as college students perceived physical IPV as the most severe acts of violence within relationships (Wilson & Smirles, 2020).

Despite the lack of bivariate association, the findings of the current study supported the relationship between FOMO and physical IPV, along with psychological IPV, through alcohol use as an explanatory variable. Structural equation analyses revealed that increased FOMO associated with higher frequency of physical and psychological IPV through alcohol use. It is possible that the relatively low prevalence and lack of normality impacted the relationship between FOMO and physical violence at the bivariate level but were less evident when non-normality was corrected for with maximum likelihood and physical IPV was regressed onto alcohol use as a well-established correlate (Moore et al., 2011; Shorey, Stuart, McNulty, et al., 2014). Alcohol use may decrease effortful control of cognitive processes and shift focus to salient, potentially instigating, cues while lowering inhibition (Giancola et al., 2011; Giancola & Corman, 2007; Steele & Josephs, 1990). Such effects are strongly tied to IPV in extant literature (Crane et al., 2016). FOMO was a salient precursor to alcohol use in which higher levels of FOMO were associated with increased alcohol consumption and greater negative consequences from drinking (Przybylski et al., 2013; Riordan et al., 2015). This was posited to result from peer pressure being perceived more intensely (Knee & Neighbors, 2002; Wood et al., 2001) as well as the prevalence of alcohol as a focus of social events (Borsari & Carey, 2001; Thombs, 1995) which are strongly connected to social media (Przybylski et al., 2013; Subrahmanyam et al., 2008). Findings in the current study are consistent with these findings in past research as FOMO positively associated with alcohol use and alcohol use positively associated with physical and psychological IPV. This is the first study to establish the connection between FOMO and IPV through alcohol use as an explanatory variable.
However, it is important to note that the direct path between FOMO and psychological IPV remained significant indicating the potential for other explanatory variables or interpretations of directionality. As this is a proposed mediation model conducted within a cross-sectional sample, temporal inferences cannot be made for the relationship between variables. For instance, while a direct path remained between FOMO and psychological IPV, the directionality remains unclear. It is plausible that FOMO may predict psychological IPV, represent the inverse relationship, or represent a feedback loop in which these constructs bidirectionally predict each other. Additionally, it is possible that other variables may be acting on this relationship. The complexity of violence perpetration lends itself to the inclusion of multiple compounding trait and situational factors. In particular, researchers have called for the elucidation of the path from alcohol to IPV (Crane et al., 2016; Foran & O’Leary, 2008). In the context of the current study, I posited that sleep deprivation would serve as a moderator of this path such that clinically poor sleepers would evidence a stronger relationship between alcohol use and psychological and physical IPV. The current study drew support for this hypothesis from existing literature outlining the overlap between Alcohol Myopia Theory (AMT) and the effects of sleep deprivation. Alcohol myopia is believed to strongly associate with violence, in part, because alcohol use decreases an individual’s ability to control cognition, causing individuals to focus on salient, and potentially instigating cues, while in a disinhibited state (Giancola et al., 2011; Giancola & Corman, 2007; Steele & Josephs, 1990). Sleep impairment has a similar effect, decreasing inhibition while simultaneously increasing the likelihood for instigation (Anderson & Platten, 2011; Gordon & Chen, 2014). Investigators found that sleep deprivation increased reactionary responses to negative stimuli (Franzen et al., 2009) and increased the likelihood of threat perception through the misattribution of facial expressions (Goldstein-Piekarski et al., 2015; Van Der Helm et al., 2010). In fact, sleep deprivation was related to increased rates of conflict (Gordon & Chen, 2014;
Keller et al., 2019) and sleep problems were found to occur in higher rates within perpetrators of IPV relative to community samples (Hoshino et al., 2009). However, in contrast to past research and hypothesis d, in the present study sleep quality did not moderate the relationship between alcohol use and psychological or physical IPV. At the bivariate level, the relationship between sleep and IPV was also contrary to current literature with improved sleep patterns correlating with increased alcohol use and greater psychological IPV perpetration. It is true that alcohol use may speed up sleep onset, however awakenings and physiological disruptions are common and greatly affect sleep quality (Roehrs & Roth, 2001). Participants may have misperceived faster sleep onset as better overall sleep quality when reporting their past month’s sleep. This could have been further hampered by alcohol’s effects on episodic memory in which encoding information for retrospective report becomes more difficult during intoxication (Söderlund et al., 2007). Therefore, as alcohol use increased, participants may have been more likely to misremember sleep or misperceive sleep onset for overall quality. Considering the bivariate relationship between psychological IPV and sleep quality, extant literature frequently conceptualizes IPV as a mechanism of self-regulation such that perpetrating violence provides negative reinforcement through the amelioration of negative internal states (Langer & Lawrence, 2010; O’Neil & Harway, 1997). This relief of inner turmoil could plausibly associate with better sleep. However, measure inconsistencies may also partially account for findings. The limitations section further describes this and other study limitations.

