

AGGRESSIVE BEHAVIORS AMONG COLLEGE STUDENTS: PARENTAL  
FACTORS, CALLOUS-UNEMOTIONAL TRAITS, AND ALCOHOL USE

A Thesis  
By  
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## **Abstract**

### **AGGRESSIVE BEHAVIORS AMONG COLLEGE STUDENTS: PARENTAL FACTORS, CALLOUS-UNEMOTIONAL TRAITS, AND ALCOHOL USE**

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Childhood aggressive behavior has been identified as the most significant antecedent and predictor of antisocial behavior in later adolescence and adulthood. Alcohol use and callous-unemotional (CU) traits have also been identified as correlates of aggressive behavior, and parental monitoring relates negatively with CU traits and substance use. In college students, intimate partner aggressive behaviors are fairly common. The present study served as a small-scale replication of Lee and Randolph's (2015) cross-sectional study with high school students, and examined the potential mediating role of alcohol use in the relationship between perceived parental monitoring and aggressive behavior in a college sample ( $N = 277$ ). Unlike the relationship found in high school students, there was no relationship between perceived parental monitoring and current aggressive behaviors among this college student sample. In a college sample, childhood aggressive behaviors were negatively related to parental monitoring, and positively related to current

aggressive behavior and IPV. Overall, callous-unemotional traits and childhood behavior accounted for limited variance in self-reported aggressive behavior, and self-reported alcohol use contributed very slightly to the prediction of intimate partner violence. The current study was limited by the use of a correlational design and homogeneous sample. Future studies should examine CU traits in the general population, should include women, and should include environmental variables in addition to individual-level variables.

*Keywords:* Aggression, interpersonal violence, parental monitoring, callous-unemotional, alcohol use, college students

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## **Dedication**

“Being Irish, he had an abiding sense of tragedy, which sustained him through temporary periods of joy.” – W. B. Yeats

This thesis, and all the work put into it, is dedicated to my grandmother Joan K. Vande Zande whose love of education inspired me to continue mine and gave me the strength when things seemed impossible, even though she passed away in the beginning of my graduate school career.

“When anyone asks me about the Irish character, I say look at the trees. Maimed, stark, and misshapen, but furiously tenacious.” – Edna O’Brien

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Running head: AGGRESSIVE BEHAVIOR AMONG COLLEGE STUDENTS

Aggressive Behaviors Among College Students: Parental Factors, Callous-Unemotional  
Traits, and Alcohol Use

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### Abstract

Childhood aggressive behavior has been identified as the most significant antecedent and predictor of antisocial behavior in later adolescence and adulthood. Alcohol use and callous-unemotional (CU) traits have also been identified as correlates of aggressive behavior, and parental monitoring relates negatively with CU traits and substance use. In college students, intimate partner aggressive behaviors are fairly common. The present study served as a small-scale replication of Lee and Randolph's (2015) cross-sectional study with high school students, and examined the potential mediating role of alcohol use in the relationship between perceived parental monitoring and aggressive behavior in a college sample ( $N = 277$ ). Unlike the relationship found in high school students, there was no relationship between perceived parental monitoring and current aggressive behaviors among this college student sample. In a college sample, childhood aggressive behaviors were negatively related to parental monitoring, and positively related to current aggressive behavior and IPV. Overall, callous-unemotional traits and childhood behavior accounted for limited variance in self-reported aggressive behavior, and self-reported alcohol use contributed very slightly to the prediction of intimate partner violence. The current study was limited by the use of a correlational design and homogeneous sample. Future studies should examine CU traits in the general population, should include women, and should include environmental variables in addition to individual-level variables.

*Keywords:* Aggression, interpersonal violence, parental monitoring, callous-unemotional, alcohol use, college students

Aggressive Behaviors Among College Students: Parental Factors, Callous-Unemotional Traits, and Alcohol Use

Disruptive behaviors are common in children; in fact, some level of these behaviors is considered normative. However, when these behaviors persist and increase in frequency and severity they become problematic. Prevalence of problematic disruptive behaviors among children varies between 4-16.6%. This problem exists worldwide, with an estimated 113 million children meeting the criteria for a disruptive behavior disorder (Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015). The presence of behavioral problems in early life predicts future psychopathology and functional impairments, such as antisocial behavior as well as substance use and dependence (Fergusson, Horwood, & Ridder, 2007). Many negative outcomes have been associated with early aggressive behaviors among college students including substance use and interpersonal aggression (Kaukinen, 2014).

**Disruptive Behavior among College Students**

**Interpersonal aggression.** Physical acts of intimate partner violence (IPV) are experienced by 7 million women and 5.5 million men every year in the United States, with around 35% of women and 28% of men experiencing IPV at some point in their lifetime (Whitaker, Murphy, Eckhardt, Hodges, & Cowart, 2013). Research suggests that a significant portion of IPV may have roots in adolescence. An estimated 9.8% of high school students experience physical IPV each year. Women who experienced physical violence in adolescence were at greater risk for experiencing subsequent victimization during their freshman year of college (Kaukinen, 2014). Moreover, victimization in adolescence is more significantly related to victimization in college than childhood

victimization. A history of dating violence perpetration was predictive of future victimization. In one study, men with a history of IPV perpetration were 13 times more likely to perpetrate dating violence again than those without a history (Kaukinen, 2014). A study of college students from 16 countries revealed that approximately 29% of college students perpetrate IPV each year, suggesting that rates of IPV increase through adolescence and peak in early adulthood (Whitaker et al., 2013).

Archer (2000) conducted a review of 56 studies examining sex differences associated with IPV. Women were significantly more likely to report using physical aggression toward their partners than men. However, men were more likely than women to report having physically injured their partners. Overall, college student perpetration and victimization rates of IPV mirror those of the general population. However, research suggests that IPV in college students may occur in mutually violent relationships, with both women and men in these relationships being victims and perpetrators of IPV (Kaukinen, 2014).

Some gender differences in the types of aggressive acts by college students have been highlighted in research. Hines and Saudino (2003) examined self-reported instances of psychological and physical aggression in 481 college students currently involved in romantic relationships. A majority of participants (82% of males, 86% of females) reported engaging in some form of psychological aggression (e.g., “Threatened to hit or throw something at my partner”) in the course of their relationship. When the chronicity of psychological aggressive acts was analyzed, female participants reported engaging in significantly more of these acts than their male counterparts. A smaller proportion of the sample reported perpetrating physical acts of aggression; 29% of males and 35% of

females reported using physical aggression in their current relationships (Hines & Saudino, 2003). Research by Kaukinen (2014) supports these trends, but also highlights that women are more likely than men to be victims of sexual violence in relationships, while men are more likely than women to be experience psychological victimization. Female college students in the same sample were most likely to attribute their use of aggression in relationships to anger, retaliation to emotional hurt, an effort to gain their partner's attention, jealousy, and stress. Very few women in the sample attributed their use of violence to acts of self-defense. Conversely, male college students were more likely to attribute using aggression in relationships as an attempt to prevent the escalation of their female partner's violence, anger, and frustration (Kaukinen, 2014).

**Trait aggression.** Trait aggression is a stable behavioral tendency to react to everyday life events in an aggressive manner. Trait aggression is measured using self-report questionnaires, such as the Buss-Perry Aggression Questionnaire (BPAQ). The BPAQ is comprised of individual ratings on several statements involving hostile or aggressive reactions to situations and how characteristic they are of them (e.g., Some of my friends think I am a hothead). Researchers compared a sample of nationally representative adults to psychology undergraduates at the University of Michigan on their self-reported level of trait aggression (Kalmoe, 2015). In general, the rates of trait aggression between adults and college students were similar. Although college students generally self-reported higher average rates of physical aggression, verbal aggression, anger, and hostility than adults, only verbal aggression rates in college students showed statistically significant elevation when compared to adults. Overall, trait aggression appears to be common in college students. Abasiubong, Abiola, & Udofia (2011)

assessed the levels of aggressive traits in 515 college students (59% arts, 40.5% medical). This study found that 45% of arts students and 35.4% of medical students reported overall trait aggression scores above the overall sample average.

