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Testing a Contextual Framework of Intimate Partner Violence in Young Adults

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**TESTING A CONTEXTUAL FRAMEWORK OF INTIMATE PARTNER VIOLENCE
IN YOUNG ADULTS**

by

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B.S. August 2013, Old Dominion University
M.S. August 2016, Old Dominion University

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ABSTRACT

TESTING A CONTEXTUAL FRAMEWORK OF INTIMATE PARTNER VIOLENCE IN YOUNG ADULTS

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Bell and Naugle (2008) proposed a comprehensive theoretical framework that includes multiple variables hypothesized to be involved in intimate partner violence (IPV) perpetration, including distal and proximal variables. The current study (1) assessed the extent to which childhood physical abuse victimization, interparental violence, insecure attachment, accepting beliefs about violence, sexism, stress, alcohol and marijuana use, relationship satisfaction, emotion regulation, and anger management were associated with physical IPV perpetration; (2) determined whether some of these variables influenced physical IPV perpetration more than others; (3) explored the mediation of distal variables by more proximal variables in predicting physical IPV perpetration; and (4) assessed the degree to which Bell and Naugle's theoretical framework enhances existing knowledge about individuals who are more likely to perpetrate physical IPV. Using confirmatory factor analysis and structural equation modeling, the current study assessed whether physical IPV perpetration was indirectly and positively related to "family violence" history (defined by indicators childhood physical abuse victimization, mother-to-father physical assault, and father-to-mother physical assault); anxious attachment; avoidant attachment; and "maladaptive beliefs" (defined by indicators accepting beliefs about violence, hostile sexism, and benevolent sexism) through stress; "alcohol use" (defined by indicators alcohol consumption, alcohol problems, and alcohol dependence); marijuana use; relationship dissatisfaction; "emotion dysregulation," and anger mismanagement. Participants included 326

undergraduate college students who reported being in a romantic relationship for at least three months with conflict present in the relationship. They completed online self-report questionnaires. Results indicated that emotion dysregulation significantly mediated the association from anxious attachment to physical IPV perpetration, and relationship dissatisfaction significantly mediated the association from avoidant attachment to physical IPV perpetration. “Family violence” and “maladaptive beliefs” directly predicted physical IPV perpetration. Results demonstrate the importance of interventions that target improving emotion regulation skills and relationship satisfaction, and prevention efforts that target changing accepting beliefs about IPV and teaching individuals who have been exposed to direct or indirect violence alternative ways of resolving relational conflict.

Keywords: intimate partner violence, physical intimate partner violence perpetration, childhood abuse, interparental violence, attachment, beliefs about violence, sexism, stress, alcohol, marijuana, relationship satisfaction, emotion regulation, anger management.

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This dissertation is dedicated to my husband Eric, who has encouraged every one of my adventures, especially this one.

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CHAPTER 1

INTRODUCTION

Intimate partner violence (IPV) remains a widespread problem in the United States that disproportionally impacts college aged adults. Compared to individuals in other age groups, individuals aged 18 to 24 continue to have the highest rate of IPV perpetration (Catalano, 2012) and approximately half of IPV victims report that their first IPV experience happened when they were between the ages of 18 and 24 (Breiding, Chen, & Black, 2010). Approximations of physical assault perpetration frequency rates among undergraduate students range from 20% (Makepeace, 1986; Shook et al., 2000) to 50% (Straus & Ramirez, 2007; Straus & Gozjolko, 2014). Furthermore, between 5% and 20% of undergraduate students report perpetrating severe physical assault, including punching, choking, kicking, or employing a weapon to aggress against their partner (Makepeace, 1981, Straus, 2004). Research demonstrates that IPV victimization is detrimental to students' mental and physical wellbeing (Amar & Gennaro, 2005; Banyard & Cross, 2008; Cisler et al., 2012; Coker et al., 2000), associated with an increased risk of suicidal thoughts and attempts (Coker et al., 2000), and predicts future IPV victimization (Smith, White, & Holland, 2003; Krebs, Lindquist, Warner, Fisher, & Martin, 2007).

Numerous IPV theories exist and propose different frameworks for understanding IPV. IPV research is influenced by these theories, and several of them are empirically supported. In an effort to more effectively attend to the intricacy and multitude of variables involved in episodes of IPV perpetration and better inform IPV prevention and treatment programs, Bell and Naugle (2008) proposed a theoretical framework for understanding IPV perpetration that incorporates existing theoretical and empirical IPV literature into a comprehensive contextual framework with multiple contextual units (i.e., categories) hypothesized to be involved in the perpetration of IPV. Within each contextual unit, several applicable variables are considered, including not only

factors preceding a particular occurrence of IPV perpetration, but also less immediate factors that may influence the likelihood of IPV perpetration, such as perpetrator background, disposition, motives, and relationship issues. While Bell and Naugle suggest variables that fit within each contextual unit, they encourage researchers to choose the variables that are relevant to their particular research study, as well as add other variables that would, in theory, also fit within any one of the units. Bell and Naugle's flexible framework for investigating variables related to IPV perpetration allows researchers to selectively or holistically consider the context surrounding episodes of IPV perpetration by observing the influence of a particular contextual unit or various variables within that unit on the perpetration of IPV. It also allows researchers to examine relationships between several contextual units and their association with IPV perpetration.

The purpose of the current study was to (1) examine the degree to which Bell and Naugle's (2008) suggested variables within their contextual units are associated with physical IPV perpetration, (2) ascertain whether certain variables influence physical IPV perpetration more than others, (3) explore the mediation of distal variables by more proximal variables in predicting physical IPV perpetration, and (4) assess the extent to which Bell and Naugle's (2008) theoretical model contributes to our understanding of the nature of physical IPV perpetration.

Bell and Naugle's IPV Framework

Within Bell and Naugle's (2008) theoretical framework, IPV perpetration is considered a consequence of variables within six contextual units: (1) antecedents, including distal/static antecedents and proximal antecedents, (2) discriminative stimuli, (3) motivating factors, (4) behavioral repertoire, (5) verbal rules, and (6) consequences, including reinforcing consequences and punishment consequences. In Bell and Naugle's (2008) conceptualization of IPV perpetration, antecedents are defined as "stimuli or events that precede the target behavior and

impact the likelihood that the target behavior will occur” (p. 1103). *Distal antecedents* include variables related to individuals’ backgrounds that, alone, do not result in IPV perpetration, but might be indirectly related to IPV perpetration through their relationships with other more directly related variables. *Static antecedents* include variables that persist over time and exist independent of IPV perpetration. Like distal antecedents, static antecedents are more likely to be indirectly related to IPV perpetration through their relationships with other more directly related variables. Examples of distal/static antecedents include childhood abuse, psychopathy, demographic features, attachment style, relationship characteristics, and genetic background. Bell and Naugle combine distal and static antecedents into one contextual unit. *Proximal antecedents* include variables that occur close in time to an IPV perpetration episode, are circumstantial, and typically change over time (e.g., partner requests/demands, interpersonal conflict, and current/recent stressors). Proximal antecedents are theorized to have a more direct association with IPV perpetration compared to distal and static antecedents.

Discriminative stimuli are defined as “stimuli, events, or conditions whose presence preceding IPV perpetration signals that IPV perpetration may be more likely to be reinforced” (Bell & Naugle, 2008, p. 1103). Thus, discriminative stimuli can temporarily increase the odds that IPV perpetration will occur. Examples of discriminative stimuli include the presence of partner, presence/absence of others, presence/absence of children, location, and availability of weapons.

Motivating factors are defined as “antecedent stimuli, events, or conditions that can temporarily change the potency of reinforcers or punishers and, therefore, can momentarily impact the likelihood that the target behavior will occur” (Bell & Naugle, 2008, p. 1103). Therefore, these transient aspects of a relationship, when paired with certain reinforcers, may

increase the probability that IPV perpetration will take place. Examples of motivating factors are drug/alcohol use, emotional distress, and relationship satisfaction.

Behavioral repertoire is defined as “socially adaptive skill sets that a person can perform competently under appropriate conditions to successfully attain a desired consequence” (Bell & Naugle, 2008, p. 1104). Lack of these skills can result in an increase in IPV perpetration as a means of attaining what is desired from a partner. Examples of behavioral repertoire include coping skills, problem-solving skills, emotion regulation skills, communication/conflict resolution skills, and anger management skills.

Verbal rules “influence the target behavior by describing the potential outcomes of engaging in a particular behavior” (Bell & Naugle, 2008, p. 1104). Verbal rules can impact IPV perpetration regardless of whether IPV perpetration has ever resulted in the resolution of a problem. Examples of verbal rules are beliefs about violence, beliefs about relationships, beliefs about women, beliefs about non-violent conflict resolution strategies, and alcohol/drug expectancy beliefs.

Consequences are outcomes of IPV perpetration that increase or decrease the chances of IPV happening again under similar circumstances (Bell & Naugle, 2008). Reinforcing consequences increase the likelihood of IPV perpetration. Examples of reinforcing consequences are stress reduction, escape/avoidance of an argument, partner compliance, and praise from others. Punishing consequences are outcomes as a result of IPV perpetration that decrease the chances of IPV happening again under similar circumstances. Such consequences are considered distressing and necessary to avoid. Examples of punishing consequences are dissolution of the romantic relationship and police involvement.

For the purposes of this study, the extent to which variables within four out of six contextual units adequately predict IPV perpetration were examined, including antecedents (i.e., both distal/static and proximal), motivating factors, behavioral repertoire, and verbal rules. Like Bell and Naugle (2008), the current study treated distal and static antecedents equivalently. See Figure 1. The specific distal/static antecedents that were examined include childhood physical abuse, interparental violence, anxious attachment, and avoidant attachment. In this study, childhood physical abuse and interparental violence (i.e., father-to-mother physical assault and mother-to-father physical assault) served as three indicators for the latent variable called “family violence.” Anxious and avoidant attachment served as two separate observed variables. The specific verbal rules that were examined include beliefs about violence and sexist beliefs. Beliefs about violence and sexist beliefs (i.e., hostile sexism and benevolent sexism) served as three indicators for the latent variable called “maladaptive beliefs.” Proximal antecedents included current/recent stressors, which were treated as an observed variable. The specific motivating factors that were examined include marijuana use, alcohol use, and relationship satisfaction. Marijuana use, alcohol use (i.e., alcohol consumption, alcohol problems, and alcohol dependence) served as four indicators for the latent variable, “substance use” while relationship satisfaction was treated as an observed variable. Specific behavioral repertoires that were examined include emotion dysregulation and anger mismanagement. Emotion dysregulation (i.e., nonacceptance, goals, impulse, awareness, strategies, and clarity) and anger mismanagement (i.e., escalating strategies, negative attributions, self-awareness, and calming strategies) served as 10 indicators for the latent variable, “emotion tactics.” A mediation model was tested using distal/static antecedents (i.e., “family violence,” anxious attachment, and avoidant attachment) and verbal rules (i.e., “maladaptive beliefs”) as precursor variables; proximal antecedents (i.e.,

current/recent stressors), motivating factors (i.e., “substance use” and relationship satisfaction), and behavioral repertoire (i.e., “emotion tactics”) as mediator variables; and physical IPV perpetration as the outcome variable. See Figure 2.