**Clinical Implications**

Although the current study did not find significant effects of sleep, the data connecting FOMO, alcohol use, and IPV in a single model holds several implications. Findings indicated that FOMO may serve as a novel point of intervention for alcohol use and IPV. College students are
frequently mandated to alcohol use interventions such as alcohol education groups, computer-delivered alcohol education, or motivational interviewing (Anderson & Gadaletto, 2006). However, meta-analyses across such programs indicate that, while alcohol use decreased in short periods following the intervention, long term effects were not consistent (Carey et al., 2016). Addressing FOMO may improve such intervention programming which could have the dual benefit of addressing alcohol use and potentially preventing or reducing IPV. This is consistent with previous calls for peer-enhanced interventions for college students with substance misuse (Smith et al., 2013) and builds on pilot studies indicating preliminary support for peer-dyads increasing the effect size of alcohol intervention programs (Tevyaw et al., 2007).

**Limitations and Future Research**

Explorations of combined interventions are contingent on addressing the limitations in the current study in future research. First, all reports of perpetration represent a single partner. Collecting dyadic partner reports would allow for comparisons between partner reports, more nuanced information regarding the interplay between partners, and the potential bidirectional relationship perpetration and victimization (Langhinrichsen-Rohling et al., 2012). Future research should consider the utility of this method. Additionally, while past theory and research strongly influenced the hypothesized ordering of variables, the cross-sectional sample utilized in the present study precludes firm conclusions regarding the directionality among variables. Further, the current study assessed alcohol use and IPV in the past 12 months and sleep quality in just the past month. Future research could clarify the temporal associations between variables using daily diary designs, ecological momentary assessment, and/or experimental methods. Such methods would allow for more observations of IPV and its precursors and better outline relationships contingent on day to day social interactions (Nezlek, 2003). If possible, future studies should
incorporate objective measures of sleep such as polysomnography (PSG; overnight sleep studies) and actigraphy (participant-worn devices that define sleep and wake cycles through movement). Although past research has demonstrated that there might be moderate agreement between subjective reports and objective measures of sleep such as wrist actigraphy and PSG (Williams et al., 2020), subjective reports may overreport sleep duration (Lauderdale et al., 2008). In addition, some posit that self-report measures assess different dimensions of sleep relative to objective sleep measures (Aili et al., 2017). For instance, research examining the relationship between self-reported sleep measures and objective measures found that self-report measures allow for information regarding sleep deprivation generally, but have little utility in assessing physiological sleep abnormalities (Buysse et al., 2008). Self-report sleep measures are also prone to inflated reports dependent on the experience of psychosocial factors (e.g., low social support) while objective measures are not (Jackowska et al., 2011). Therefore, using objective measures in future studies would allow researchers to more accurately assess sleep quality. This will be particularly important when assessing sleep quality in the context of alcohol use in which physiological abnormalities within the sleep cycle is more likely to be present (Roehrs & Roth, 2001). Further, when investigators shorten self-report measures for daily diary formats, agreement decreases significantly (Girschik et al., 2012). In experimental designs, actigraphy increased adherence to study protocols that required participants to individually manage their sleep schedules in a specific way (Carney et al., 2004). Therefore, while PSG may the gold standard for assessment, actigraphy may provide a comparable objective assessment at a lower cost (Buysse et al., 2006; Williams et al., 2020).