**Substance use.** Substance use and aggressive behavior commonly co-occur, and often relate to significant social problems. Those who engage in both substance use and aggression are more likely to behave irresponsibly, put themselves or others at risk, and be intertwined in the legal system (Tomlinson, Brown, & Hoaken, 2016). Alcohol is the most widely used and abused psychoactive substance in the world (Tomlinson, Brown, & Hoaken, 2016).

Alcohol and other drugs are implicated in approximately 80% of offenses leading to arrests, such as domestic violence, property offenses, and driving under the influence (National Council on Alcoholism and Drug Dependence, Inc. [NCADD], 2016). Nearly 50% of inmates are clinically addicted to substances (NCADD, 2016). Alcohol, more than any other drug, is closely associated with violent crime (Tomlinson, Brown, & Hoaken, 2016; NCADD, 2016). The relationship between drugs and crime is even more pronounced in adolescents. Four out of every five adolescents in juvenile justice systems were under the influence of drugs while committing crimes, tested positive for drugs, committed a drug or alcohol offense, admit to substance abuse, or a combination (NCADD, 2016).

Alcohol use among college students is a widespread phenomenon. A review of 18 studies showed that college students consumed higher quantities and/or engaged in riskier consumption patterns than their non-college peers. Additionally, college students tended to drink more frequently and be at-risk for alcohol-use problems than their non-college

peers (Carter, Brandon, & Goldman, 2010). About four out of every five college students use alcohol at some point, and approximately half of those who drink engage in heavy episodic drinking (four or more drinks in one sitting for women; five or more drinks in one sitting for men; National Institute of Health [NIH], 2016). Many negative consequences result from college drinking, including death, assault, and injury. It is estimated that 1,825 college students die each year from alcohol-related unintended injuries (NIH, 2016). Further, 690,000 college students are assaulted by another student who has been drinking, and 97,000 students are victims of alcohol-related sexual assault (NIH, 2016; NCADD, 2016). The relationship between drug use and aggressive behavior is complex and difficult to disentangle. Questions arise as to whether drug use leads to criminal activity, criminal activity leads to drug use, if those who use drugs and commit crimes are predisposed to engage in both activities, and any potential mediating factors.

Substance use is an important predictor of aggressive behavior. Tomlinson, Brown, & Hoaken (2016) reviewed the literature on recreational drug use and aggressive behavior in studies published between 2003 and 2015. They consistently found that as levels of alcohol consumption increase, so did levels of physical aggression in men, but found mixed findings for women. However, the effect of substances on aggressive behavior is not always immediate. Margolin, Ramos, Baucom, Bennet, & Guran (2013) examined the relationship between aggression and substance use over two days in male and female college students. A significant relationship between substance use on day one was associated with aggressive behavior on day two for male participants only.

Alcohol use is associated with dating violence, although the exact nature of this relationship remains unclear. Some studies suggest that alcohol use is a risk factor for

later IPV perpetration (Vagi et al., 2013). Gidycz, Warkentin, & Orchowski (2007) propose that alcohol use increases the likelihood of IPV because alcohol may impair the victim's ability to resist unwanted physical or sexual advances or their ability to interpret warning cues of potential assault. They additionally suggest that alcohol may serve to alter one's response to conflict, such as increasing the likelihood of using violent force. Furthermore, Gidycz, Warkentin, & Orchowski (2007) found that alcohol use, in general, was not significantly associated with IPV perpetration. Instead, they suggest that the influence of alcohol use on IPV is likely to have more proximal links (i.e., drinking just prior to engaging in aggressive behaviors). Koss and Cleveland (1997) suggest that alcohol provides a perpetrator with justification to engage in aggressive behavior by diverting responsibility.

### **Predictors of Disruptive Behavior**

**Childhood aggressive behavior.** Childhood aggressive behavior has been identified as the most significant antecedent and predictor of disruptive and antisocial behavior in later adolescence and adulthood (Schaeffer, Petras, Ialongo, Poduska, & Kellam, 2003; Schaeffer et al., 2006). Aggression, however, is a difficult concept to define. Different fields, including academia, juvenile justice, and mental health systems, use a variety of terms to describe the same behavior. "Aggressive," "oppositional," "delinquent," "underaroused," and "antisocial" are used to describe persistent aggressive behaviors among youth. Moreover, aggression is a heterogeneous concept, and no single term captures the various presentations of these behaviors in youth populations. Behavioral science usually defines aggression as behavior that is intended to cause harm

to another, ranging from physical acts, such as hitting another, to more covert acts, such as lying or stealing (Escobar-Chaves and Anderson, 2008).

Not all aggressive behavior is maladaptive. In fact, many types of aggression can be classified as adaptive or developmentally appropriate in certain contexts. Wakefield (1992) introduced the concept of “harmful dysfunction” for classifying behaviors as disordered or maladaptive. In order for behavior to be considered a clinical condition, it must cause negative consequences for the individual *and* represent dysfunction in natural adaptive processes. Seen this way, the purpose of aggression is important to consider. In fact, there are certain instances when aggression may be important for survival of an individual. In these cases, adaptive aggression may take on the form of the classic “fight-or-flight” response. Maladaptive aggression, on the other hand, occurs independent of usual, definable contexts in which adaptive aggression is seen. Maladaptive aggression occurs outside of social values and norms and disregards the welfare of others. Maladaptive aggression occurs outside the service of common, social goals, and instead, focuses on goals of an individual. Unlike adaptive aggression, the causes, frequency, intensity, duration, and severity are unpredictable in maladaptive aggression (Connor, 2002).

Due to the heterogeneous nature of aggression, scientists have identified subtypes of aggressive behaviors. The broad domain of aggression is broken into smaller, coherent subtypes of more homogeneous behaviors. Aggression may take physical (e.g., punching or hitting), verbal (e.g., starting harmful rumors about another), or relational (e.g., intending to harm social relationships; Connor, 2002; Escobar-Chaves & Anderson, 2008) forms. As previously noted, aggression is often grouped by overt or covert

behaviors; the distinction between overt and covert aggression is empirically-derived and supported (Connor, 2002; Walker, Ramsery, & Gresham, 2004). Overt aggression is characterized by openly confrontational acts of physical aggression. This aggression may take the form of fighting or disobedience to authority. Conversely, covert aggressive acts are hidden, clandestine acts of aggression. Covert aggression is often concealed in an effort to avoid external social consequences, and can be manifested in actions such as lying and stealing.

Again, some level of antisocial and disruptive behaviors is seen as developmentally normative. Adaptive aggression can facilitate social assertiveness, competitiveness, and success in meeting daily needs among children and adolescents. Almost all children show some degree of aggressive behavior. Developmental observations found that around 50% of social exchanges between children, ages of 12-18 months, were described as disruptive. This rate decreased to 20% by the age of two as children develop language skills (Connor, 2002). Interpersonal conflicts among children provide important learning experiences to practice and utilize effective social strategies. In addition to the frequency of aggressive behavior, the type of aggression exhibited also changes across development. There is a general tendency for more physical forms of aggression, such as hitting, to decrease, and for verbal aggression to increase between the ages of two and four (Connor, 2002).

Adolescent violence, however, began increasing 50 years ago. Specifically, between 1985-1994, adolescent arrest rates increased by 150% in the United States, but after 1997, levels decreased and have remained steady (Connor, 2002). The reasons for the sharp increase in past adolescent violence rates are unclear, and improved assessment

and documentation may play a role. Following the sharpest peak of increased violence in the 1990s, youth violent crime rates have fallen, but these rates are still elevated in relation to decades prior. Aggressive and violent acts harm society in many ways. Medical treatment for injuries related to violent incidents costs an estimated \$2.3 billion in one year (Connor, 2002). Further, when both direct and indirect costs are included, youth aggression costs \$158 billion a year (Escobar-Chaves and Anderson, 2008). Youth aged 12 to 20 make up 13% of the U.S. population, and are responsible for 28% of single-offender violent crimes and 41% of multiple-offender violent crimes (Escobar-Chaves and Anderson, 2008).