Data pertaining to reinforcing consequences, punishing consequences, and discriminative stimuli were not collected as this study was focused solely on variables that precede IPV perpetration, not during or after IPV perpetration. It would be difficult to accurately capture the global impact of consequences and discriminative stimuli on future IPV perpetration in this cross-sectional study.

Although numerous IPV research studies have examined relationships between IPV perpetration and the proposed predictor variables, many of these studies include community and clinical samples which group together younger and older adults. For the purposes of this study, which included undergraduate student participants, the review of IPV literature focuses on studies with younger adults (i.e., ages 18-45). It should also be noted that the samples of the reviewed studies vary considerably in that some include undergraduate samples versus community samples, all women versus all men, both women and men, and single versus married individuals. Moreover, studies differ in their approach to data analysis (e.g., combining women and men versus assessing women and men separately). These nuances create a complex and, at times, an inconsistent picture of factors involved in IPV perpetration. The current study aimed to provide a clearer understanding of the process of IPV perpetration by examining only physical IPV perpetration (minor and severe) among a sample of college aged men and women. By including a variety of predictors of physical IPV perpetration into a single model, the variables with more predictive power could be identified.

Mediator Variables and IPV

Proximal Antecedents

Current/Recent Stressors. A review of the literature yielded only one study that assessed the relationship between stressors and physical IPV perpetration, and used a sample of young adults. Wright, Hanlon, Lozano, and Teitelman (2019) analyzed data from a longitudinal nationally representative sample of young women ages 24-32 and found that perceived stress was positively correlated with physical IPV perpetration.

Motivating Factors

Drug and Alcohol Use. Overall, results pertaining to the relationship between marijuana use and physical IPV perpetration are variable. Researchers believe that the relationship between “drug use” and physical IPV perpetration could vary depending on the type of drug (Boles & Miotto, 2003; Stuart et al., 2008). For example, data from a nationally representative sample of college students suggested that marijuana and depressants were positively related to physical IPV perpetration, whereas narcotics and anabolic steroids were negatively associated with physical IPV perpetration (Nabors, 2010). In contrast, hallucinogens, stimulants, and inhalants were not predictive of students’ perpetration of physical IPV. Feingold, Washburn, Tiberio, and Capaldi (2015) analyzed data from a 12-year prospective study with opposite sex romantic couples who were in their 20s and 30s and examined the effects of drug use (i.e., any illicit drug associated with a substance use disorder, including marijuana) on perpetration of physical IPV. Although no significant main effect of drug use on physical IPV was found, results demonstrated that the impact of drug use on physical IPV perpetration did vary depending on participants’ age. Specifically, drug use positively predicted physical IPV perpetration after controlling for heavy episodic drinking, but only among participants who were in their mid-20s.

Although the relationship between marijuana use and physical IPV perpetration is complicated by type of drug and age of participant, the relationship between alcohol consumption and physical IPV perpetration tends to be somewhat clearer. Compared to other substances, alcohol is reliably associated with physical IPV perpetration (Foran & O'Leary, 2008; Langenderfer, 2013; McKinney, Caetano, Rodriguez, & Okoro, 2010). Waller, Iritani, Christ, Halpern, Moracco, and Flewelling (2013) examined the relationship between alcohol use and physical IPV perpetrated by men against women from a nationally representative sample of men ages 18-26. Significant positive relationships were found between infrequent and frequent heavy drinking and physical IPV perpetration. Compared to those who did not drink, the heavy drinking groups (i.e., infrequent heavy drinkers, occasional heavy drinkers, and frequent heavy drinkers) each showed an increased likelihood of perpetrating physical IPV. These results mirror the results from a sample of heterosexual male freshman college students, which indicated a positive association between alcohol-related problems and physical IPV perpetration (Hove, Parkhill, Neighbors, McConchie, & Fossos, 2010). Baker and Stith (2008) expanded our understanding of the relationship between alcohol problems and physical IPV perpetration by assessing both male and female undergraduates. Although a significant association between alcohol problems and physical IPV perpetration was found for both genders; surprisingly, alcohol problems was not a significant predictor of physical IPV perpetration for men or women when tested in a regression model with additional influential variables (e.g., childhood physical abuse, interparental violence, and emotion dysregulation).

Longitudinal data further support the significant relationship between alcohol consumption and physical IPV perpetration. In addition to examining the longitudinal influence of drug use on physical IPV perpetration, Feingold, Washburn, Tiberio, and Capaldi (2015) also

examined the effects of heavy episodic drinking on the perpetration of physical IPV among young couples. Similar to their results pertaining to drug use, no significant main effects of heavy episodic drinking on physical IPV perpetration were found. However, they did find that for men, the direct effect of heavy episodic drinking on physical IPV perpetration was positive as men aged (i.e., between the ages of 30-34). For women, the direct effect of heavy episodic drinking on physical IPV perpetration was positive among women in their early 20s. This positive effect dissipated when the researchers controlled for drug use.

Daily diary studies have also examined the relationship between drug and alcohol use and IPV perpetration. For example, Rothman, Stuart, Temple, and Heeren (2018) analyzed data from non-college attending young adults ages 18-25 who reported daily data on alcohol use, marijuana use, and IPV perpetration for three months. Results indicated that IPV perpetration (i.e., physical, sexual, psychological, and emotional IPV combined) was more likely on days when participants also reported alcohol use. By contrast, there was not a significant positive relationship between same day marijuana use and physical IPV perpetration.

Similar results were found by Shorey, Stuart, McNulty, and Moore (2014), who analyzed data from college men who completed daily surveys that assessed their alcohol use, marijuana use, and physical IPV perpetration for 90 days. On any given day, as the number of drinks consumed increased, so did the likelihood of physical IPV perpetration. Marijuana use was not associated with increases in physical IPV perpetration.

Testa and Derrick (2014) also analyzed data from a community sample of couples ages 21-45 who were married or cohabitating to examine the daily relationship between episodes of drinking and episodes of physical IPV perpetration. Results indicated that drinking alcohol was

positively related to same day physical IPV perpetration and that the odds of physical IPV perpetration occurring significantly increased when drinking had occurred four hours prior.

Moore, Elkins, McNulty, Kivisto, and Handsel (2011) found similar results among male and female college students in dating relationships who responded to questions about alcohol use and physical IPV perpetration every day for two months. Results showed that the odds of physical IPV perpetration were significantly higher on drinking days compared to non-drinking days.

Relationship Satisfaction. Marital conflict and marital dissatisfaction were, at one time, two of the most commonly studied interpersonal risk factors for physical IPV perpetration (Saunders, 1995). Over time, findings have remained consistent. Although a well-established relationship exists between marital conflict and physical IPV perpetration (Stith et al., 2004) and marital dissatisfaction and physical IPV perpetration (Cano & Vivian, 2003; Riggs et al., 2000) among married couples of varying ages, the association between relationship satisfaction and physical IPV perpetration among young, dating adults is less widely studied. A study by Dixon, Edwards, and Gidycz (2016), which included a sample of college women who were in a dating relationship, found that women who reported no physical IPV (i.e., neither perpetration nor victimization) had significantly higher levels of relationship satisfaction compared to individuals in both the victim only and bidirectional (i.e., both victim and perpetrator) categories. Individuals who reported only physical IPV perpetration had significantly higher levels of relationship satisfaction compared to individuals who reported only physical IPV victimization or bidirectional physical IPV. In a comparison of male and female undergraduate participants in violent versus nonviolent relationships, Winstead and Hitson (2016) found that individuals in relationships with physical IPV reported significantly less relationship satisfaction.

Motivating Factors Mediators: Conclusion. In considering the results of research examining the relationship between motivating factors and physical IPV perpetration, it is apparent that the findings are relatively mixed. Some drugs, including marijuana, were shown to be positively associated with physical IPV perpetration in cross sectional studies (Nabors, 2010; Testa, Derrick, Wang, Leonard, Kubiak, Brown, and Collins, 2018). However, daily diary studies (Rothman, Stuart, Temple, & Heeren, 2018; Shorey, Stuart, McNulty, & Moore, 2014) did not yield significant results pertaining to drug use and physical IPV perpetration. The results of a more complex longitudinal study by Feingold, Washburn, Tiberio, and Capaldi (2015) did not demonstrate a significant main effect for drug use on physical IPV perpetration; but, after controlling for drinking, there was a positive effect for drug use on physical IPV perpetration among men and women in their mid-20s. These findings suggest that the impact of drug use on physical IPV perpetration is complex and may vary by age and alcohol use.

Research examining the association between alcohol use and physical IPV perpetration is more consistent and demonstrates positive relationships between alcohol use and physical IPV perpetration (Waller, Iritani, Christ, Halpern, Moracco, & Flewelling, 2013; Hove, Parkhill, Neighbors, McConchie, & Fossos, 2010; Baker & Stith, 2008; Testa & Derrick, 2014). Unexpectedly, in one of those studies (Baker & Stith, 2008), results indicated that alcohol problems were not a significant predictor of physical IPV perpetration, highlighting the need for the inclusion of several potentially influential variables in a model to enhance our understanding of physical IPV. The results of Feingold, Washburn, Tiberio, and Capaldi (2015) also increase the complexity of the relationship between alcohol use and physical IPV perpetration in that while there was no overall direct effect of heavy episodic drinking on physical IPV perpetration, there was a positive effect for younger women and older men, but these effects disappeared after

controlling for drug use, suggesting that the impact of alcohol use on physical IPV perpetration is complicated and may vary by gender, age, and drug use.

Existing literature on the association between relationship satisfaction and physical IPV perpetration among young adults is limited and mixed. One study indicated that higher levels of relationship satisfaction were found among those who reported no physical IPV compared to perpetrators only and victims only, but perpetrators reported significantly higher relationship satisfaction than victims only or those who were bidirectionally violent (Dixon, Edwards, & Gidycz, 2016). Another study found that individuals who indicated the presence of physical IPV perpetration (either as victim, perpetrator, or both) reported significantly less relationship satisfaction compared to individuals who reported no violence in their relationship (Winstead & Hitson, 2016).

Behavioral Repertoire

Emotion Regulation and Anger Management Skills. There is a well-established link between emotion dysregulation and IPV perpetration (Kim, Pears, Capaldi, & Owen, 2009; McNulty & Hellmuth, 2008; Shorey, Brasfield, Febres, & Stuart, 2011; Tager, Good, & Brammer, 2010). Research suggests that physical IPV perpetration is a way for some individuals to regulate their emotions and emotion regulation is often cited as a motive for engaging in IPV (Bushman, Baumeister, & Phillips, 2001; Jakupcak, 2003). The relationship between emotion dysregulation and IPV perpetration has been demonstrated in research studies specific to college samples. For example, Shorey, Brasfield, Febres, and Stuart (2011) analyzed a sample of male and female college students to examine how emotion dysregulation is related to physical IPV perpetration. They found a significant positive relationship between emotion dysregulation and physical IPV perpetration and that emotion dysregulation distinguished individuals who had

perpetrated physical IPV from individuals who had not perpetrated physical IPV. Bliton, Wolford-Clevenger, Zapor, Elmquist, Brem, Shorey, and Stuart (2016) also analyzed a sample of college students in dating relationships to examine the association between emotion dysregulation and physical IPV perpetration. Although they did not find a significant relationship between emotion dysregulation and physical IPV perpetration among men, physical IPV perpetration was positively correlated with emotion dysregulation among women.