Methodology geared toward determining temporality (e.g., daily diary studies) would also allow studies to examine the possibility of bidirectional, cyclical relationships involving sleep quality. For instance, one study using actigraphy and ecological momentary assessment found
that there was a bidirectional relationship between sleep quality and affect such that previous days sleep quality predicted the next day’s affect which, in turn, predicted sleep quality (Difrancesco et al., 2021). Being able to incorporate the relative effects of situational affect would allow research to better understand the proximal interactions between sleep quality, affect, alcohol use, and IPV perpetration. Studies have found that IPV perpetration is more likely on drinking days relative to non-drinking days (Shorey, Stuart, McNulty, et al., 2014) and that angry affect may moderate the relationship between alcohol and psychological and physical IPV (Shorey, Stuart, Moore, et al., 2014). Expanding these findings by incorporating sleep quality would allow for better understanding of the temporal complexity of IPV with variables that may operate cyclically. While extending findings to account for other variables such as affect, researchers may consider extrapolating the relationship between FOMO and conceptually similar constructs such as jealousy. Jealousy was found to moderate the relationship between alcohol use and IPV in a clinical sample of perpetrators of IPV (Brem, Shorey, et al., 2018). These findings could further research by clarifying the individual factors affecting the path from alcohol to violence and extend the conceptualization of FOMO in the context of IPV. Perceived relationship threats central to jealousy may uniquely relate to the apprehension regarding social exclusion central to FOMO.

Finally, future research should aim to diversify the sample used in the present study. As a largely Caucasian and heterosexual sample, findings may not generalize to the unique lived experiences of marginalized groups. For instance, within the current study, individuals who identified as sexual minorities endorsed higher rates of FOMO than participants who identified as heterosexual. A separate study using a community sample likewise indicated higher rates of FOMO among individuals who identified as sexual minorities relative to their heterosexual peers (Kaiser et al., 2021). Investigators posited that there may be a higher need to connect or belong during the process of coming out. Relatedly, other studies indicated that, compared with
heterosexual students, sexual minority students might feel lonelier (Westefeld et al., 2001) or have less cohesion in their social networks including fewer close friendships (Marshall et al., 2019). Therefore, sexual minority students may have distinct experiences in how they experience relatedness or perceived exclusion. This warrants further exploration in future studies along with the extension of findings into other diverse groups such as gender, racial, and ethnic minorities.

**Conclusions**

IPV is a prevalent problem among undergraduate students. Prior research has defined risk factors for IPV to include alcohol use (Crane et al., 2016). However, no study has examined the role of perceived relatedness as a precursor to alcohol use. Distress related to perceived exclusion defines FOMO as a relatively new psychological construct that is also related to increased alcohol use among college students (Przybylski et al., 2013; Riordan et al., 2015). The current study sought to replicate and extend findings. FOMO positively related to alcohol use and psychological, but not physical IPV. A proposed mediation model expounded on these relationships. Alcohol use mediated the relationship between FOMO and psychological and physical IPV. However, despite theoretical support that sleep would moderate the path from alcohol use to IPV through their similar mechanisms of action, this study found no support for this study hypothesis. Findings hold preliminary implications for the role of FOMO in the perpetration of IPV among college students. Limitations of note included a lack of timeline congruence among measures used as well as the cross-sectional nature of the data and the homogeneity of the recruited sample. Future studies should consider the use of temporally-focused methodology, objective measures of sleep, and the consideration of the unique lived experiences of marginalized groups on study constructs.
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APPENDICES
Table 1. Correcting for Skew and Kurtosis with Log Transformation