**Callous-unemotional traits.** Callous-unemotional (CU) traits, such as lack of empathy and guilt, also relate to and predict later disruptive behaviors, including violent behaviors, IPV perpetration, and substance use. Baskin-Sommers, Waller, Fish, & Hyde (2015) examined the trajectories of CU traits among high-risk adolescent males, who had been charged with a felony or similarly serious offense, as well as the relationship between these trajectories and future violent behavior and substance use. Participants between the ages of 14-19 were assessed annually over a 6-year period ( $N = 1,170$ ). Adolescent participants were asked to report the frequency of use of nine substance groups: marijuana, opiates, cocaine, stimulants, ecstasy, sedatives, hallucinogens, inhalants, and amyl nitrate. High CU traits at age 14 increased the likelihood of self-reported severe and persistent forms of aggression, as well as substance use at age 19.

The relationship between CU traits and later substance use may differ between girls and boys. Wymbs et al. (2012) examined the relationship between conduct disorder (CD) symptoms and CU traits during 6<sup>th</sup> grade and reported substance use in 9<sup>th</sup> grade.

The initial participant pool included 521 middle school students, 51.6% of whom were male. Follow-up interviews were conducted 6, 12, 18, 24, and 36 months after; between 86 and 90% of the initial participant pool was retained for the first four follow-ups. CU traits were measured using parent and child self-report measures, while CD symptoms were measured using the Diagnostic Interview Schedule for Children (DISC), concurrent with parent and child self-reports. During the fall of their 9<sup>th</sup> grade year, participants completed self-report measures assessing the age of onset and frequency of alcohol and marijuana use. CU traits predicted, over and above CD symptoms, the onset of alcohol and marijuana use, and use-related impairments. Furthermore, the researchers found that different patterns of results for boy and girl participants. Boys who reported high CU traits and CD symptoms were most likely to report recurrent marijuana use, marijuana and alcohol use, and use-related impairments; however, they were not more likely to report alcohol use. Girl participants who reported low CU traits and high CD symptoms were more likely to report alcohol use, marijuana use, alcohol and marijuana use, and use-related impairments. On average, girls in this sample reported lower levels of CU traits and were more likely to report no CU traits relative to boy participants (Wymbs et al., 2012). Likewise, girl participants were less likely to report both CU traits and CD symptoms.

Four trajectories of CU traits have been reliably identified in research literature: stable high, increasing, decreasing, and stable low CU traits (Fanti, Colins, Andershed, & Sikki, 2015). Fanti et al. (2015) measured CU traits, conduct problems, Attention-Deficit/Hyperactivity Disorder (ADHD), and antisocial behaviors using both parent and child self-report measures ( $N = 1,311$ ). Children with high, stable CU traits exhibited

problematic relationships, conduct problems, and ADHD symptoms, as well as, low self-regulation, social competence, and empathy. Klingzell et al. (2016) used data from the Social and Physical Development, Interventions and Adaptation-Study, a longitudinal study of 2,542 children. These researchers collected data about children's conduct problems, CU traits, fearlessness, grandiose-deceitful traits, and impulsivity from parents and teachers. Children with high levels of CU traits exhibited high levels of conduct problems, fearlessness, grandiosity, deceitfulness, impulsivity, and increased need for stimulation. High CU traits also related to higher instances of substance use and violent behavior (Baskin-Sommers et al., 2015).

High, stable and increasing levels of CU traits in childhood are related to more disruptive adolescent behaviors. Those who maintain stable, high levels of CU traits are at the highest risk for serious antisocial outcomes during late adolescence and adulthood (Muratori et al., 2016). Children with decreasing and stable low CU traits are at the lowest risk of later antisocial outcomes. Much of the literature that investigates CU trait trajectories is male-dominated. As noted earlier, females report and exhibit less CU traits overall than males (Fanti, Demetriou, & Kimonis, 2013).

**Family Variables: Parental monitoring.** Adolescents with disruptive behavior problems often report having families with considerable stress. Family factors such as parental depression, family violence and disharmony, disorganization, abuse, poor supervision of children, harsh or inconsistent punishment, family structure changes (e.g. divorce and remarriage), and low involvement in the child's life are risk factors for childhood disruptive behaviors (Maughan, Christiansen, Jenson, Olympia, & Clark, 2005; Walker et al., 2004; Slutske et al., 1997). Specifically, youth who come from families

with abuse and conflict are more likely to be IPV perpetrators later in life (Vagi et al., 2013). Parental modeling of criminality or other antisocial behaviors also increase risk for antisocial behavior in their children. Likewise, there are several family factors that serve as protective factors against the development of disruptive and antisocial behaviors, but the use of parental monitoring has been repeatedly shown to have a strong negative relationship with youth aggressive behavior involvement (Morton-Simons, Chen, Hand, & Haynie, 2008; Walker et al., 2004).

Parental monitoring is one of the main familial predictors of lower levels of youth aggressive behaviors and substance use. Parental monitoring is a fusion of communication between parents and their child with the addition of supervision. It is believed that parental monitoring communicates parental interest, as well as, increasing the feelings of safety and security in children (e.g., “How often does at least one of your parents know where you are after school?”). Lower parental monitoring has been associated with the engagement of risky behaviors during adolescence and early adulthood (Patlock-Peckham, King, Morgan-Lopez, Ulloa, & Moses, 2011). Child-reported perception of parental monitoring has been shown to be negatively correlated with youth aggression (Van Ryzin, Fosco, & Dishion, 2012; Leadbeater, Banister, Ellis, & Yeung, 2008). This finding remains even after controlling for age, gender, living area, and parental education in both American and South Korean samples (Lee & Randolph, 2015). Higher levels of parental monitoring are shown to be associated with lower levels of alcohol use and drug use in general in emerging adult populations (Patlock-Peckham et al., 2011; Dorius, Bahr, Hoffman, and Harmon, 2004). Beck, Boyle, & Boekeloo (2003) examined the association between parental monitoring and adolescent alcohol risk in 444

adolescents. This study revealed that adolescents who reported high levels of parental monitoring were less likely to engage in a variety of alcohol-risk behaviors, such as hanging out with drinking friends. However, parental monitoring was not related to drinking within the past 30 days. This suggests that parental monitoring may reduce the risk of when adolescents are exposed to alcohol, but may not be sufficient in reducing the likelihood of high-risk behaviors. Similarly, in college student populations, low parental monitoring predicted heavy episodic drinking, but not alcohol use frequency (Walls, Fairlie, & Wood, 2009).

### **Limitations of Previous Studies**

The current body of literature is lacking in several areas. A majority of the studies on disruptive and antisocial behavior employ male and/or incarcerated individuals as participants (Baskin-Sommers et al., 2015). This leaves a significant lack of knowledge about aggressive behavior in women, adolescents, and those in the community. While many studies look at the relationship between perceived parenting practices and disruptive behavior (e.g., Van der Graaff et al., 2012; Larsen & Dehle, 2007), perceived parenting practices and later alcohol use (e.g., Lee & Randolph, 2015), and antisocial behavior and alcohol use (e.g., Tomlinson et al., 2016), they are rarely examined together.

As an exception, Lee and Randolph (2015) examined alcohol and cigarette use as a mediating factor in the relationship between parental monitoring and aggressive behavior. The potentially important factor of CU traits was not examined in this study. Their sample included 3,784 American and 3,079 South Korean 10<sup>th</sup> graders. The two samples differed greatly by age: 41% of the American sample was age 16 or older,

whereas 78% of the South Korean sample was age 16 or older. Youth aggression was measured using three culturally-specific dichotomous questions, which were somewhat different for American and South Korean participants (e.g., Korean participants were asked if they “have severely beaten others,” while American participants were asked if they “got into a serious fight in school or at work?”). Perceived parental monitoring and self-esteem were measured using self-created Likert scaled items, and participants reported their cigarette and alcohol use. Consistent with previous findings (Van Ryzin et al., 2012; Leadbeater et al., 2008), American and South Korean youth who perceived greater parental monitoring were less likely to report engaging in aggressive behaviors. Analyses revealed that, for both American and South Korean youth, the relationship between parental monitoring and aggression was fully mediated by cigarette use, alcohol use, and self-esteem (Lee & Randolph, 2015). There were no gender differences.