Similar to emotion dysregulation, lower levels of anger management skills have also been shown to play a role in IPV perpetration among young adults. Baker and Stith (2008) found that, among men, low anger management skills were the strongest predictor of physical IPV perpetration compared to exposure to interparental violence, childhood violence victimization, alcohol problems, relationship length, relationship satisfaction, and partner's perpetration of physical and psychological IPV. However, there was no relationship between low anger management skills and IPV perpetration for women.

Behavioral Repertoire Mediators: Conclusion. The two studies that examined the role of emotion dysregulation in physical IPV perpetration differed in their results. Specifically, the first study (Shorey, Brasfield, Febres, & Stuart, 2016) reported a significant positive relationship between emotion dysregulation and physical IPV perpetration, while the second study (Bliton, Wolford-Clevenger, Zapor, Elmquist, Brem, Shorey, & Stuart, 2016) found a significant positive relationship between emotion dysregulation and physical IPV perpetration for women, but not for men. A gender difference was also found when assessing the relationship between anger management skills and physical IPV perpetration. Specifically, low anger management skills positively predicted physical IPV perpetration among men, but not women (Baker & Stith, 2008).

Precursor Variables and IPV

Distal/Static Antecedents

Childhood Physical Abuse. Several studies have investigated the relationship between childhood physical abuse victimization and physical IPV perpetration among young adults. Data from a longitudinal nationally representative sample of male and female college students demonstrated that physical abuse victimization during childhood was associated with a 72% increase in students' likelihood of perpetrating IPV within their romantic relationships (Nabors & Jasinski, 2009). Baker and Stith (2008) and Gover, Kaukinen, and Fox (2008) found that among college men, experiencing childhood physical abuse in the family of origin was positively associated with physical IPV perpetration. Research on college women demonstrates similar results. For example, Kendra, Bell, and Guimond (2012) found that among unmarried and non-cohabitating college women, a history of physical child abuse significantly predicted physical IPV perpetration.

Interparental Violence. The relationship between witnessing interparental violence and physical IPV perpetration among young adults appears to mirror the relationship between childhood physical abuse victimization and physical IPV perpetration. Data from a longitudinal nationally representative sample of male and female college students demonstrated that witnessing interparental violence during childhood was associated with a 59% increase in their likelihood of perpetrating physical IPV against their partners (Nabors & Jasinski, 2009). Carr and VanDeusen (2002) found that witnessing interparental violence predicted physical IPV perpetration among a sample of undergraduate men. This pattern was also found among a sample of undergraduate women (Baker and Stith, 2008). In a sample of male and female college students, Holt and Gillespie (2008) found that among men, higher levels of mother-to-father

physical IPV significantly predicted higher levels of physical IPV perpetration. Unexpectedly, among both men and women, higher levels of father-to-mother physical IPV predicted lower levels of physical IPV perpetration. This finding may highlight the impact of witnessing the more severe consequences (e.g., injury) of male-to-female physical IPV, which in turn influences individuals' motives for not engaging in IPV perpetration.

Attachment Style. Although a well-established relationship between insecure attachment and IPV perpetration exists among community and clinical samples (e.g., Allison et al., 2008; Babcock, Jacobson, Gottman, & Yerington, 2000; Godbout et al., 2009; Lafontaine & Lussier, 2005; Henderson, Bartholomew, & Dutton, 1997; Henderson, Bartholomew, Trinke, & Kwong, 2005; Roberts & Noller, 1998), less is known about this relationship in undergraduate samples. Still, undergraduate data generally correspond to community and clinical data. For example, Orcutt, Garcia, and Pickett (2005) found that bidirectionally physically violent college women (i.e., women who reported being both perpetrators and victims of physical IPV) had the highest reported levels of anxious attachment compared to nonviolent, perpetrator only, and victim only females. Moreover, women who were high in anxious attachment and low in avoidant attachment were more likely to report perpetrating physical IPV than, unexpectedly, women high in both attachment styles. Winstead and Hitson (2016) compared male and female undergraduate participants in violent versus nonviolent relationships and found that participants in relationships with physical IPV reported significantly more avoidant and anxious attachment styles. These mixed findings highlight the need for the current study to assess both anxious and avoidant attachment styles' influence on physical IPV perpetration.

Distal/Static Antecedents Precursors: Conclusion. In considering the results of research examining the relationship between distal/static antecedents and IPV perpetration,

childhood physical abuse victimization is consistently associated with an increased risk for physical IPV perpetration (Nabors & Jasinski, 2009; Baker & Stith, 2008; Gover, Kaukinen, & Fox, 2008; Kendra, Bell, & Guimond, 2012; Wright, Hanlon, Lozano, & Teitelman, 2019). The relationship between exposure to interparental violence and physical IPV perpetration is less consistent. Although most data suggest a positive relationship between exposure to interparental violence and physical IPV perpetration (Nabors & Jasinski, 2009; Carr & VanDeusen, 2002; Baker & Stith, 2008), one study suggested a negative relationship between father-to-mother interparental violence and physical IPV perpetration (Holt & Gillespie, 2008). Similarly, research on the relationship between insecure attachment styles and IPV perpetration is mixed. Although the studies reviewed consistently indicated that anxious attachment is positively related to physical IPV perpetration (Orcutt, Garcia, & Pickett, 2005; Winstead & Hitson, 2016), avoidant attachment was shown to be negatively related to physical IPV perpetration in one study (Orcutt, Garcia, & Pickett, 2005) and positively related in another (Winstead & Hitson).

Verbal Rules

Beliefs About Violence. Previous research on college students that aims to examine the relationship between their beliefs about and perpetration of IPV do so by exploring their accepting attitudes toward IPV. Data from a longitudinal nationally representative sample of male and female college students indicated that accepting attitudes of male heterosexual violence (i.e., violence perpetrated by a man against a woman) was a significant predictor of male and female students' perpetration of physical IPV (Nabors & Jasinski, 2009). Interestingly, Graham-Kevan and Archer (2003) found that beliefs acceptive of IPV perpetration are stronger predictors of physical IPV perpetration among undergraduate students than among women in domestic violence shelters or men in prison who were convicted of physical IPV perpetration.

Sexist Beliefs. Acceptance of traditional masculine gender role ideologies has also been found to be related to physical IPV perpetration. For example, Santana, Raj, Decker, Marche, and Silverman (2006) analyzed a community sample of young men ages 18-35 to examine the relationship between the endorsement of traditional masculine gender role ideologies and men's experience with physical IPV perpetration. The authors describe traditional masculine gender role ideologies as agreement with masculine perceptions related to male status in society, male toughness, anti-femininity, and male hypersexuality. They found a positive relationship between endorsement of traditional ideologies and physical IPV perpetration in the past year. A careful review of the literature did not yield any results pertaining to the influence of sexist beliefs on physical IPV perpetration among women.

Verbal Rules Precursors: Conclusion. The results of research studies examining the influence of belief systems on IPV perpetration suggest that beliefs about violence and beliefs about traditional masculine gender roles contribute to episodes of physical IPV perpetration. One study found that beliefs acceptive of IPV, particularly IPV perpetrated by a man against a woman, positively predicted physical IPV perpetration (Nabors & Jasinski, 2009). Similarly, traditional gender role stereotypes, including masculine gender role beliefs, have also been found to be positively related to physical IPV perpetration for men (Santana, Raj, Decker, Marche, & Silverman, 2006).

Precursor Variables and Mediator Variables

In following the steps necessary for testing a mediation model outlined by Baron and Kenny (1986), Judd and Kenny (1981), and James and Brett (1984), research was reviewed to demonstrate relationships between the precursor (i.e., distal/static antecedents and verbal rules) and mediator variables (proximal antecedents, motivating factors, and behavioral repertoire).

Similar to the previous literature review and in an effort to draw more relevant comparisons to the current study's intended sample of undergraduate students, the majority of the research cited below include young adult participants. However, when studies with young adult samples could not be located, results from studies with general adult samples were considered in order to examine relationships between the variables of interest.

Distal/Static Antecedents and Mediator Variables

Childhood Physical Abuse and Mediators. The literature review revealed significant positive relationships between young adults' experiences of childhood physical abuse and daily stressors commonly experienced by college students (Baker, Nguyen-Feng, Nilakanta, & Frazier, 2019); marijuana problems (i.e., psychological, social, occupational, and legal problems associated with marijuana use in the past year) (Vilhena-Churchill & Goldstein, 2014); problematic alcohol use during college (Miron, Orcutt, Hannan, & Thompson, 2014); and emotion dysregulation (Vilhena-Churchill & Goldstein, 2014; Rellini, Vujanovic, Gilbert, & Zvolensky, 2012). Significant negative relationships were also found between young adults' history of childhood physical abuse and relationship and sexual satisfaction (Rellini, Vujanovic, Gilbert, & Zvolensky, 2012), and marital satisfaction (Nguyen, Karney, & Bradbury, 2017). A review of the literature did not yield any results pertaining to childhood physical abuse and anger management skills in a young adult sample, but a similar relationship has been found among couples with an average age of 32 (Maneta et al., 2012). Specifically, childhood physical abuse was found to be positively correlated with women's anger suppression (i.e., ruminating over angry feelings without expressing them).

Interparental Violence and Mediators. Like young adults with a history of childhood physical abuse, exposure to interparental violence was found to be related to higher levels of

alcohol abuse and marijuana use (Fergusson & Horwood, 1998), and emotion dysregulation (Amatya, 2014). Significant negative relationships were found between interparental violence and relationship satisfaction (Grau, 2001), and anger management skills (i.e., self-soothing, recognizing signs of anger, and self-talk) (Turcotte-Seabury, 2010). A thorough review of the literature did not yield any articles pertaining to the relationship between interparental violence and current/recent stressors among adults of any age.

Anxious Attachment and Mediators. Anxious attachment in young adults was shown to be positively related to college-related perceived stressors (Perrine, 1998); alcohol and marijuana use (Kassel, Wardle, & Roberts, 2007; Serra et al., 2019); and emotion dysregulation (Pascuzzo, Cyr, & Moss, 2013). Anxious attachment in young adults was also found to be negatively related to relationship satisfaction (Stackert & Bursik, 2003). Studies with adults of any age examining the relationship between anxious attachment and anger management skills were not found.