<table>
<thead>
<tr>
<th></th>
<th>Skew (SD)</th>
<th>Kurtosis (SD)</th>
</tr>
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<tbody>
<tr>
<td>Psychological IPV</td>
<td>3.16 (.10)</td>
<td>13.01 (.20)</td>
</tr>
<tr>
<td>Psychological IPV (log transformed)</td>
<td>1.46 (.10)</td>
<td>1.60 (.20)</td>
</tr>
<tr>
<td>Physical IPV</td>
<td>10.86 (.10)</td>
<td>143.65 (.20)</td>
</tr>
<tr>
<td>Physical IPV (log transformed)</td>
<td>5.38 (.10)</td>
<td>35.38 (.20)</td>
</tr>
<tr>
<td>Relationship Length</td>
<td>1.89 (.10)</td>
<td>4.05 (.20)</td>
</tr>
<tr>
<td>Relationship Length (log transformed)</td>
<td>-.07 (.10)</td>
<td>-.96 (.20)</td>
</tr>
</tbody>
</table>

*Note: Table 2 presents means and standard deviations for all study variables*
Table 2. Bivariate Correlations and Descriptive Statistics for Study Variables

<table>
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<th>1</th>
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<th>3</th>
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<th>7</th>
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<th>9</th>
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<tbody>
<tr>
<td>1. FOMO</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2. Alcohol Use</td>
<td>.12**</td>
<td>-</td>
<td>.19**</td>
<td>.41**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Psychological IPV</td>
<td>.15**</td>
<td>.21**</td>
<td>-</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>4. Physical IPV</td>
<td>.01</td>
<td>.19**</td>
<td>.41**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Sleep Quality</td>
<td>.30**</td>
<td>.08</td>
<td>.17**</td>
<td>.04</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Sleep Quality (Dichotomized)</td>
<td>-.23**</td>
<td>-.04</td>
<td>-.11**</td>
<td>-.03</td>
<td>-.83**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Relationship Length</td>
<td>-.08</td>
<td>-</td>
<td>.19**</td>
<td>.00</td>
<td>-.06</td>
<td>.11*</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Gender</td>
<td>.20**</td>
<td>-.09*</td>
<td>.00</td>
<td>-.13**</td>
<td>.16**</td>
<td>-.11</td>
<td>-.02</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>9. Sexual Minority Status</td>
<td>.12**</td>
<td>-.07</td>
<td>-.00</td>
<td>-.04</td>
<td>.13**</td>
<td>-.01</td>
<td>.01</td>
<td>.14**</td>
<td>-</td>
</tr>
</tbody>
</table>

**Mean (SD)**

<table>
<thead>
<tr>
<th></th>
<th>22.69</th>
<th>4.81</th>
<th>14.57</th>
<th>13.77</th>
<th>19.32</th>
<th>.43</th>
<th>13.28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>(8.37)</td>
<td>(5.05)</td>
<td>(11.74)</td>
<td>(10.03)</td>
<td>(7.20)</td>
<td>(.50)</td>
<td>(13.79)</td>
</tr>
<tr>
<td>Women</td>
<td>20.01</td>
<td>2.67</td>
<td>17.82</td>
<td>.52</td>
<td>(7.09)**</td>
<td>(.38)</td>
<td>(6.88)*</td>
</tr>
<tr>
<td>Sexual Minorities</td>
<td>23.88</td>
<td>2.61</td>
<td>19.82</td>
<td>.40</td>
<td>(8.66)**</td>
<td>(.19)</td>
<td>(7.15)*</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>25.51</td>
<td>18.97</td>
<td>.45</td>
<td>(8.97)**</td>
<td>(19.75)**</td>
<td>(1.50)*</td>
<td>(48)*</td>
</tr>
</tbody>
</table>