### **Present Study**

The present study sought to serve two main purposes. First, the current study tested the potential mediating effect of alcohol use in the relationship between perceptions of parental monitoring and disruptive behavior (i.e., intimate partner violence and trait aggression) in a college sample of both males and females. Essentially, this served as a replication of Lee and Randolph (2015) among a sample of American college students utilizing established measures and focusing on aggressive behaviors previously established as common among college students. In addition, this study explored the utility of the individual difference variable of CU traits in the prediction of intimate partner violence after controlling for childhood aggression history and alcohol use.

Consistent with the findings of Lee and Randolph (2015), it was hypothesized that alcohol use would mediate the relationship between perceptions of parental monitoring and intimate partner aggression, as well as, trait aggression in a sample of college students (See Figure 1). In addition, it was hypothesized that alcohol use and parental monitoring would account for additional variance in both intimate partner violence and aggressive behavior after controlling for CU traits and childhood aggressive behavior in a sample of college students. Past research has found mixed results as a function of gender, and Lee and Randolph (2015) did not find gender differences. Thus, hypotheses were tested without consideration of subject gender.

## **Methods**

### **Participants**

A statistical power analysis (Faul, Erdfelder, Buchner, & Lang, 2009) indicated that a sample of at least 262 college students would be sufficient to detect the same level of correlational relationships found in preceding research on similar concepts ( $r = .2$ ,  $\alpha = .05$ ,  $\beta = .05$ ). Participants consisted of 289 male and female college students recruited through the Appalachian State University Psychology Department subject pool. Twelve cases were removed from the sample. Five participants were excluded due to missing data on all items; seven participants were excluded due to outlier reporting of alcohol consumption (i.e., three standard deviations or more away from the mean) leaving a final sample of 277 (Columbia, n.d.). The majority ( $n = 195$ ; 67.5%) of participants were female, were freshmen ( $n = 157$ ; 54.3%) and sophomores ( $n = 84$ ; 29.1%), and were 18-19 (77.5%;  $M = 19.13$  [ $SD = 1.15$ ]) years of age.

**Procedures**

Participants were recruited through the subject pool at Appalachian State University. The Psychology Subject Pool consisted of undergraduate students enrolled in psychology classes who wished to participate in psychology studies in order to fulfill Experiential Learning Credits (ELCs). ELCs could be fulfilled through research participation or alternatives to avoid coercion. Students who chose to fulfill ELCs with study participation registered for studies through SONA. SONA is an experiment management system through Appalachian State University's Psychology Department, which allows current students, aged 18 years or older, to choose to participate in various studies.

Once participants selected and registered to participate in the present study, they were redirected to an electronic survey. Prior to participating in the survey, participants granted informed consent, including an explanation of the study, contact information for principal researchers, and instructions that proceeding to the study was interpreted as informed consent to participate (see Appendix B). The online survey had to be completed in a single session and took approximately 60 minutes. No identifiable information from the participants was collected. In an effort to further protect the anonymity of participants, instructions suggested that participants complete the survey in a private location. Survey questions included items assessing the participants' demographic information, the Alcohol Consumption Measure, Parental Monitoring Assessment, Inventory of Callous-Unemotional Traits, Dating Violence Perpetration, and Child's Social and Physical Aggression Measure. Participants were awarded two ELCs for their participation in the study.

## Measures

**Demographic Questionnaire.** (Appendix C). The Demographic Questionnaire asked participants several questions about various aspects of their identity. This included gender, age, race, ethnicity, Greek affiliation, religion, and their involvement in athletics.

**Alcohol Consumption Measure.** (ACM; Dillard, Midbow, & Klien, 2009; Appendix D). The ACM is a four-item self-report measure assessing the frequency and quantity of drinking in the past week and past month. Participants reported a numerical value for each of the four items, such as, "How many times in a typical month do you drink alcohol?" and "How many drinks do you typically have at one time?" Dillard, Midbow, & Klien (2009) surveyed college student drinking after their first semester of college and then after their second semester of college. Scale internal consistency estimates were .81 and .87 after time one and time two, respectively. A new variable was created to estimate how many drinks the participants had in an average each month. This new variable was computed by using the score they provided for the question "How many drinks do you typically have at one time?" and then multiplying that by their answer for the question "How many times in a month do you drink alcohol?" This new variable was called Alcohol Quantity-Frequency. Seven outliers were removed from the data set due to being extreme outliers.

**Parental Monitoring Assessment.** (PMA; Small & Kerns, 1993; Appendix E) The PMA is an eight-item measure that assesses the extent to which parents are aware of the whereabouts, friends, and social activities of their children. Sample items include, "My parent(s) knew who my friends were," and "When I went out at night, my parent(s) knew where I was." Responses are rated on a 5-point Likert scale ranging from 0 = never

to 4 = always. Items are added together to create a total score ranging from 0 to 40. Higher total PMA scores indicate higher levels of parental monitoring. The creators found an alpha of .87 (Small & Kerns, 1993). Patlock-Peckham et al. (2011) used the PMA in a study examining college student drinking habits that found that the PMA predicted college drinking behavior, providing support for predictive validity. Furthermore, they found alpha reliabilities from .88 to .93. The current study found a comparable alpha reliability of .9, which qualifies as excellent (Kline, 1999).

**Inventory of Callous- Unemotional Traits.** (ICU; Frick, 2004; Kimonis et al., 2008; Appendix F). The ICU is a 24-item self-report measure of common behaviors that are associated with unemotional, careless, callous, and uncaring traits (e.g., “I feel bad or guilty when I do something wrong”). Items are rating using a four-point Likert scale, from 0 (not at all) to 3 (definitely true). Responses are totaled to create a sum ICU score ranging from 0 to 72. Three participants failed to answer one question, so an average was taken from their 23 other responses to substitute for the missing data. Higher scores indicate greater presence of CU traits. Ciucci, Baroncelli, Franchi, Golmaryami, & Frick (2013) found an internal consistency of ( $\alpha = .81$ ). The current study also found an alpha reliability of .81 which is within the good range (Kline, 1999). Kimonis et al. (2008) found that the ICU showed convergent validity with scales of antisocial behaviors, including The Antisocial Process Screening Devise (APSD), psychophysiological indices of constricted emotion, and self-reported measures of aggression and delinquency.

**Buss-Perry Aggression Questionnaire Short Form.** (BPAQ-SF; Bryant & Smith, 2001; Kalmoe, 2015; Appendix G). The BPAQ-SF is a 12-item measure designed to assess current aggressive tendencies. Items are rated using a six-point Likert scale

ranging from 1= “completely true for me” to 6 = “completely false for me.” Items assessed four areas of aggression: physical (e.g., “Give enough provocation, I may hit a person”), verbal (e.g., “I can’t help getting into arguments when people disagree with me”), anger (e.g., “Sometimes I fly off the handle for no good reason”), and hostility (“Other people always seem to get the breaks”). Items are totaled for a sum score ranging from 12 to 72. Valdivia-Peralta, Fonseca-Pedrero, Gonzalez-Bravo, & Lemos-Giraldez (2014) examined the psychometric properties of the BPAQ and found test-retest reliabilities over nine weeks ranging from  $\alpha = .72$  to  $\alpha = .80$ . Additionally, they examined the convergent validity by comparing the Psychological and Physical Aggression of the Conflict Tactics Scale 2 (CTS-2) resulting in a moderate correlation between the two measures ( $r = .35$ ). The current study found an overall alpha reliability of .9, which falls in the excellent range (Kline, 1999).