Avoidant Attachment and Mediators. Similar to anxious attachment, avoidant attachment in young adults was shown to be positively related to college-related perceived stressors (Perrine, 1998); alcohol use (Vungkhanching, Sher, Jackson, & Parra, 2004); marijuana use (Serra et al., 2019); and emotion dysregulation (Pascuzzo, Cyr, & Moss, 2013). Avoidant attachment in young adults was also found to be negatively related to relationship satisfaction (Stackert & Bursik, 2003) and anger management skills (Mikulincer, 1998).

Distal/Static Antecedents and Mediator Variables: Conclusion. Childhood physical abuse, interparental violence, anxious attachment, and avoidant attachment all had analogous positive relationship patterns with marijuana use, alcohol use, relationship dissatisfaction, and emotion dysregulation. Childhood physical abuse was also found to be positively related to daily stress. The literature review did not yield any studies examining the relationships between

interparental violence and current/recent stressors, or anxious attachment and anger management skills.

Verbal Rules and Mediator Variables

Among soon-to-be-married female college students, a negative association was found between benevolent sexism (e.g., the belief that women want to be treated like a princess in romantic relationships) and relationship satisfaction with their male partners, such that higher endorsements of benevolent sexism was related to less relationship satisfaction (Casad, Salazar, & Macina, 2015). Similarly, Hammond and Overall (2013) found that young men who endorsed more hostile sexism (e.g., the belief that women want to control men) experienced lower relationship satisfaction with their female partners. This was also true for the review of literature examining the relationship between attitudes toward IPV perpetration and the mediator variables. Indeed, only one relevant study was found, which examined the relationship between accepting attitudes toward IPV perpetration and relationship satisfaction. Specifically, Kaura and Lohman (2009) found that low acceptance of female-to-male IPV perpetration was related to higher relationship satisfaction among male and female college students. No other studies were found that explored the relationship between sexist beliefs or attitudes toward IPV perpetration and any of the other mediator variables.

Summary of Hypotheses

It was expected that higher levels of physical IPV perpetration would be indirectly and positively related to “family violence,” anxious attachment, avoidant attachment, and “maladaptive beliefs” through current/recent stressors, “substance use,” relationship dissatisfaction, and “emotion tactics.”

CHAPTER II

METHOD

Participants

Six-hundred-fifty-two participants were recruited using Old Dominion University's Sona psychology department research pool and Student/University Announcement system (see power analysis described below). Sona participants were awarded research credit for their participation. Participants recruited through the Student/University Announcement system were entered into a raffle for a chance to win one of four \$50 Amazon gift cards. Inclusion criteria were included in the announcement. Eligibility criteria included: (1) the participant must have been at least 18 years of age, (2) the participant must have been in a romantic relationship for at least three months, (3) the participant must have physically seen his/her partner at least once per week, and (4) the participant must have reported the presence of common causes of conflict in the relationship (e.g., becoming emotionally distant, spillover non-relationship stress, not working well together as a team, not having as much fun together). At the beginning of the survey, all participants were asked screening questions to determine if they met eligibility criteria. Participants who did not meet eligibility criteria were branched to the end of the survey, which included a page informing them that they were not eligible to complete the survey and thanking them for their desire to participate in the study. See Appendix A. Two-hundred-thirty-nine individuals were excluded from the analyses because they did not provide responses to any of the items necessary for analyses. Among the 413 participants who attempted the questionnaire, 21 were excluded because they did not meet eligibility requirements; and 66 were excluded because their self-reported sexual identity was lesbian, gay, bisexual, queer, questioning, or other. Analyses were limited to participants self-described as heterosexual/straight in an attempt to

make comparisons with opposite sex partner data described in the literature review. The final sample included 326 participants. Overall, the majority of the participants identified their sex as female (78.5%) between the ages of 18 and 49. The sample was 43.7% White, 38.4% Black or African American, 11.5% two or more races, 5% Asian, 0.9% American Indian and/or Alaska Native, and 0.6% Native Hawaiian and/or Other Pacific Islander. Participants' demographic data are presented in Table 1. See Appendix C for all demographic questions included in the survey.

Materials

Physical Assault Perpetration. Participants completed the Revised Conflict Tactics Scales (CTS-2; Straus et al., 1996). The CTS-2 includes 78 items concerning the chronicity, severity, and mutuality of IPV as both perpetrator and victim in the past year. The CTS-2 consists of eight scales: minor psychological aggression, severe psychological aggression, minor sexual coercion, severe sexual coercion, minor injury, severe injury, minor physical assault, and severe physical assault. However, for the purposes of the current study, only the physical assault (minor and severe) subscales were used. Participants were instructed to indicate how many times they engaged in each physical assault behavior toward their current partner. Items are rated on an 8-point scale ranging from 0 (*this has never happened*) to 6 (*more than 20 times in the past year*); a response score of 7 indicates that the behavior has not occurred in the past year, but it has happened before. A sample item of the minor physical assault subscale is "I pushed or shoved my partner." A sample item of the severe physical assault subscale is "I choked my partner." See Appendix D. The CTS-2 is a widely used and valid measure for intimate partner violence. Evidence of the scale's convergent validity is apparent as components of it have been found to be associated with other measures employed for assessing violent behaviors (Jones et al., 2002; Ro & Lawrence, 2007). Straus et al. (1996) calculated Cronbach's alphas of .86 for the

physical assault subscale (minor and severe combined). The physical assault subscale has also been found to be reliable by Lewis, Winstead, Braitman, and Hitson (2018), who calculated Cronbach's alphas of .88, .88, and .81 across three time points. Cronbach's alpha for the current study was .86 (minor and severe combined). Due to its positive skew (skewness = 3.65; kurtosis = 17.65), physical assault perpetration was dichotomized. Therefore, a score of 0 or 7 was coded as 0, while scores between 1 and 6 were coded as 1. A total of 41.7% of participants reported a score other than zero or seven, indicating that they had engaged in physical IPV in the previous year.

Distal/Static Antecedents

Childhood physical abuse. Participants completed a version of the physical punishment subscale from the Assessing Environments III (AE-III; Berger & Knutson, 1984) modified by Gauthier, Stollak, Messe, and Aronoff (1996). The AE-III is a validated 164-item questionnaire that requires participants to respond "true" or "false" to statements regarding their environment while growing up. It includes 15 scales – physical punishment, father (aggressive and antisocial tendencies), mother (depressed or psychological problems), peer relationships, perception of discipline, shared parenting, positive orientation to education, age inappropriate demands, marital discord, isolation, community involvement, potential economic stress, negative family atmosphere, positive parental contact, and parental rejection. For the purposes of this study, only the physical punishment scale was used, which consists of 11 items. Gauthier et al. (1996) revised the physical punishment subscale by changing the true-false response format to a 4-point response scale ranging from 0 (*never*) to 3 (*frequently*). Sample items include "My mother/father used to spank me" and "My mother/father used to hit me with something other than her/his hands when I did something wrong." See Appendix E. Gauthier et al. (1996) found that physical

punishment scores correlated with lower socioeconomic status and less parental education, two historically well-established correlates of childhood physical abuse (Carroll, Gruenewald, Taylor, Deverts, Matthews, & Seeman, 2013), demonstrating the validity of the modified physical punishment subscale. Gauthier et al. (1996) reported Cronbach's alphas of .79 for physical punishment by mother and .85 for physical punishment by father. Cronbach's alpha for the current study was .86 (mother and father combined). The current study used Gauthier et al.'s (1996) 4-point response scale. The current study also used Gauthier et al.'s (1996) method of combining the highly positively correlated mother and father physical punishment scales into an overall physical punishment scale score by summing all the items. The composite was tested as an indicator for the latent variable "family violence."

Interparental violence. Participants completed the Adult-Recall Version of the Revised Conflict Tactics Scales (CTS2-CA; Straus, 2000) to assess mother-to-father physical assault and father-to-mother physical assault. Participants indicated whether or not they witnessed any of the listed behaviors between their parents during the last year they lived at home with them. The 78 listed behaviors and eight subscales concerning the chronicity, severity, and mutuality of IPV are identical to the original CTS-2, but are designed in such a way for participants to report on their parents' behavior toward each other. For the purposes of the current study, only the physical assault (minor and severe) subscales were used. Items are rated on an 8-point scale ranging from 0 (*this has never happened*) to 6 (*more than 20 times*); a response score of 7 indicates that the behavior did not occur in the past year, but it did happen before. A sample item of the minor physical assault subscale is "Mother pushed or shoved father" / "Father pushed or shoved mother." A sample item of the severe physical assault subscale is "Mother choked father" / "Father choked mother." See Appendix F. Significant positive correlations between reports of

father's physical aggression and mother's physical aggression on the CTS2-CA and violence perpetrated by court-ordered males seeking outpatient treatment for intimate partner violence demonstrate the validity of the CTS2-CA (Levine, 2003). Milletich, Kelley, Doane, and Pearson (2010) calculated Cronbach's alphas of .90 for mother-to-father violence and .93 for father-to-mother violence. Cronbach's alphas for the current study were .93 for mother-to-father physical assault and .96 for father-to-mother physical assault. In the current study, a score of 0 or 7 was coded as 0, while scores between 1 and 6 retained their values. Two total (i.e., sum) physical assault scores were calculated – one for mother-to-father physical assault and one for father-to-mother physical assault. These composites were tested as indicators for the latent variable "family violence."

Attachment. Participants completed the Experiences in Close Relationships Scale (ECR)-Short Form (Wei, Russell, Mallinckrodt, & Vogel, 2007). It consists of 12 statements concerning how one experiences a romantic relationship, yielding two subscales – anxiety and avoidance. Statements are rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items from the anxiety subscale include "I need a lot of reassurance that I am loved by my partner" and "My desire to be very close sometimes scares people away." Sample items from the avoidance subscale include "I want to get close to my partner, but I keep pulling back" and "I am nervous when partners get too close to me." See Appendix G. Wei et al. (2007) found significant positive correlations between excessive reassurance seeking and anxiety, and emotional reactivity and anxiety, and a negative correlation between comfort with self-disclosure and avoidance, highlighting the scale's construct validity. Wei et al. (2007) calculated Cronbach's alphas ranging from .77 to .86 for anxiety and .78 to .88 for avoidance across six studies. Cronbach's alphas for the current study were .72 for anxiety and .76 for

avoidance. Separate anxious attachment and avoidant attachment total scores were created using the means of each respective set of items (i.e., anxious attachment, avoidant attachment) and tested as observed variables.

Verbal Rules

Beliefs about violence. Participants completed the Intimate Partner Violence Attitude Scale (IPVAS; Smith, Thompson, Tomaka, & Buchanan, 2005) which includes 23 items and three subscales – abuse, control, and violence. For the purposes of this study, only the 5-item violence subscale was used. Participants rated each item using a 4-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). A sample item includes, “It would never be appropriate to hit or try to hit one’s partner with an object.” See Appendix H. Fincham, Cui, Braithwaite, and Pasley (2008) found significant positive correlations between the violence subscale and the CTS-2 physical assault subscale, highlighting the scale’s validity. Cronbach’s alphas of .83 and .70 have been reported for the violence subscale (Fincham et al., 2008; Smith et al., 2005). Cronbach’s alpha for the current study was .83. The 4-point response scale was recoded so that scores were reversed (i.e., a higher score indicated more acceptance of violence). A total score was calculated using the mean of all items. The composite was tested as an indicator for the latent variable “maladaptive beliefs.”