**Significantly Different Means (SD)**

|   | 22.31 | 21.88 | .32 | (8.22)** | (7.81)** | (48)* |

**Note:** *p < .05, **p < .01 (two-tailed). Means and standard deviations calculated from non-transformed variables. The above table only shows significantly different means from results of t-tests.
<table>
<thead>
<tr>
<th>Mediator</th>
<th>Outcome Variables</th>
<th>Psychological Violence</th>
<th>Physical Violence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol Use</td>
<td></td>
<td>.23***</td>
<td>.18**</td>
</tr>
<tr>
<td>FOMO</td>
<td></td>
<td>.13**</td>
<td>.11*</td>
</tr>
<tr>
<td>Relationship Length</td>
<td></td>
<td>.17**</td>
<td>-.03</td>
</tr>
<tr>
<td>Sexual Minority Status</td>
<td></td>
<td>.03</td>
<td>.00</td>
</tr>
<tr>
<td>Gender (Control)</td>
<td></td>
<td>-.02</td>
<td>-.1**</td>
</tr>
</tbody>
</table>

*Note. Standard errors are in parentheses. *p < .05. **p < .01. ***p < .001.*
Figure 1. Proposed Path Model. The above model indicates the direct and indirect effects of fear of missing out (FOMO) on psychological aggression perpetration and physical assault perpetration through alcohol use and problems (AUDIT). The model controlled for associations between outcome in addition to controlling for relationship length and mean differences between men and women and students who identify as sexual minorities versus heterosexual. I examined the bolded paths for moderation by sleep group (poor or good quality sleepers).
Figure 2. Overall Model Following Preliminary Analyses. The above model indicates the direct and indirect effects of fear of missing out (FOMO) on psychological aggression perpetration and physical assault perpetration through alcohol use and problems (AUDIT). The model controlled for associations between outcome in addition to controlling for relationship length and mean differences between men and women and students who identify as sexual minorities versus heterosexual.
Figure 3. Direct Paths Remaining in the Overall Model. The above model indicates the direct paths that remained significant following the analysis of hypothesis 2. Coefficients for direct paths are presented in Table 3.
Figure 4. Sleep Moderation of the Alcohol to IPV Paths. The above model indicates the direct and indirect effects of fear of missing out (FOMO) on psychological aggression perpetration and physical assault perpetration through alcohol use and problems (AUDIT). The model controlled for associations between outcome in addition to controlling for relationship length and mean differences between men and women and students who identify as sexual minorities versus heterosexual. I examined the bolded paths for moderation by sleep group (poor or good quality sleepers).
**Figure 5.** Dual Sleep and Alcohol Mediators. This post-hoc analysis sought to explore the role of sleep as a mediating variable while controlling for alcohol as an explanatory variable. Please note that, consistent with hypothesis testing, this model included gender, sexual minority status, and relationship length as controls. However, this model omits controls from the figure for clarity. It is possible that FOMO could contribute to an irregular sleep schedule and sleep impairment overall. For instance, researchers suggest that sleep may be sacrificed for social engagements regularly in an undergraduate environment (Adams et al., 2017; Gaultney, 2010). Therefore, sleep impairment may result directly from FOMO causing disinhibited behavior, increasing the likelihood of instigation (C. Anderson & Platten, 2011; Killgore et al., 2017; Mauss et al., 2013), and IPV (Gordon & Chen, 2014; Keller et al., 2019). However, FOMO is positively associated with alcohol use (Przybylski et al., 2013; Riordan et al., 2015), a salient predictor of IPV. The current model represented in Figure 5 sought to examine the role of sleep as a proposed mediator between FOMO and IPV while accounting for alcohol use as a defined explanatory variable (Crane et al., 2016). The above model represents the direct and indirect effects of fear of missing out (FOMO) on psychological aggression perpetration and physical assault perpetration through alcohol use and problems (AUDIT) and total sleep scores. The model controlled for the
associations between outcome variables. While not pictured, the model also controlled for the association between mediators as well as controls (gender, sexual minority status, and relationship length).