**Dating Violence Perpetration and Victimization Measure.** (IPV; Coker et al., 2014; Appendix H) The Dating Violence Perpetration and Victimization Measure is a 10-item self-report consisting of dating violence victimization and dating violence perpetration subscales. Only the five dating violence perpetration items were used in this study. Response choices include “never,” “1-2 times,” “3-5 times,” and “6 or more times.” Perpetration of any dating violence was concluded if any of the five items were given a yes response. Items include, “threaten to hurt a current or previous boyfriend or girlfriend” and “damage something on purpose that was important to a boyfriend or girlfriend.” This measure has been utilized in the research of dating violence victimization and perpetration in high school students and has been shown to have an alpha coefficient of .80 for the perpetration scale (Coker et al., 2014). A Domestic

Violence Perpetration total score was created by summing the answers to the five questions relating to perpetration and was labeled IPV. Reliability analyses were conducted on the scale of Domestic Violence Perpetration questions, revealing an alpha of .72, which is acceptable (Kline, 1999).

**Child's Social and Physical Aggression Measures.** (CSPAM; Glowacz, Veronneau, Boet, & Born, 2013; Appendix I). The CSPAM assesses participants' social and physical aggressive behaviors between the ages of 10 and 14 using a three-point Likert scale (never, once or twice, three or more times). Questions addressing social aggression include "Making fun of other people," and "Using inappropriate language with other children." Items assessing physical aggression include "Using force to take a peer's money or property." Glowacz, et al. (2013) examined the relationship between childhood aggression at age 10 and age 14. Social and physical self-reported aggressive behavior at age 10 were significantly related to social and physical aggressive behaviors at age 14 ( $r = .18, p < .001$ ;  $r = .25, p < .001$ ). The current study used both social and physical aggressive behavior scales together to create one overall CSPAM total score due to their close relation to each other and because participants were asked to think back to between the ages of 10-14 to answer the questions. The alpha reliability for the scale in the current study was .74, which falls within the acceptable range (Kline, 1999).

## Results

Descriptive statistics were calculated for the Alcohol Consumption Measure (ACM), Parental Monitoring Assessment (PMA), Inventory of Callous-Unemotional Traits (ICU), Buss-Perry Aggression Questionnaire Short Form (BPAQ – SF), Dating Violence Perpetration and Victimization Measure (IPV), Child's Social and Aggression

Measures (CSPAM). Means, standard deviations, and ranges are recorded in Table 2.

Bivariate correlations were calculated between ICU total scores, BPAQ-SF total scores, PMA total scores, CSPAM total scores, alcohol quantity-frequency, and IPV scores (see Table 3). As expected, a positive correlation was found between IPV scores and BPAQ-SF total scores  $r = .36, p < .001$  and between IPV scores and CSPAM scores,  $r = .28, p < .01$ . Additionally, a positive correlation was found between BPAQ-SF scores and CSPAM scores,  $r = .37, p < .001$ . As expected, a negative correlation was found between CSPAM scores and PMA scores,  $r = -.15, p < .001$ . ICU scores positively correlated with BPAQ – SF total scores ( $r = .26, p < .001$ ), CSPAM scores ( $r = .23, p < .001$ ) and alcohol quantity-frequency ( $r = .14, p = .02$ ), and negatively correlated with PMA ( $r = -.35, p < .001$ ). Similarly, consistent with prediction, a negative correlation was found between alcohol quantity-frequency and PMA scores,  $r = -.19, p = .001$ .

In order to test the hypothesis that alcohol use would mediate the relationship between perceived parental monitoring, as measured by the PMA, and aggressive behaviors, as measured by the BPAQ – SF, and IPV, evidence of mediation was first explored. The first step in assessing mediation is to examine the correlations between each of the variables involved in the proposed mediational relationship (Pierce, 2003). Since the PMA did not correlate with the BPAQ – SF ( $r = -.10, p = .09$ ) or the IPV ( $r = -.07, p = .23$ ; see Table 2) there was no need to further test for alcohol use as mediating the relationship between perceived parental monitoring and aggressive behaviors.

To test the hypothesis that parental monitoring and alcohol use would significantly add to the prediction of aggressive behavior, as assessed by the BPAQ and the IPV, among college students beyond what was explained by CSPAM and ICU scores

two stepwise regressions were performed. The ICU total score and the CSPAM total were entered in Step 1, and perceived parental monitoring (PMA) scores and alcohol quantity-frequency scores were entered in step 2. The first analysis utilized the BPAQ – SF total score for the criterion variable. The CSPAM total score and ICU total score accounted for approximately 14.6% of the variance ( $F(2, 249) = 21.36, p < .001, f^2 = .17$ ) in the BPAQ scores. Contrary to the hypothesis, the addition of PMA scores and alcohol quantity-frequency scores did not significantly add to the prediction of BPAQ – SF scores ( $\Delta F(2, 247) = 1.33, p = .265$ ).

The second regression analysis utilized the IPV score as the criterion variable. The CSPAM total score and ICU total accounted for approximately 5.4% of the variance ( $F(2, 258) = 5.43, p = .005, f^2 = .042$ ) in the IPV scores. However, the ICU did not account for any of the variance in IPV, consistent with the lack of a univariate correlational relationship. The addition of PMA scores and alcohol frequency accounted for an additional 2.8% of the variance in IPV scores (PMA:  $\Delta F(2, 256) = 3.90, p = .022$ , although only alcohol quantity-frequency contributed to the prediction. See Table 4 for the results of the multiple regression analyses.

### **Discussion**

Among a college sample, self-reported childhood aggressive behaviors related to self-reported aggressive tendencies and intimate partner violence perpetration, and negatively related to perceived parental monitoring, supporting previous research. In addition, perceived parental monitoring was negatively related to alcohol quantity-frequency, but, counter to expectations, did not predict current aggressive behaviors as was found in a study with high school students (Lee & Randolph, 2015). Contrary to

hypotheses, self-reported alcohol consumption and perceived parental monitoring did not add to the prediction of self-reported aggressive tendencies above and beyond that accounted for by childhood aggression and callous-unemotional traits; alcohol use accounted for a very minor portion of the variance in self-reported dating violence perpetration beyond childhood aggression and callous-unemotional traits.

Contrary to the hypothesis, the current study did not replicate the results found in Lee and Randolph's (2015) analysis of American and South Korean 10<sup>th</sup> grade high school students. Lee and Randolph (2015) found that the relationship between parental monitoring and aggression was fully mediated by cigarette use, alcohol use, and self-esteem. Contrary to Lee and Randolph's (2015) findings, there was no relationship between retrospective reports of parental monitoring and currently reported interpersonal violence perpetration or general aggressive tendencies. The current study has several differences from Lee and Randolph's (2015). Lee and Randolph's (2015) sample consisted of 6,863 high school 10<sup>th</sup> graders (3,784 American students and 3,079 South Korean students); whereas, the current sample was comprised of 289 American college students of all class ranks. The homogeneity of age and larger sample size of Lee and Randolph's participants (2015) may have put them at an advantage for finding small, but meaningful effects that would be harder to detect in a smaller sample, such as mediation effects, despite a power analysis suggesting an adequate sample size. In addition, while 38% of the current sample engaged in some form of IPV perpetration in their lifetime, the levels on the measure used were relatively low. The age difference itself may account for the lack of replication. High school students generally live with their parents and are more likely to be in frequent contact with them, whereas, college students often live apart

from their parents and contact is less frequent (Shatkin, 2015). Living with parents, and having them consistently engage in parental monitoring behaviors may have a larger impact on students' behavior. It may also be the case that less aggressive, especially physically aggressive, young adults are more likely to attend and succeed in college.

Perceived parental monitoring significantly and negatively related to alcohol use, childhood aggression, and callous-unemotional traits, which is consistent with previous literature (Patlock-Peckham et al., 2011); Van Ryzin, Fosco, & Dishion, 2012; Leadbeater, et al., 2008). The current sample was relatively young, increasing the odds that perceptions of parental monitoring on drinking behavior seen in high school populations remained.