Sexist Beliefs. Participants completed the Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996), which consists of 22 items and two subscales – hostile sexism and benevolent sexism. Participants responded using a 6-point scale ranging from 0 (*disagree strongly*) to 5 (*agree strongly*). A sample item of the hostile sexism subscale is “Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for equality.” A sample item of the benevolent sexism scale is “No matter how

accomplished he is, a man is not truly complete as a person unless he has the love of a woman.”

See Appendix I. Glick and Fiske (1997) found significant positive correlations between negative evaluations of women and hostile sexism, and negative stereotypes of women and hostile sexism. They also found significant positive correlations between positive evaluations of women and benevolent sexism, and positive stereotypes of women and benevolent sexism, providing evidence for the scale’s validity. Although hostile and benevolent sexism, as constructs, appear to capture opposing views of women, Glick and Fiske (1996) repeatedly found the two subscales to be positively related, supporting their claim that both forms of sexism are important aspects of sexist ideology. Glick and Fiske (1996) reported acceptable Cronbach’s alphas across six samples ranging from .80 to .92 for the hostile sexism subscale, .73 to .85 for the benevolent sexism subscale, and .83 to .92 for the total scale. Cronbach’s alphas for the current study were .79 for benevolent sexism and .88 for hostile sexism. Two total scores were calculated – one for hostile sexism and one for benevolent sexism, using the means of their respective items. These composites were tested as indicators for the latent variable “maladaptive beliefs.”

Proximal Antecedents

Current/recent stressors. Participants completed the Inventory of College Students’ Recent Life Experiences (ICSRLE; Kohn, Lafreniere, & Gurevich, 1990). It consists of 49 items concerning common hassles experienced by college students, yielding seven subscales – developmental and academic challenges, time pressures, academic alienation, romantic problems, assorted annoyances, general social mistreatment, and friendship problems. Items are rated on a 4-point scale ranging from 1 (*not at all part of my life*) to 4 (*very much part of my life*). Sample items include “struggling to meet the academic standards of others” (developmental and academic challenges), “too many things to do at once” (time pressures), “finding courses

uninteresting” (academic alienation), “decisions about intimate relationship(s)” (romantic problems), “gossip concerning someone you care about” (assorted annoyances), “being ignored” (general social mistreatment), and “being let down or disappointed by friends” (friendship problems). See Appendix J. Osman, Barrios, Longnecker, and Osman (1994) found evidence of the measure’s concurrent validity by demonstrating significant positive correlations between the ICSRLE and other measures of daily hassles, including the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1994) and Daily Hassles Scale-Revised (DHS-R; Holm & Holroyd, 1992). Osman et al. (1994) calculated Cronbach’s alphas of .80 for developmental and academic challenges, .80 for time pressures, .78 for academic alienation, .69 for romantic problems, .54 for assorted annoyances, .80 for general social mistreatment, .77 for friendship problems, and .92 for the total scale. These alphas are comparable to the alphas reported by Kohn et al. (1990). In the current study, Cronbach’s alpha for the total scale was .95. A total stressor score was calculated using the mean of all items, and tested as an observed variable.

Motivating Factors

Marijuana use. In order to assess whether participants had recently used marijuana, participants responded to two items derived from the Modified Alcohol and Other Drug Assistance Program for Students (White, Mun, & Morgan, 2008). First, participants responded either 0 (*no*) or 1 (*yes*) to, “Have you used marijuana in the past three months?” If their response was yes, they were then asked, “How often have you used marijuana in the last three months?” See Appendix K. Participants’ responses ranged from 0 (*never*) to 6 (*every day or nearly every day*). Marijuana use was tested as an indicator for the latent variable “substance use” and non-users were coded as zero.

Alcohol use. The Alcohol Use Disorders Identification Test (AUDIT; Babor, Higgins-Biddle, Saunders, & Monteiro, 2001) includes 10 items and was used to detect alcohol consumption, alcohol problems (i.e., alcohol consumption that has resulted in recent problems – physical or mental), and alcohol dependence. Participants responded to the questions using a 5-point scale. Response options varied depending on the question asked: 0 (*never*) to 4 (*4 or more times per week*); 0 (*1 or 2*) to 4 (*10 or more*); or 0 (*never*) to 4 (*almost daily*). Sample items of the alcohol consumption subscale are “How often do you have a drink containing alcohol?” and “How many drinks containing alcohol do you have on a typical day when you are drinking?” Sample items of the alcohol problems subscale are “How often during the last year have you been unable to remember what happened the night before because of your drinking?” and “Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?” Sample items of the alcohol dependence subscale are “How often during the last year have you failed to do what was normally expected of you because of drinking?” and “How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?” See Appendix L. All participants were asked the first item, “How often do you have a drink containing alcohol?” and only participants who selected a response other than “never” were asked the remaining items. Significant associations between the AUDIT and the Michigan Alcoholism Screening Test, the MacAndrew alcoholism screening tests, familial alcoholism, and biological and psychological consequences of drinking demonstrate the validity of the AUDIT (Babor et al., 2001). In a study assessing the reliability of the AUDIT among university students, Kokotailo et al. (2004) calculated a Cronbach’s alpha of .81 for the total scale, demonstrating the measure’s good internal consistency. Cronbach’s alphas for the current study were .72 for alcohol consumption, .60 for alcohol problems, and .67 for

alcohol dependence. Three total scores for alcohol consumption, alcohol problems, and alcohol dependence were computed as the sum across their respective items. These composites were tested as indicators for the latent variable “substance use.”

Relationship satisfaction. Participants completed the Relationship Assessment Scale (RAS; Hendrick, 1988). It includes seven items concerning global relationship satisfaction rated on a 5-point scale ranging from 1 (*low satisfaction*) to 5 (*high satisfaction*). Sample items include “How good is your relationship compared to most?” and “How well does your partner meet your needs?” See Appendix M. In samples of clinical and non-clinical participants, Hendrick, Dicke, and Hendrick (1998) and Vaughn and Matyastik Baier (1999) found evidence of the scale’s convergent validity with the Dyadic Adjustment Scale (DAS) and the Kansas Marital Satisfaction Scale (KMSS). Hendrick (1988) calculated a Cronbach’s alpha of .86. Cronbach’s alpha for the current study was .88. A total relationship satisfaction score was computed as the mean across all items. The composite was treated as an observed variable.

Behavioral Repertoire

Emotion dysregulation. Participants completed the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), which consists of 36 items concerning difficulties in emotion regulation, yielding six scales – nonacceptance of emotional responses (i.e. nonacceptance), difficulty engaging in goal-directed behavior (i.e., goals), impulse control difficulties (i.e., impulse), lack of emotional awareness (i.e., awareness), limited access to emotion regulation strategies (i.e., strategies), and lack of emotional clarity (i.e., clarity). Items are rated on a 5-point scale ranging from 1 (*almost never*) to 5 (*almost always*). Sample items include “When I’m upset, I become angry with myself for feeling that way” (nonacceptance); “When I’m upset, I have difficulty getting work done” (goals); “I experience my emotions as

overwhelming and out of control” (impulse); “I pay attention to how I feel” (awareness); “When I’m upset, I believe that I will remain that way for a long time” (strategies); and “I have difficulty making sense out of my feelings” (clarity). See Appendix N. Gratz and Roemer (2004) found a significant positive correlation between experiential avoidance and the DERS, and a significant negative correlation between emotional expressivity and the DERS, highlighting the scale’s construct validity. They also reported Cronbach’s alphas of .85 for nonacceptance, .89 for goals, .86 for impulse, .80 for awareness, .88 for strategies, .84 for clarity, and .93 for the total scale. Cronbach’s alphas for the current study were .93 for nonacceptance, .86 for goals, .85 for impulse, .93 for awareness, .88 for strategies, and .84 for clarity. Total mean scores were calculated for each subscale, which were used as indicators for the latent variable “emotion tactics.”

Anger mismanagement. Participants completed the Anger Management Scale (AMS; Stith & Hamby, 2002) which was created to assess anger mismanagement specifically in the context of romantic relationships. It consists of 36 items with four subscales: escalating strategies, negative attributions, self-awareness, and calming strategies. Response options range from 1 (*not true about me*) to 4 (*mostly true about me*). Example items include “When arguing with my partner, I often raise my voice” (escalating strategies), “My partner likes to make me mad” (negative attributions), “I recognize when I am beginning to get angry at my partner” (self-awareness), and “Taking a break from my partner is a good way for me to calm down” (calming strategies). See Appendix O. The significant associations between the AMS and physical violence, sexual violence, psychological violence, impulsivity, alcohol problems, and relationship satisfaction demonstrate the scale’s construct validity (Stith & Hamby, 2002). Stith and Hamby (2002) reported Cronbach’s alphas of .83 for escalating strategies, .79 for negative

attributions, .70 for self-awareness, .73 for calming strategies, and .87 for the total scale.

Cronbach's alphas for the current study were .83 for escalating strategies, .84 for negative attributions, .74 for self-awareness, .75 for calming strategies, and .84 for the total scale. Total mean scores were calculated for each subscale, which were used as indicators for the latent variable "emotion tactics."

Attention Checks

Five stand-alone attention check items were included in the current study to ensure data quality. Live corrective feedback was provided to participants who initially selected an incorrect answer. See Appendix P.

Procedure

Prior to conducting this research, the study was approved by the Old Dominion University College of Sciences Human Subjects Committee. All questionnaire responses were anonymous. Participants completed the study online using Qualtrics software. Participants were screened via ODU's SONA research participation system to ensure that they were 18 years of age or older. A notification statement was provided to participants explaining the nature of the study and informing them of their rights as participants as well as potential risks that may have accompanied thinking about relationship experiences. Participants were also provided with information about how to contact the researchers in case of concern about their involvement in the study and with information about how to contact Old Dominion University's Office of Counseling Services in case reflecting on relationships proved to be upsetting. See Appendix B.

Statistical Analysis

First, a series of measurement models using confirmatory factor analysis (CFA) were specified to determine the factor loadings of each latent variable one at a time: childhood

physical abuse, mother-to-father physical assault, and father-to-mother physical assault on the “family violence” latent variable; accepting beliefs about violence, hostile sexism, and benevolent sexism on the “maladaptive beliefs” latent variable; marijuana use, alcohol consumption, alcohol problems, and alcohol dependence on the “substance use” latent variable; and nonacceptance, goals, impulse, awareness, strategies, and clarity (i.e., subscales from the DERS measuring emotion dysregulation), and escalating strategies, negative attributions, self-awareness, and calming strategies (i.e., subscales from the AMS measuring anger mismanagement) on the “emotion tactics” latent variable. After achieving acceptable model fit based on measurement (defined below), a structural mediation model was tested that specified distal/static antecedents (i.e., “family violence,” anxious attachment, and avoidant attachment) and verbal rules (i.e., “maladaptive beliefs”) as precursor variables; proximal antecedents (i.e., current/recent stressors), motivating factors (i.e., “substance use” and relationship satisfaction), and behavioral repertoire (i.e., “emotion tactics”) as mediator variables; and physical IPV perpetration as the outcome variable. See Figure 2. Structural equation modeling (SEM) was used to assess the fit of the hypothesized mediation model.