Analysis revealed that alcohol use remained a significant explanatory variable for the relationship between FOMO and psychological and physical IPV. However, FOMO did not associate with physical IPV through sleep. Additionally, FOMO associated with psychological IPV through better sleep which is contrary to empirical and theoretical findings (C. Anderson & Platten, 2011; DeWall et al., 2009; Twenge et al., 2007). Inconsistent timeframes within measures may contribute to these findings. See the discussion section for further delineation of limitations and areas for future research.
Figure 6. Sleep Moderation of FOMO to Alcohol Path. This post-hoc analysis sought to clarify the role sleep problems may have on alternative paths. Extant literature defines FOMO as a precursor to alcohol use through deficits in relatedness (Przybylski et al., 2013; Riordan et al., 2015). Past research evidenced that sleep problems contribute to a myopic effect, limiting nuanced decision making, lowering inhibition, and drawing attention to salient cues (C. Anderson & Platten, 2011; Drummond et al., 2006; Goldstein-Piekarski et al., 2015; Harrison & Horne, 2000). Therefore, clinically significant sleep problems could strengthen the path from FOMO to alcohol use by increasing attention to, and salience of, perceptions of social exclusion or deficits in relatedness. This model aimed to test this exploration of theory by examining sleep as a moderator of the relationship of FOMO to alcohol use. The above model represents the direct and indirect effects of fear of missing out (FOMO) on psychological aggression perpetration and physical assault perpetration through alcohol use and problems (AUDIT). This model accounted for associations between outcome variables in addition to controlling for relationship length and mean differences between men and women and students who identify as sexual minorities versus heterosexual. I examined the bolded path for moderation by sleep group (poor or good quality sleepers). I did not find evidence that sleep moderated the path from FOMO to alcohol use. The
mismatched timeframes of study measures may account for this along with several other limitations detailed in the discussion.
Conflict Tactics Scale (CTS-2)

Please answer the following questions based on your CURRENT dating relationship. If you are not currently dating anyone, please answer the questions based on your most recent dating relationship. If you have never been in a dating relationship, please do not answer these items. No matter how well a couple gets along, there are times when they disagree, get annoyed with the other person, want different things from each other, or just have spats or fights because they are in a bad mood, are tired, or for some other reason. Couples also have many different ways of trying to settle their differences. This is a list of things that might happen when you have differences. Please circle how many times you did each of these things in the past twelve months, and how many times your partner did them in the past twelve months. If you or your partner did not do one of these things in the past twelve months, but it happened before, circle “7.” Please keep in mind that all information is kept strictly confidential!

How often did this happen in the past 12 months?

0 = This never happened.
1 = Once in the past twelve months.
2 = Twice in the past twelve months.
3 = 3-5 times in the past twelve months.
4 = 6-10 times in the past twelve months.
5 = 11-20 times in the past twelve months.
6 = More than 20 times in the past twelve months.
7 = Not in the past twelve months, but it did happen before.

1. I showed my partner I cared even though we disagreed.
2. My partner showed care for me even though we disagreed.
3. I explained my side of a disagreement to my partner.