Regression analyses revealed that a small amount of variance in current aggressive behavior was accounted for by childhood aggression and CU traits, more so for aggressive tendencies assessed using the BPAQ than for dating violence perpetration. Contrary to expectations, alcohol quantity-frequency did not add to the prediction of aggressive tendencies although alcohol use added a bit to the prediction of self-reported dating violence perpetration. Our sample was made up exclusively of college students; previous research has shown that alcohol consumption is relatively normative in college students, with about four out of five reporting alcohol consumption (NIH, 2016). In addition, college students consume higher quantities and/or engage in riskier consumption patterns than non-college same-age peers (Carter et al., 2010). This normative view of risky, frequent, or high quantity drinking in college communities may account for the limited relationship with aggressive behavior measures because less aggressive and deviant individuals are also consuming alcohol. Our sample reported

variable, but sometimes high, levels of alcohol use (see Table 2 for alcohol measure descriptive statistics). In addition, the current study utilized retrospective self-reports of aggressive behavior, and alcohol use. If alcohol use and aggressive behavior were reported by observers, rather than self-reported, it may have removed some of the bias of self-reporting. In addition, the present measures did not allow for assessment of the proximal time relationship between alcohol and aggressive behavior. It has been shown in studies that as alcohol consumption increased, the likelihood of engaging in aggressive behavior within the next two days was greatly increased (Margolin et al., 2013).

As noted above, alcohol quantity-frequency accounted for a small portion of the variance in dating violence perpetration in the current sample. However, the practical significance of the relationship appears minimal. Studies show that alcohol use is associated with dating violence; however, the exact nature of this relationship is still unclear. Gidycz et al. (2007) offer one theory to explain the relationship, which may also explain the limited relationship between the two in the current study. Gidycz et al. (2007) found that overall alcohol use was not significantly related to IPV perpetration, but instead, the influence may be more proximal, such as drinking immediately before may increase the likelihood of engaging in aggressive behaviors. The present study did not examine alcohol use and IPV in context or in real time, which may explain the limited relationship. Gidycz et al. (2007) also theorize that alcohol use increases the likelihood of IPV because it may impair the victim's ability to prevent unwanted advances or interpret warning cues. The current study viewed IPV perpetration only, not victimization, which may also explain the lack of relationship between IPV and alcohol quantity-frequency.

Perceived parental monitoring did not account for variance in self-reported dating violence perpetration as hypothesized. The relationship between IPV and perceived parental monitoring has not been previously studied. There may be a difference between the types of aggression studied in previous parental monitoring studies and IPV. IPV and perceived parental monitoring was not found to be significantly related, which may mean that parental monitoring has little effect on these behaviors as compared to alcohol use behaviors. It is unclear why parental monitoring has a greater effect on alcohol use, but one possibility may be that behaviors that occur between intimate partners may be less controllable or influenced by parental monitoring. We did not assess other parenting behaviors that may relate to IPV perpetration such as being raised in a home with domestic violence (Kaukinen, 2014).

A strong negative relationship between callous-unemotional traits and perceived parental monitoring emerged. Callous-unemotional traits are usually defined as those that lack empathy and guilt, and present a disregard for others' thoughts, feelings, or needs. This definition can be seen reflected in the items of the ICU: "I feel bad or guilty if I do something wrong;" "I seem very cold and uncaring towards others;" and "I do not care if I get in trouble." Parental monitoring, on the other hand, reflects that a parent is interested in what the child is doing, but also increases feelings of safety and security in children (Van Ryzin et al., 2012; Leadbeater et al., 2008; Patlock-Peckham et al., 2011; Dorius, Bahr, Hoffman, & Harmon, 2004). Parental Monitoring (Small & Kerns, 1993) items included: "My parent(s) usually knew what I did after school;" "I talked to my parent(s) about the plans I had with my friends;" and "If I was going to be home late, I was expected to call my parent(s) and let them know." Modeling has been shown to be an

important and powerful tool for learning. It seems plausible that parents model pro-social behaviors such as empathy and regard for others through behaviors such as parental monitoring techniques. This suggests that parental monitoring may buffer children from developing callous-unemotional traits (Walker et al., 2004; Morton-Simons et al., 2008).

Among this sample of female and male undergraduate college students, self-reported childhood aggressive behaviors and callous-unemotional traits were related to aggressive behaviors later in life. This relationship is consistent with previous findings that childhood aggressive behavior is the best predictor of later antisocial and aggressive behavior (Schaeffer et al., 2003; Schaeffer et al., 2006). This finding is also consistent with the four trajectories of CU traits. High, stable, CU traits in childhood are related to serious disruptive and antisocial behaviors late in life (Muratroi et al., 2016). Also congruent with these findings, was the finding that callous-unemotional traits and childhood aggressive behavior were related to intimate partner violence perpetration, although accounting for little overall variance. It has been found that intimate partner violence peaks at early adulthood and studies have shown that 29% of college students are perpetrators of intimate partner violence each year (Whitaker et al., 2013). Previous studies found that college populations mirrored the general population when it came to intimate partner violence perpetration (Archer, 2000). In the current sample around 38.7% ( $n = 112$ ) admitted to engaging in intimate partner violence perpetration. Part of the discrepancy between the current study and previous literature may be related to the measures used. Whitaker et al. (2013) looked at rates of IPV in college students within in the past year, but the current study asked if participants ever engaged in these behaviors.

**Limitations and Implications**

There are several limitations to the current study. The most prominent limitation is that the sample was much smaller than Lee and Randolph's (2015) sample and may have prevented us from detecting small effects. Although, it should be noted, that the power analysis suggested that this sample size would be adequate to find the effects we sought to find. Additionally, our sample was fairly homogeneous, consisting mostly of white, college students aged 18-19, comparatively, a more heterogeneous sample would allow for generalized conclusions. The Appalachian region is predominantly white, and the current sample was 81.7% white. Currently, 17% of all students enrolled in American colleges are Hispanic; the current sample had 9.3%. In all of America, 14% of college students are black, while the current sample was only comprised of 3.8% (National Center for Education Statistics, 2017). This disparity between the national average college population and that of the current sample limits the ability to generalize to more U.S. college students. Additionally, the present sample was mostly comprised of freshman and sophomore college students enrolled in psychology courses at a southeastern university in the United States; this again may limit generalization of findings. In order to increase knowledge on the subject and generalize more fully, it would be beneficial to conduct the same study on a non-college sample of the same age and demographics.

Another limitation of the current study was the data collection method utilized. The current research was cross-sectional and correlational, allowing for exploration of relationships between variables, but not causal inferences. All the measures used in the current study were self-reports and many assessed sensitive constructs (e.g., alcohol use,

dating violence perpetration). For example, data currently does not exist to show how truthful self-reported IPV perpetration is (e.g., compared to arrest records or domestic abuse records). Additionally, most of the research done on callous-unemotional traits occurs within justice system populations. The current study used a sample of college students, which would be expected to report lower levels of CU traits than incarcerated populations. In addition, many of the participants in the present study reported no current aggressive behaviors, resulting in a floor effect for these measures.

However, this study helped in the current movement to research callous-unemotional traits in women. Additionally, it is the only study, to our knowledge, to employ a general sample of college students. This study replicated previous findings of the relationship between perceived parental monitoring and callous-unemotional traits (Van Ryzinet al., 2012; Leadbeater et al., 2008), but in a college sample, suggesting that this relationship may remain significant into young adulthood.

Much of the current research literature related to aggressive behaviors and CU traits has been completed on men and/or offenders whereas the current study used male and female college students. Due to the lack of research regarding CU traits in women, it would be beneficial to the scientific community for future research to focus on CU traits and aggression in female inmates, as well as, groups of women in the general population.