To evaluate overall fit of the measurement and structural models, criteria suggested by Hu and Bentler (1999), (i.e., Comparative Fit Index (CFI) > 0.95, Tucker-Lewis Index (TLI) > 0.95, Root Mean Square Error of Approximation (RMSEA) < 0.06, and Standardized Root Mean Square Residual (SRMR) < 0.08) were used. Mplus software (version 8; Muthén and Muthén, 1998–2017) was used for the analysis, which included all available data and used maximum likelihood estimation. Following recommendations from MacKinnon, Lockwood, and Williams (2004) and Preacher and Hayes (2008), significance tests on the mediation model’s indirect effects were conducted using bootstrapped confidence intervals with 5,000 bootstrapped

samples. Bootstrapping was used as opposed to the Sobel test in order to reduce the Type 1 error rate in this smaller sample, which could not meet the assumption of normality across all estimated parameters. After conducting the hypothesized mediation model, the potential for dropping relationships to improve overall model fit in terms of the Lagrange Multiplier (LM) and Wald W statistic were examined. Examination of the chi-square difference statistic also provided guidance about sources of poor fit in the model, as well as the use of theory to ensure the model “fit” conceptually. The hypothesized models were then adjusted, one change at a time, until acceptable model fit was reached. The final step of the analysis involved comparing the re-specified model to the hypothesized model using fit indices and factor loadings to guide interpretations. Maximum likelihood (ML) estimation was used.

Data Cleaning Procedures

Missing data were inspected using Little’s MCAR test (Little, 1988) to establish whether the data were missing completely at random (MCAR). The Little’s MCAR test resulted in $\chi^2 = 119.51$, $df = 128$, $p = .692$. Therefore, the missing data were considered MCAR. Missing values were imputed using expectation maximization imputation. Mahalanobis distance was used to detect multivariate outliers. No multivariate outliers were present. Boxplots were used to detect univariate outliers. When extreme univariate outliers (i.e., scores greater than three times the interquartile range from a quartile) were present, they were Winsorized to meet the next highest data point. Seventy-three outliers were addressed across seven variables. Linearity, homoscedasticity, and normality were tested using scatterplots and histograms, and addressed by variable transformations. Log transformations were used for marijuana use, alcohol dependence, alcohol problems, impulse control difficulties, mother-to-father physical assault, father-to-mother physical assault, and accepting beliefs about violence. Square root transformations were

used for calming strategies, self-awareness, and childhood physical abuse victimization. IPV was dichotomized due to its positive skew. Multicollinearity was assessed using the variance inflation factor. Each VIF value was below 10, indicating that the assumption of the absence of multicollinearity was met.

Power Analysis

Power estimations were conducted within SEM framework using Monte Carlo simulation methods with Mplus software (version 8; Muthén and Muthén, 1998–2017). Estimates of effect sizes were based on relevant articles exploring the impact of the variables included within this study on physical IPV perpetration; specifically, childhood physical abuse (Barnett & Fagan, 1993; Caesar, 1988; Dutton et al., 1996; O'Leary & Curley, 1986; Rosenbaum & O'Leary, 1981; Telch & Lindquist, 1984), interparental violence (Beasley & Stoltenberg, 1992; Caesar, 1988; O'Leary & Curley, 1986; Rosenbaum & O'Leary, 1981; Telch & Lindquist, 1984), attachment (Holtzworth-Munroe et al., 1997; Murphy et al., 1994; Julian & McKenry, 1993; McKenry et al., 1995); accepting beliefs about violence (Hampton & Gelles, 1994; Smith, 1990; Stith & Farley, 1993), sexist beliefs (Dutton, 1995b; Neidig, Friedman, & Collins, 1986; Rosenbaum & O'Leary, 1981; Smith, 1990; Stith & Farley, 1993), stress (Barling & Rosenbaum, 1986; Julian & McKenry, 1993; Kesner & McKenry, 1998; McKenry et al., 1995), marijuana use (Dinwiddie, 1992; Kaufman-Kantor & Straus, 1989), alcohol use (Cunradi, Caetano, Clark, & Schafer, 1999; Dinwiddie, 1992; Fagan et al., 1988; Hurlbert et al., 1991; Hutchison, 1999; Johnson, 2001; Julian & McKenry, 1993; Katz, Arias, Beach, & Brody, 1995; Kaufman-Kantor & Straus, 1989; McKenry et al., 1995; O'Farrell, Van Hutton, & Murphy, 1999; Rosenbaum & O'Leary, 1981; Schuerger & Reigle, 1988; Stith & Farley, 1993; Van Hasselt et al., 1985), relationship satisfaction (Aldarondo & Sugarman, 1996; Babcock et al., 1993; Barling & Rosenbaum, 1986;

Barnett & Fagan, 1993; Boyle & Vivian, 1996; Byrne & Arias, 1997; Feldbau-Kohn et al., 1998; Goldstein & Rosenbaum, 1985; Holtzworth-Munroe & Stuart, 1994; Holtzworth-Munroe & Anglin, 1991; Holden & Ritchie, 1991; Hurlbert, Whittaker, & Munoz, 1991; Julian & McKenry, 1993; Lockhart & White, 1989; Prince & Arias, 1994; Rosenbaum & O’Leary, 1981; Senchak & Leonard, 1994; Vivian & Malone, 1997), and emotion regulation and anger management (Maiuro et al., 1986; Barbour et al., 1998). Monte Carlo simulation methods indicated that for the effect sizes expected, and for an expected non-response rate of 15%, a total $N = 350$ participants across all measures would yield sufficient power ($\sim .80$) to detect the relevant effects. As previously mentioned, the current study was somewhat underpowered with a final sample of 326 participants. See the “Participants” subsection of the Method on p. 22 for additional details.

CHAPTER III

RESULTS

Measurement Models

Substance Use

Results from the CFA of a one-factor model defined by four indicators (i.e., the three subscales of the Alcohol Use Disorders Identification Test (AUDIT; Babor, Higgins-Biddle, Saunders, & Monteiro, 2001) and one item from the Modified Alcohol and Other Drug Assistance Program for Students (White, Mun, & Morgan, 2008) measuring frequency of marijuana use – see Figure 3 – suggested unacceptable model fit (Hu & Bentler, 1999). See Table 2 for all measurement models' fit indices. The factor loading for the marijuana use indicator was much lower (.18) compared to the loadings of the alcohol consumption (.64), alcohol problems (.85), and alcohol dependence (.69) indicators, so marijuana use was dropped from the measurement model and instead tested as an observed variable in the subsequent structural model. Model fit for the new model was fully saturated, yielding unavailable traditional model fit indices. A review of the factor loadings and their confidence intervals for alcohol consumption (.63 [.54, .71]), alcohol problems (.86 [.79, .94]), and alcohol dependence (.69 [.60, .79]) suggested good fit with the latent variable. The name of the latent variable was changed from “substance use” to “alcohol use” to improve clarity.

Emotion Tactics

A one-factor model CFA defined by 10 indicators (i.e., the six subscales of the Difficulties in Emotion Regulation Scale [DERS; Gratz & Roemer, 2004] and four subscales of the Anger Management Scale [AMS; Stith & Hamby, 2002] – see Figure 3) suggested poor model fit (Hu & Bentler, 1999). See Table 2. All four subscales of the AMS (i.e., escalating

strategies, negative attributions, self-awareness, and calming strategies) demonstrated lower factor loadings ($< .60$) whereas only one subscale of the DERS (i.e., awareness) demonstrated a lower factor loading, so a two-factor model CFA measuring the latent variables emotion dysregulation and anger mismanagement was employed. The fit of the two-factor model was poor and two of the four indicators for anger mismanagement had lower factor loadings ($-.25$ for self-awareness and $-.14$ for calming strategies). The decision was made to assess a one-factor model defined by the six subscales of the DERS and drop the subscales of the AMS from the overall measurement model. Anger mismanagement was instead employed as an observed variable in the subsequent structural model. Results from the one-factor model CFA suggested poor fit. The factor loading for the awareness indicator was much lower ($.26$) compared to the loadings of nonacceptance ($.73$), goals ($.64$), impulse ($.70$), strategies ($.82$), and clarity ($.73$), so awareness was dropped. The resulting model demonstrated acceptable fit and factor loadings ranged from $.66$ to $.83$. Modification indices did not suggest further model re-specifications. To improve clarity, the latent variable name was changed from “emotion tactics” to “emotion dysregulation.”

Maladaptive Beliefs

A one-factor model CFA defined by three indicators (i.e., one subscale of the Intimate Partner Violence Attitude Scale [IPVAS; Smith, Thompson, Tomaka, & Buchanan, 2005] and two subscales of the Ambivalent Sexism Inventory [ASI; Glick & Fiske, 1996] – see Figure 3) was fully saturated, so traditional model fit indices were not available. Following a review of the factor loadings and their confidence intervals (i.e., $.26$ [$.17, .35$] for violent beliefs, $.80$ [$.58, 1.02$] for hostile sexism, and $.61$ [$.43, .80$] for benevolent sexism), all three indicators were

retained in order to assess maladaptive beliefs as a latent variable in the overall measurement model.

Family Violence

A one-factor model CFA defined by three indicators (i.e., one subscale of the Assessing Environments III [AE-III; Berger & Knutson, 1984] and two subscales of the Adult-Recall Version of the Revised Conflict Tactics Scales [CTS2-CA; Straus, 2000] – see Figure 3) was also fully saturated, yielding no model fit indices. Factor loadings and their confidence intervals were as follows: .29 [.19, .40] for childhood physical abuse victimization, .83 [.72, .94] for mother-to-father physical assault, and 1.01 [.91, 1.11] for father-to-mother physical assault. All three indicators were retained in order to assess family violence as a latent variable in the overall measurement model.

Overall Measurement Model

The final step involved a CFA that combined all four constructs into an overall measurement model with the aforementioned modifications. See Figure 4. This four-factor measurement model had acceptable fit; however, the childhood physical abuse victimization and violent beliefs indicators showed lower factor loadings: .30 for childhood physical abuse victimization and .27 for violent beliefs. See Table 2. The decision was made to keep these indicators to prevent the dissolution of two latent variables. All other factor loadings ranged from .59 to .98. Justification for correlating the errors of indicators as suggested by the modification indices was not empirically or theoretically supported (i.e., alcohol consumption with hostile sexism; M.I. value = 10.56).