4. My partner explained his or her side of a disagreement to me.

5. I insulted or swore at my partner.

6. My partner did this to me.

7. I threw something at my partner that could hurt.

8. My partner did this to me.

9. I twisted my partner’s arm or pulled his/her hair.

10. My partner did this to me.

11. I had a sprain, bruise, or small cut because of a fight with my partner.

12. My partner had a sprain, bruise, or small cut because of a fight with me.

13. I showed respect for my partner’s feelings about an issue.

14. My partner showed respect for my feelings about an issue.

15. I made my partner have sex without a condom.

16. My partner did this to me.

17. I pushed or shoved my partner.

18. My partner did this to me.

19. I used force (like hitting, holding down, or using a weapon) to make my partner have oral or anal sex.

20. My partner did this to me.

21. I used a knife or gun on my partner.

22. My partner did this to me.

23. I passed out from being hit on the head by my partner in a fight.

24. My partner passed out from a hit on the head in a fight with me.
25. I called my partner fat or ugly.
26. My partner called me fat or ugly.
27. I punched or hit my partner with something that could hurt.
28. My partner did this to me.
29. I destroyed something belonging to my partner.
30. My partner did this to me.
31. I went to a doctor because of a fight with my partner.
32. My partner went to a doctor because of a fight with me.
33. I choked my partner.
34. My partner did this to me.
35. I shouted or yelled at my partner.
36. My partner did this to me.
37. I slammed my partner against a wall.
38. My partner did this to me.
39. I needed to see a doctor because of a fight with my partner, but I didn’t.
40. My partner needed to see a doctor because of a fight with me, but didn’t.
41. I beat up my partner.
42. My partner did this to me.
43. I grabbed my partner.
44. My partner did this to me.
45. I used force (like hitting, holding down, or using a weapon) to make my partner have sex.
46. My partner did this to me.
47. I stomped out of the room or house or yard during a disagreement.
50. My partner did this to me.

51. I insisted on sex when my partner did not want to (but did not use physical force.

52. My partner did this to me.

53. I slapped my partner.

54. My partner did this to me.

55. I had a broken bone from a fight with my partner.

56. My partner had a broken bone from a fight with me.

57. I used threats to make my partner have oral or anal sex.

58. My partner did this to me.

59. I suggested a compromise to a disagreement.

60. My partner suggested a compromise.

39. I said I was sure we could work out a problem.

40. My partner was sure we could work it out.

61. I burned or scalded my partner on purpose.

62. My partner did this to me.

63. I insisted my partner have oral or anal sex (but did not use physical force).

64. My partner did this to me.

65. I accused my partner of being a lousy lover.

66. My partner accused me of this.

67. I did something to spite my partner.

68. My partner did this to me.

69. I threatened to hit or throw something at my partner.

70. My partner did this to me.
71. I felt physical pain that still hurt the next day because of a fight with my partner.

72. My partner still felt physical pain the next day because of a fight we had.

73. I kicked my partner.

74. My partner did this to me.

75. I used threats to make my partner have sex.

76. My partner did this to me.

77. I agreed to try a solution to a disagreement my partner suggested.

78. My partner agreed to try a solution I suggested.
**Alcohol Use Disorders Identification Test (AUDIT)**

1. How often do you have a drink containing alcohol?
   - Never
   - Monthly or Less
   - 2 to 4 times a month
   - 2 to 3 times a week
   - 4 or more times a week

2. How many drinks containing alcohol do you have on a typical day when you are drinking?
   - 0, 1 or 2
   - 3 or 4
   - 5 or 6
   - 7 to 9
   - 10 or more

3. How often do you have 4 (for women) / 5 (for men) or more drinks on one occasion?
   - Never
   - Less than monthly
   - Monthly
   - Weekly
   - Daily or almost daily

4. How often during the past 12 months have you found that you were not able to stop drinking once you had started?
   - Never
   - Less than monthly
5. How often during the past 12 months have you failed to do what was normally expected from you because of drinking?
   Never
   Less than monthly
   Monthly
   Weekly
   Daily or almost daily

6. How often during the past 12 months have you needed a drink first thing in the morning to get yourself going after a heavy drinking session?
   Never
   Less than monthly
   Monthly
   Weekly
   Daily or almost daily

7. How often during the past 12 months have you had a feeling of guilt or remorse after drinking?
   Never
   Less than monthly
   Monthly
   Weekly
   Daily or almost daily
8. How often during the past 12 months have you been unable to remember what happened the night before because you had been drinking?
   Never
   Less than monthly
   Monthly
   Weekly
   Daily or almost daily

9. In the past 12 months, have you or someone else been injured as a result of your drinking?
   No
   Yes, but not in the last 12 months
   Yes, during the last 12 months