Around 39% of the current study's sample admitted to engaging in intimate partner violence of some sort. It may be beneficial for future research to identify different types of intimate partner violence (e.g., psychological and physical), and potentially intervene earlier. Environmental variables, such as the use of alcohol, may be implicated in proximal intimate partner violence; alcohol use may be an important area to target in

IPV prevention and response efforts on college campuses (Vagi et al., 2013). Each year, 690,000 college students are assaulted by another student who has been drinking and 97,000 students are victims of alcohol-related sexual assault (NIH, 2016; NCADD, 2016). Due to alcohol use's relationship to proximal violence in relationships *and* strangers, it again may be an important area for further study and intervention.

The current study was the first to examine the relationships between CU traits, current aggressive behavior, alcohol quantity-frequency, and perceived parental monitoring among college students. Self-reported childhood aggressive behaviors related to self-reported aggressive tendencies and IPV perpetration, and negatively related to self-reported parental monitoring. Self-reported parental monitoring was negatively related to alcohol quantity-frequency, which largely replicated previous research findings. The high rates of self-reported IPV perpetrations suggest the importance of better understanding the proximal relationship between alcohol use and IPV as well as other environmental and attitudinal variables among college students.

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Table 1.  
*Descriptive statistics of sample demographics.*

		Frequency	Percentage	Mode
Gender	Female	195	67.5	Female
	Male	92	31.8	
	Transgender	2	.7	
Age	18	72	24.9	19
	19	152	52.6	
	20	34	11.8	
	21	19	6.6	
	22	8	2.8	
	23	1	.3	
	30	1	.3	
Race/Ethnicity	Asian	5	1.7	White
	Black	11	3.8	
	Hispanic/Latino	27	9.3	
	White	236	81.7	
	Other	9	3.1	
Class Rank	Freshman	157	54.3	Freshman
	Sophomore	84	29.1	
	Junior	30	10.4	
	Senior	16	5.5	

Table 2.  
*Descriptive statistics of each measure.*

	Range	Mean	Standard Deviation
AMC: How many times in a typical month do you drink alcohol?	0 - 45	4.39	5.3
AMC: How many drinks have you had in the past week?	0 - 36	2.93	5.08
AMC: How many drinks do you have in a typical week?	0 - 30	3.08	4.46
AMC: How many drinks do you typically have at one time?	0 – 13.5	2.91	2.6
AMC: Alcohol Quantity-Frequency	0 – 75	14.46	17.88
PMA	8 - 40	34.47	5.15
ICU	20 - 57	35.97	6.28
BPAQ – SF	12 - 56	23.07	8.85
IPV	5 -17	5.95	1.83
CSPAM	12 -29	16.40	2.97

*Note: Alcohol Consumption Measure (AMC), Parental Monitoring Assessment (PMA), Inventory of Callous Unemotional Traits (ICU), Buss-Perry Aggression Questionnaire (BPAQ – SF), Dating Violence Perpetration and Victimization Measure (IPV), Child’s Social and Physical Aggression Measure (CSPAM)*

Table 3.

*Bivariate correlations between IPV scores, ICU scores, BPAQ-SF scores, PMA scores, CSPAM scores, and alcohol quantity-frequency scores.*

		IPV	ICU Total	BPAQ Total	CSPAM Total	Alcohol Quantity-Frequency	PMA
IPV	Pearson Correlation	1	.02	.36**	.28**	.19**	-.07
ICU Total	Pearson Correlation	.05	1	.36**	.23**	.14*	-.35**
BPAQ Scores	Pearson Correlation	.36**	.36**	1	.37**	.02	-.10
CSPAM Scores	Pearson Correlation	.28**	.23**	.37**	1	.27**	-.15**
Alcohol Quantity-Frequency	Pearson Correlation	.19**	.14*	-.02	.27**	1	-.19**

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

*Note: Parental Monitoring Assessment (PMA), Inventory of Callous Unemotional Traits (ICU), Buss-Perry Aggression Questionnaire (BPAQ – SF), Dating Violence Perpetration and Victimization Measure (IPV), Child's Social and Physical Aggression Measure (CSPAM)*

Table 4.  
*Regression model of aggressive behaviors predicted by perceived parental monitoring (PMA) and alcohol quantity-frequency.*

Criterion	Step	Predictors	$\beta$	$t$	Significance	R	R <sup>2</sup>	$\Delta R^2$
BPAQ	1					.383	.146	.146**
	2	ICU	.297	3.656	< .001	.394	.156	.009
		Childhood behavior	.817	4.437	.265			
		PMA	-.048	-1.632	.104			
		Alcohol Q-F	-.010	-.097	.923			
IPV	1					.201	.040	.041**
	2	ICU	.003	.209	.834	.262	.069	.028**
		Childhood behavior	.104	3.159	.002			
		PMA	-.032	2.070	.089			
		Alcohol Q-F	.011	-1.706	.039			

\*\* significant at the 0.01 level.

\* significant at the 0.05 level.

*Note: Alcohol Quantity-Frequency (Alcohol Q-F), Parental Monitoring Assessment (PMA), Inventory of Callous Unemotional Traits (ICU), Buss-Perry Aggression Questionnaire (BPAQ – SF), Dating Violence Perpetration and Victimization Measure (IPV), Childhood behavior (CSPAM)*

Figure 1. Hypothesized mediation model.



## Appendix A



**INSTITUTIONAL REVIEW BOARD**  
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**To:** Stephanie Moss  
Psychology  
CAMPUS EMAIL

**From:** Lisa Curtin, PhD, IRB Chairperson  
**Date:** 2/16/2017  
**RE:** Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)  
**Agrants #:**  
**Grant Title:**

**STUDY #:** 17-0055  
**STUDY TITLE:** Understanding college student alcohol use and related behaviors  
**Submission Type:** Initial  
**Expedited Category:** (7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.  
**Approval Date:** 2/16/2017  
**Expiration Date of Approval:** 2/15/2018

The Institutional Review Board (IRB) approved this study for the period indicated above. The IRB found that the research procedures meet the expedited category cited above. IRB approval is limited to the activities described in the IRB approved materials, and extends to the performance of the described activities in the sites identified in the IRB application. In accordance with this approval, IRB findings and approval conditions for the conduct of this research are listed below.

**Regulatory and other findings:**

The IRB waived the requirement to obtain a signed consent form for some or all subjects because the only record linking the subject and research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. Each subject will be asked whether the subject wants documentation linking the subject with the research, and the subject's wishes will govern.

The IRB determined that this study involves minimal risk to participants.

## Appendix B

### SONA Informed Consent Statement for “Understanding College Student Alcohol Use & Related Behaviors”

You are invited to participate in a research project about the relationships between alcohol use, perceived parenting practices, and different associated behaviors in college students. You will be asked to answer a number of questions related to your experiences. This online survey must be completed in a single session and should take around 60 minutes to complete. Participation in this study is voluntary. No identifiable information about you will be collected; even the researchers will not have access to your individual answers. Due to the nature of internet access, however, the security of your responses cannot be guaranteed. To further protect your privacy, you are encouraged to complete the survey in a private location.

While there are no direct benefits to you, we hope this research will contribute to the body of knowledge regarding the relationships of various experiences on college drinking behavior. The data from this survey will be used as part of research studies and will have the potential to be published and used for professional presentations. All data is deidentified.

Though it is not believed that this survey will pose a risk greater than that experienced in daily life, there is a possibility that some items could cause mild discomfort. In the unlikely event of emotional distress, you should contact the ASU Counseling Center at (828) 262-3180. The greatest risk to you would be if someone was able to link your responses to you, however, as previously stated, even the researchers will not be able to link your individual responses to you.

You will not be paid for your participation in this study, but you can earn two (2) ELC credits for participation. The SONA system generates an identification number for you in order award credit, assuring that your responses will not be linked to your identity. There are other research and nonresearch options available for obtaining ELCs. You may wish to consult your professor to see if any other nonresearch options are available.

Your participation in this study is voluntary, and you may refuse to participate without penalty. If you choose to participate, you may withdraw from the study at any time, without needing a reason.