Structural Models

After the final measurement model was established, the decision was made to dichotomize IPV due to its positive skew (skewness = 3.65; kurtosis = 17.65). A mediation model was then analyzed with the “family violence” latent variable, anxious attachment, avoidant attachment, and the “maladaptive beliefs” latent variable as simultaneous predictors of the mediators: current/recent stressors, the “alcohol use” latent variable, relationship dissatisfaction, the “emotion dysregulation” latent variable, marijuana use, and anger mismanagement (i.e., the *a* paths); and the mediators: current/recent stressors, “alcohol use,” relationship dissatisfaction, “emotion dysregulation,” marijuana use, and anger mismanagement as predictors of IPV (i.e., the *b* paths). Additionally, although no hypotheses regarding the direct effects of “family violence,” anxious attachment, avoidant attachment, and “maladaptive beliefs” on IPV (i.e., the *c*’ paths) were formed for the present study, these paths were also included in the model in order to properly test for mediation. See Figure 5. The indirect effects of “family violence,” anxious attachment, avoidant attachment, and “maladaptive beliefs” on IPV through recent stressors, “alcohol use,” relationship dissatisfaction, “emotion dysregulation,” marijuana use, and anger mismanagement were tested using bias-corrected bootstrapped confidence intervals based on 5,000 bootstrapped samples. The statistical significance of the indirect effects was confirmed if the 95% bias-corrected bootstrapped confidence intervals did not contain zero (MacKinnon, Lockwood, & Williams, 2004; Preacher, Rucker, & Hayes, 2007; Preacher & Hayes, 2008). Correlations among all variables are presented in Table 6. It is noteworthy that all predictors except for marijuana use and alcohol consumption were significantly correlated with physical IPV perpetration.

As seen in Table 4 and Figure 6, only five significant pathways (i.e., four *a* paths and one indirect effect) were detected in the hypothesized model. For the significant *a* paths, higher levels of family violence were associated with more alcohol use; higher levels of anxious attachment were associated with more stress and emotion dysregulation; and higher levels of avoidant attachment were associated with less relationship satisfaction. Higher levels of avoidant attachment exhibited a significant indirect effect on IPV perpetration through less relationship satisfaction. There were no significant *b* or *c'* paths. There were three pathways (i.e., two *a* paths and one *b* path) that approached significance ($p < .10$); specifically, higher levels of anxious attachment trended towards being associated with less relationship satisfaction, maladaptive beliefs trended towards being associated with anger mismanagement, and more relationship satisfaction trended towards being associated with less IPV perpetration.

Fit of the original structural model was poor. See Table 3 for all structural models' fit indices. Since establishing mediation requires that the mediator variables affect the outcome variable (Kenny, Kashy, & Bolger, 1998), the decision was made to drop nonsignificant *b* paths one at a time using both the strength of unstandardized and standardized coefficients as predictors of physical IPV perpetration, and theoretical expectations to guide the order of the process. Fit indices were re-assessed after each modification to the model. As seen in Table 5, stress was dropped from the model first mainly due to it not having as much empirical support for its relationship with physical IPV perpetration compared to the other variables. Its low standardized and unstandardized coefficients as a predictor of physical IPV perpetration also played a role in this decision. Although marijuana use has slightly more empirical support for its relationship with physical IPV perpetration, findings have been mixed and its low standardized and unstandardized coefficients as a predictor of physical IPV perpetration warranted its removal

from the model. For these same reasons and because it definitively lacks empirical support compared to alcohol use, anger mismanagement was removed from the model next. Finally, alcohol use was dropped from the model simply due to its consistently low standardized and unstandardized coefficients as a predictor of physical IPV perpetration in the current study.

The resulting model had acceptable fit (See Table 3) with eight significant pathways (i.e., two *a* paths, two *b* paths, two *c'* paths, and two indirect effects). For the significant *a* paths, higher levels of anxious attachment were associated with more emotion dysregulation and higher levels of avoidant attachment were associated with more relationship dissatisfaction, results comparable to those found in the hypothesized model. One *a* path approached significance ($p < .10$); as was the case with the hypothesized model, higher levels of anxious attachment trended towards being associated with less relationship satisfaction. For the significant *b* paths, more emotion dysregulation was associated with more IPV perpetration and more relationship dissatisfaction was associated with more IPV perpetration. For the significant *c'* paths, higher levels of family violence and maladaptive beliefs were directly associated with more IPV perpetration. Similar to the results of the hypothesized model, there was a significant indirect effect of higher levels of avoidant attachment on IPV through less relationship satisfaction. Additionally, in the final model, higher levels of anxious attachment exhibited a significant indirect effect on IPV through more emotion dysregulation. See Table 7 and Figure 7.

CHAPTER IV

DISCUSSION

The current study was the first to include a variety of established predictors suggested by an IPV theoretical framework proposed by Bell and Naugle (2008) that comprehensively integrates elements of previous IPV theories into one model, allowing a way to test a mediation of distal variables by more proximal variables in predicting physical IPV perpetration. There were four purposes of the current study: (1) to examine the degree to which Bell and Naugle's (2008) suggested variables within their contextual units are associated with physical IPV perpetration, (2) to ascertain whether certain variables influence physical IPV perpetration more than others, (3) to explore the mediation of distal variables (i.e., "family violence," anxious attachment, avoidant attachment, and "maladaptive beliefs") by more proximal variables (i.e., stress, "alcohol use," relationship satisfaction, "emotion dysregulation," marijuana use, and anger mismanagement) in predicting physical IPV perpetration, and (4) to assess the extent to which Bell and Naugle's (2008) theoretical model contributes to our understanding of the nature of physical IPV perpetration.

It was expected that higher levels of physical IPV perpetration would be indirectly and positively related to "family violence" (defined by indicators childhood physical abuse victimization, mother-to-father physical assault, and father-to-mother physical assault), anxious attachment, avoidant attachment, and "maladaptive beliefs" (defined by indicators accepting beliefs about violence, hostile sexism, and benevolent sexism) through current/recent stressors, "substance use" (defined by indicators alcohol consumption, alcohol problems, alcohol dependence, and marijuana use), relationship dissatisfaction, and "emotion tactics" (defined by subscales from the Anger Management Scale (AMS; Stith & Hamby, 2002) and Difficulties in

Emotion Regulation Scale (DERS; Gratz & Roemer, 2004)). It is important to note that results from the CFAs suggested dropping marijuana use as an indicator of the “substance use” latent variable, so marijuana use was instead employed as an observed variable in the subsequent structural model. Consequently, the name of the latent variable “substance use” was changed to “alcohol use.” Marijuana use’s poor contribution to the measurement of “substance use” was understandable given that alcohol and marijuana use represent two different, but related behaviors (Blanco et al., 2016; Subbaraman & Kerr, 2015). Additionally, the current study’s method of measuring marijuana use (i.e., a one-item frequency measure) contrasted from the way in which alcohol use was measured (i.e., a validated multiple-item measure assessing dimensions of alcohol use that align with diagnostic criteria for alcohol use disorder). This limited the current study’s ability to assess a two-factor model for “substance use,” which may have been better fitting. Additionally, results from the CFAs demonstrated the appropriateness of not incorporating subscales from the AMS into the “emotion tactics” latent variable, so a total anger mismanagement score as an observed variable was employed in the subsequent structural model. Even when tested as a two-factor model, it was clear that anger mismanagement did not adequately contribute to the measurement of “emotion tactics,” and that anger mismanagement and emotion dysregulation are two distinct behavioral repertoires. A thorough review of previous research pertaining to the relationship between anger management and emotion regulation yielded one study (Bleh et al., 2004) that found a positive relationship between anger (as an emotion) and emotion dysregulation, suggesting that the relationship between anger management and emotion regulation is not well understood. Since subscales from only the DERS were used as indicators to measure “emotion tactics,” the name of the latent variable “emotion tactics” was changed to “emotion dysregulation.”

These alterations to the proposed measurement model necessitated specific predictions regarding these two new observed variables (i.e., marijuana use and anger mismanagement) added to the structural model. These predictions mirrored the initial hypothesis in that it was expected that higher levels of physical IPV perpetration would be indirectly and positively related to “family violence,” anxious attachment, avoidant attachment, and “maladaptive beliefs” through current/recent stressors, “alcohol use,” relationship dissatisfaction, “emotion dysregulation,” marijuana use, and anger mismanagement.

As predicted, higher levels of anxious attachment were associated with more “emotion dysregulation,” and more “emotion dysregulation” was associated with more physical IPV perpetration. Also, as predicted, the indirect effect of anxious attachment on physical IPV perpetration through “emotion dysregulation” was significant. These results are comparable to what has been found in previous research, which has shown significant associations between anxious attachment and emotion dysregulation (Pascuzzo, Cyr, & Moss, 2013) in young adults, as well as associations between emotion dysregulation and physical IPV perpetration among college students (Shorey, Brasfield, Febres, & Stuart; 2011; Bliton, Wolford-Clevenger, Zapor, Elmquist, Brem, Shorey, & Stuart; 2016). The present study’s findings extend the existing literature by demonstrating a connection between fear of partner rejection/abandonment and the emotional regulatory mechanisms involved in physical IPV perpetration.

As predicted, higher levels of avoidant attachment were associated with less relationship satisfaction, and less relationship satisfaction was associated with more physical IPV perpetration. Also, as predicted, the indirect effect of avoidant attachment on physical IPV perpetration through relationship dissatisfaction was significant. These findings are consistent with previous research, which has demonstrated significant associations between avoidant

attachment and relationship dissatisfaction (Stackert & Bursik, 2003) among college students, in addition to associations between relationship dissatisfaction and physical IPV perpetration (Dixon, Edwards, & Gidycz, 2016; Winstead & Hitson, 2016) among college students. The findings of the current study provide a more complete picture of the interplay between discomfort with relationship intimacy and the experienced low relationship quality that is characteristic of violent relationships.

Although no predictions were made about *c'* paths, the significant direct effects of “family violence” on IPV, and “maladaptive beliefs” on IPV were consistent with previous research, which found significant positive associations between childhood physical abuse victimization and physical IPV perpetration (Gover, Kaukinen, & Fox, 2008; Kendra, Bell, & Guimond, 2012), interparental violence and physical IPV perpetration (Baker & Stith, 2008; Carr & VanDeusen, 2002), accepting beliefs about violence and physical IPV perpetration (Graham-Kevan & Archer, 2003; Nabors & Jasinski, 2009), and sexist beliefs and physical IPV perpetration (Santana, Raj, Decker, Marche, & Silverman, 2006).

Unexpectedly, many of the hypothesized effects on physical IPV perpetration were not significant, highlighting the importance of considering the varying degrees of empirical support across variables. For example, no studies to date have examined the relationship between sexist or violent beliefs and emotion dysregulation, which may explain the nonsignificant indirect effect of “maladaptive beliefs” on physical IPV perpetration through “emotion dysregulation.” Only one previous study found a significant positive relationship between stress and physical IPV perpetration (Wright, Hanlon, Lozano, & Teitelman, 2019). In the current study, no significant relationship was found between stress and physical IPV perpetration in the structural model; although stress was positively correlated with physical IPV perpetration, demonstrating a

significant, but small relationship (.23; Cohen, 1988) between stress and physical IPV perpetration when other variables in the model were not accounted for. Perhaps the present study's findings were impacted by how stress was measured (i.e., specific hassles commonly experienced by college students), which varied from the way in which Wright et al. measured stress (i.e., perception of overall experienced psychological stress).