10. In the past 12 months, has a relative, friend, doctor, or other health worker been concerned about your drinking or suggested you cut down?
    No
    Yes, but not in the last 12 months
    Yes, during the last 12 months

11. Now think of all kinds of alcoholic beverages combined, that is - any combination of cans of beer, glasses of wine, or drinks containing liquor of any kind. During the past 12 months, what is the largest number of drinks you had on any single day? _______

12. How often during the past 12 months did you become intoxicated or drunk from drinking any kind of beverage containing alcohol, whether it was wine, beer, whiskey, or any other drink?
    Never
    Less than monthly
About once a month

Several times a month

1-2 days a week

3-4 days a week

5-6 days a week

Every day
The Fear of Missing Out scale (FoMOs)

Below is a collection of statements about your everyday experience. Using the scale provided please indicate how true each statement is of your general experiences. Please answer according to what really reflects your experiences rather than what you think your experiences should be.

Please treat each item separately from every other item.

<table>
<thead>
<tr>
<th>Not at all true of me</th>
<th>Slightly true of me</th>
<th>Moderately true of me</th>
<th>Very true of me</th>
<th>Extremely true of me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. I fear others have more rewarding experiences than me.
2. I fear my friends have more rewarding experiences than me.
3. I get worried when I find out my friends are having fun with- out me.
4. I get anxious when I don’t know what my friends are up to.
5. It is important that I understand my friends ‘‘in jokes’’.
6. Sometimes, I wonder if I spend too much time keeping up with what is going on.
7. It bothers me when I miss an opportunity to meet up with friends.
8. When I have a good time it is important for me to share the details online (e.g. updating status).
9. When I miss out on a planned get-together it bothers me.
10. When I go on vacation, I continue to keep tabs on what my friends are doing.
**The Sleep Condition Indicator (SCI)**

<table>
<thead>
<tr>
<th>Thinking about a typical night in the last month …</th>
<th>0 – 15 min</th>
<th>16 – 30 min</th>
<th>31 – 45 min</th>
<th>46 – 60 min</th>
<th>≥ 61 min</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. … how long does it take you to fall asleep?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. … if you then wake up during the night … how long are you awake for in total? (add all the wakenings up)</td>
<td>0 - 1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5 - 7</td>
</tr>
<tr>
<td>3. … how many nights a week do you have a problem with your sleep?</td>
<td>Very good</td>
<td>Good</td>
<td>Average</td>
<td>Poor</td>
<td>Very poor</td>
</tr>
<tr>
<td>4. … how would you rate your sleep quality?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thinking about the past month, to what extent has poor sleep …</td>
<td>Not at all</td>
<td>A little</td>
<td>Somewhat</td>
<td>Much</td>
<td>Very much</td>
</tr>
</tbody>
</table>
5. … affected your mood, energy, or relationships?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little</th>
<th>Somewhat</th>
<th>Much</th>
<th>Very much</th>
</tr>
</thead>
</table>

6. … affected your concentration, productivity, or ability to stay awake?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little</th>
<th>Somewhat</th>
<th>Much</th>
<th>Very much</th>
</tr>
</thead>
</table>

7. … troubled you in general?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little</th>
<th>Somewhat</th>
<th>Much</th>
<th>Very much</th>
</tr>
</thead>
</table>

**Finally …**

8. … how long have you had a problem with your sleep?

<table>
<thead>
<tr>
<th>I don’t have a problem / &lt; 1 mo</th>
<th>1 – 2 mo</th>
<th>3 – 6 mo</th>
<th>7 – 12 mo</th>
<th>&gt; 1 yr</th>
</tr>
</thead>
</table>
VITA

Hannah Grigorian is a clinical psychology doctoral student at the University of Tennessee. She received her BA from Quinnipiac University. Her research interests include factors that increase the risk for intimate partner violence perpetration and victimization such as sleep quality, emotion dysregulation, and substance use.