If you have any questions about any part of the study you can contact either principal investigator: Stephanie Moss, [mosses@appstate.edu](mailto:mosses@appstate.edu) or Chelsea Gruenwald, [gruenwaldce@appstate.edu](mailto:gruenwaldce@appstate.edu). Additionally, you may contact the faculty advisor, Dr. Lisa Curtin, [curtinla@appstate.edu](mailto:curtinla@appstate.edu), Appalachian State University, 309C Smith-Wright Hall. Questions regarding the protection of human subjects may be to the IRB Administrator, Research and Sponsored Programs, Appalachian State University, Boone, NC 28608, (828) 262-2130, [irb@appstate.edu](mailto:irb@appstate.edu).

Proceeding with the survey will be interpreted as your informed consent to participate and that you affirm that you are at least 18 years of age.

If you wish to participate, please click the button below.

**Appendix C**

## Demographic Questionnaire

Gender: \_\_\_ Male \_\_\_ Female

Age:

Class Rank: \_\_\_ Freshman \_\_\_ Sophomore \_\_\_ Junior \_\_\_ Senior

Race/Ethnicity: \_\_\_\_ (Fill in appropriate number)

1=White (not of Hispanic origin)

2=Black

3=Native American

4=Alaskan Native

5=Asian or Pacific Islander

6=Hispanic

7=Other: \_\_\_\_\_

Are you involved in the Greek system (i.e., sorority or fraternity)? \_\_\_\_\_ Yes  
\_\_\_\_\_ No

What is your religion?

-No religion/unaffiliated

-Buddhism

-Hinduism

-Judaism

-Islam

-Sikhism

-Christianity--Protestant

-Christianity--Catholic

-Christianity--Orthodox

-Christianity--Mormon

-Christianity--Evangelical

-Other, please indicate:

-Prefer not to answer

Are you involved in college athletics? \_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, do you play for an ASU team? \_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, do you play intramural sports? \_\_\_\_\_ Yes \_\_\_\_\_ No

**Appendix D**

## Alcohol Consumption Measure

\*\*A drink is defined as a 5 oz. glass of wine, a 12 oz. bottle of beer, or a shot (1 1/2 oz.) of 80 proof liquor straight, or in a mixed drink.

1. How many times in a typical month do you drink alcohol?
2. How many drinks have you had in the past week?
3. How many drinks do you have in a typical week?
4. How many drinks do you typically have at one time?
5. Over the past 2 weeks, on how many occasions have you had [5 (if you are biologically male) or 4 (if you are biologically female)] or more drinks in a row?

**Appendix E**  
Parental Monitoring Scale

1	2	3	4	5
Never	Rarely	Sometimes	A lot of the time	Always

1. My parent(s) usually knew what I did after school.
2. My parent(s) knew how I spent my money.
3. My parent(s) knew who my friends were.
4. My parent(s) knew where I was after school.
5. If I was going to be home late, I was expected to call my parent(s) to let them know.
6. I told my parent(s) whom I'm going to be with before I go out.
7. When I go out at night, my parent(s) knew where I was.
8. I talked to my parent(s) about the plans I had with my friends.

## Appendix F

### Inventory of Callous-Unemotional Traits – Youth Version

Instructions: Please read each statement and decide how well it describes you. Mark your answer by circling the appropriate number (0-3) for each statement. Do not leave any statement unrated.

	Not at all true	Somewhat true	Very true	Definitely True
1. I express my feelings openly.	0	1	2	3
2. What I think is “right” and “wrong” is different from what other people think.	0	1	2	3
3. I care about how well I do at school or work.	0	1	2	3
4. I do not care who I hurt to get what I want.	0	1	2	3
5. I feel bad or guilty when I do something wrong.	0	1	2	3
6. I do not show my emotions to others.	0	1	2	3
7. I do not care about being on time.	0	1	2	3
8. I am concerned about the feelings of others.	0	1	2	3
9. I do not care if I get into trouble.	0	1	2	3
10. I do not let my feelings control me.	0	1	2	3
11. I do not care about doing things well.	0	1	2	3
12. I seem very cold and uncaring to others.	0	1	2	3
13. I easily admit to being wrong.	0	1	2	3
14. It is easy for others to tell how I am feeling.	0	1	2	3
15. I always try my best.	0	1	2	3
16. I apologize (“say I am sorry”) to persons I hurt.	0	1	2	3
17. I try not to hurt others’ feelings.	0	1	2	3
18. I do not feel remorseful when I do something wrong.	0	1	2	3
19. I am very expressive and emotional.	0	1	2	3
20. I do not like to put the time into doing things well.	0	1	2	3
21. The feelings of others are unimportant to me.	0	1	2	3
22. I hide my feelings from others.	0	1	2	3
23. I work hard at everything I do.	0	1	2	3
24. I do things to make others feel good.	0	1	2	3

**Appendix G****BPAQ-SF**

1  
EXTREMELY  
UNCHARACTERISTIC  
OF ME

2

3

4

5  
EXTREMELY  
CHARACTERISTIC  
OF ME

1. Given enough provocation, I may hit another person.
2. There are people who pushed me so far that we came to blows.
3. I have threatened people I know.
4. I often find myself disagreeing with people.
5. I can't help getting into arguments when people disagree with me.
6. My friends say that I'm somewhat argumentative.
7. I flare up quickly but get over it quickly.
8. Sometimes I fly off the handle for no good reason.
9. I have trouble controlling my temper.
10. At times I feel I have gotten a raw deal out of life.
11. Other people always seem to get the breaks.
12. I wonder why sometimes I feel so bitter about things.

**Appendix H**

## Dating Violence Measure – Perpetration Scale

Response Choices:

0 times

1-2 times

3-5 times

6 or more times

“You did this to your boyfriend/girlfriend”

Any dating violence (yes to any of the 5 items below)

1. Hit, slap or physically hurt a current or previous boyfriend or girlfriend on purpose?
2. Threaten to hurt a current or previous boyfriend or girlfriend?
3. Damage something on purpose that was important to a boyfriend or girlfriend?
4. Try to control a current or previous girlfriend or boyfriend by always checking up on them, telling them who their friends could be, or telling them what they could do and when?
5. Shout, yell, insult or swear at a current or previous girlfriend or boyfriend?

### Appendix I

#### Child's Social and Physical Aggression Measures

1	2	3
Never	Once or Twice	Three or More

Think back to the ages of 10-14...

1. Did you make fun of adults?
  2. Did you make fun of your peers?
  3. Did you use inappropriate language with adults?
  4. Did you use inappropriate language with peers?
  5. Did you spread rumors to adults?
  6. Did you spread rumors to your peers?
- 
1. Did you use force to take someone else's money or property with peers?
  2. Did you use force to take someone else's money or property alone?
  3. Did you physically fight with one or several people with peers?
  4. Did you physically fight with one or several people alone?
  5. Did you use a weapon with peers?
  6. Did you use a weapon alone?

### **Vita**

Chelsea Elisabeth Gruenwald was born to David and Louise Gruenwald in Beloit, Wisconsin. In the fall of 2009, Ms. Gruenwald began study at the University of Wisconsin – Madison. In 2011, she studied at the National University of Ireland - Galway. She graduated from the University of Wisconsin – Madison in May of 2013 with a Bachelor's of Arts degree in Psychology and a Certificate in Religious Studies. In the fall of 2015, Ms. Gruenwald began study towards a Master's of Arts in Clinical Psychology. The M.A. was awarded in December of 2017. Ms. Gruenwald did her internship as a psychologist intern at the North Carolina Department of Public Safety prison system.

Ms. Gruenwald is a member of the Appalachian State Honor Society, Pi Gamma Mu: International Honor Society of Social Sciences, Delta Phi Epsilon Sorority, International Honor Society of Phi Kappa Phi, Golden Key International Honor Society, Sigma Alpha Lambda Honor Society, National Society of Collegiate Scholars, and the Chippewa Falls Rotary Club.