Although anger mismanagement was positively correlated with physical IPV perpetration, demonstrating a significant medium relationship (.33; Cohen 1988), the nonsignificant relationship between anger mismanagement and physical IPV perpetration in the structural model found in the current study expanded the narrow existing research on the relationship between these variables, which includes one study by Baker and Stith (2008), who found poor anger management skills to be the strongest predictor of physical IPV perpetration among men, but not predictive at all of physical IPV perpetration among women. This is notable given that the present study's sample was mostly women and highlights the need for a sample that is sufficient for examining men and women separately on variables with demonstrated gender differences.

Just one previous study (Stackert & Bursik, 2003) found a negative relationship between anxious attachment and relationship satisfaction. Lack of empirical support for this relationship may explain the non-significant indirect effect of anxious attachment on physical IPV perpetration through relationship dissatisfaction. Similarly, only one previous study (Pascuzzo, Cyr, & Moss, 2013) demonstrated a positive relationship between avoidant attachment and emotion dysregulation, which might account for the non-significant indirect effect of avoidant attachment on physical IPV perpetration through "emotion dysregulation."

The current study's nonsignificant results pertaining to marijuana use and physical IPV perpetration both correlationally and in the structural model mirror those found in longitudinal studies (Rothman, Stuart, Temple, & Heeren, 2018; Shorey, Stuart, McNulty, & Moore, 2014) that did not find a significant relationship between marijuana use and physical IPV perpetration. These results do not coincide with Nabors' (2010) cross-sectional study results, which demonstrated a positive relationship between marijuana use and physical IPV perpetration. It is true that attitudes and laws pertaining to recreational marijuana use have changed since 2010, highlighting the need for a more current assessment of the potential relationship between these variables. Perhaps if the current study had assessed marijuana use using a more recent, multi-item scale with demonstrated reliability and validity, results would have varied.

The following non-significant effects on physical IPV perpetration were more surprising given the strong existing empirical support for the relationships amongst these variables. For example, the indirect effect of "family violence" on physical IPV perpetration through relationship dissatisfaction does not align with previous research, which found negative relationships between childhood physical abuse victimization and relationship satisfaction (Rellini, Vujanovic, Gilbert, & Zvolensky's, 2012), and interparental violence and relationship satisfaction (Grau, 2001). The indirect effect of "family violence" on physical IPV perpetration through "emotion dysregulation" also did not reach significance, which does not compare to Vilhena-Churchill and Goldstein's (2014) results, which demonstrated a positive relationship between childhood physical abuse victimization and emotion dysregulation, or Amatya's (2014) results, which demonstrated that interparental violence was positively related to emotion dysregulation.

The nonsignificant indirect effect of “maladaptive beliefs” on physical IPV perpetration through relationship dissatisfaction was also unexpected since benevolent sexism (Casad, Salazar, and Macina, 2015), hostile sexism (Hammond & Overall, 2013), and violent beliefs (Kaura & Lohman, 2009) were found to be negatively related to relationship satisfaction.

Perhaps the most surprising non-significant findings were those related to alcohol use and physical IPV perpetration. Alcohol consumption did not correlate with physical IPV perpetration. Although alcohol problems and alcohol dependence were positively correlated with physical IPV perpetration, demonstrating a small relationship between alcohol problems and physical IPV perpetration (.26; Cohen, 1988) and a medium relationship between alcohol dependence and physical IPV perpetration (.31; Cohen, 1988), results between “alcohol use” and physical IPV perpetration were nonsignificant in the structural model. The current study’s findings are not supported by previous longitudinal research (e.g., Moore, Elkins, McNulty, Kivisto, & Handsel; Rothman, Stuart, Temple, & Heeren, 2018; Shorey, Stuart, McNulty, & Moore, 2014; Testa & Derrick, 2014) or cross-sectional research (Waller, Iritani, Christ, Halpern, Moracco, & Flewelling, 2013; Hove, Parkhill, Neighbors, McConchie, & Fossos, 2010). However, it is important to note that these cross-sectional studies included male-only samples and men were underrepresented in the current study’s sample. The current study’s results do, however, mirror those found by Baker and Stith (2008), who found that problematic alcohol use did not significantly predict physical IPV perpetration when tested in a regression model with other influential variables, including emotion dysregulation. Similarly, Norris, Ehlke, Sandoval, Butler, Winstead, Hitson, and Lewis (2022) found no significant differences in number of alcoholic drinks per drinking day, binge drinking, or hazardous drinking between individuals in nonviolent relationships and individuals in unidirectionally violent relationships

(i.e., one perpetrator, one victim). Furthermore, in the present study, 23.5% of participants reported never consuming alcohol; 40.2% reported drinking monthly or less; 22.5% reported drinking two to four times per month; 9.8% reported drinking two to three times per week; and only 3.9% reported drinking four or more times per week. Perhaps the current study's findings were influenced by the comparatively low number of participants drinking on a weekly basis. Moreover, the present study measured alcohol use retrospectively (i.e., historical patterns of use), not participants' drinking behaviors in real time in their natural environments, which would have afforded more wide-ranging and detailed accounts of participants' drinking.

Multiple variables were included in the study as predictors of physical IPV perpetration, including variables with more empirical support (i.e., childhood physical abuse victimization and interparental violence [i.e., "family violence"]; alcohol consumption, problems, and dependence [i.e., "alcohol use"]; attachment styles; "emotion dysregulation;" and relationship satisfaction) and variables with less empirical support (i.e., anger management, marijuana use, and beliefs characterized by sexism and acceptance of violence [i.e., "maladaptive beliefs"]). By combining all of these variables into a single model, the current study could identify which are most likely to be present in individuals who report perpetrating physical IPV. It is noteworthy that all of the model's distal variables (i.e., "family violence," anxious attachment, avoidant attachment, and "maladaptive beliefs") either directly or indirectly predicted physical IPV perpetration. Two of the six mediator variables (i.e., relationship dissatisfaction and emotion dysregulation) were successful as mediators. Stress, "alcohol use," marijuana use, and anger mismanagement did not serve as mediators for any distal variable.

Overall, the current study's findings suggest that individuals with anxious attachment are likely to have difficulty regulating their emotions, which in turn may contribute to their

perpetration of physical IPV in their relationships. Individuals with avoidant attachment are likely to have low relationship satisfaction, which in turn may contribute to their perpetration of physical IPV in their relationships. Findings also support the notion that individuals who experience violence during childhood, indirectly through their witness of physical violence amongst their parents and/or directly through physical assault perpetrated against them, are likely to model these violent behaviors in their adult romantic relationships. When considering these results through the perspective of Bandura's (1977) social learning theory, it may be that experiencing violence during childhood conveys the normalization of using violence as an appropriate way to manage conflict in relationships. Additionally, individuals with beliefs characterized by sexism and/or acceptance of IPV are likely to commit physical IPV perpetration in their relationships. From the perspective of the theory of planned behavior (Ajzen & Fishbein, 1980), physical IPV perpetration is preceded by an individual's willingness to engage in it and influenced by their own positive attitudes or beliefs about it. Perhaps these beliefs also surface during or shortly after episodes of IPV, when justification for violent behaviors is sought by the perpetrator or the victim, which reinforces the perpetrator's use of violence in the future.

Limitations

The current study had several limitations. It was limited by its sample of only undergraduate students made up of mostly women, compromising generalizability to broader populations. Another limitation of the current study is that findings are based on cross-sectional, retrospective data, which does not increase our understanding of temporal or causal relationships between variables, and naturally increases the risk of social desirability bias being introduced into the data (Vischers, Jaspaert, & Vervaeke, 2015). Additionally, although Bell and Naugle (2008) acknowledge the difficulty of designing a study that tests their entire theoretical

framework, omitting some variables suggested by Bell and Naugle (e.g., psychopathy, partner requests/demands, and beliefs about nonviolent conflict resolution strategies) limited the current study's ability to provide a conceptualization of physical IPV perpetration as comprehensive as Bell and Naugle proposed. It is also important to mention that this study was limited by its inability to evaluate gender differences among predictors of physical IPV perpetration. There are notable differences in IPV studies that have assessed predictors separately for men and women, including alcohol use (Baker & Stith, 2008; Feingold, Washburn, Tiberio, and Capaldi, 2015), emotion regulation (Zapor, Elmquist, Brem, Shorey, & Stuart, 2016), anger management (Baker & Stith, 2008), and interparental violence (Holt & Gillespie, 2008). In a similar way, this study also cannot address the potential for differences in predictors of physical IPV perpetration among sexual minority couples, an area of IPV literature that necessitates more attention. Lastly, it is important to acknowledge that data collection occurred during the COVID-19 pandemic. While it is difficult to ascertain what specific impacts COVID-19 had on data collection, ensuring that participants had access to the study on a device that was not accessible by their partner was an overlooked, but important screener, especially since 42% of the sample cohabitated with their current partner.

Future Research and Conclusions

Results support the use of Bell and Naugle's (2008) theoretical model in better understanding the nature of physical IPV perpetration through *distal/static* antecedents ("family violence," anxious attachment, avoidant attachment), a *verbal rule* ("maladaptive beliefs"), a *motivating factor* (relationship satisfaction), and a *behavioral repertoire* ("emotion dysregulation"). In the current study, "family violence" and "maladaptive beliefs" were positively associated with physical IPV perpetration. Anxious attachment was indirectly related

to physical IPV perpetration through “emotion dysregulation,” and avoidant attachment was indirectly related to physical IPV perpetration through relationship satisfaction. Inclusion of a variety of established predictors of physical IPV perpetration into a single model allowed the current study to identify “family violence,” anxious attachment, avoidant attachment, “maladaptive beliefs,” relationship dissatisfaction, and emotion dysregulation as those with the most predictive power compared to stress, “alcohol use,” marijuana use, and anger mismanagement in the studied sample.

Researchers may build upon the current study’s model by investigating those variables proposed by Bell and Naugle (2008) that were left out of the current study, including *motivating factors*: emotional distress and physical distress; *distal/static antecedents*: psychopathy, demographic features, relationship characteristics, and genetic background; *proximal antecedents*: partner requests/demands and interpersonal conflict; *discriminative stimuli*: presence of partner; presence/absence of children; location; and availability of weapons; *behavioral repertoire*: coping skills, problem solving skills, communication/conflict resolution skills; *verbal rules*: beliefs about relationships, beliefs about nonviolent conflict resolution strategies, and alcohol/drug expectancy beliefs; and *consequences*: stress reduction, escape/avoidance of an argument, partner compliance, praise from others, relationship dissolution, and police involvement.

Ecological momentary assessment would be an innovative way of future assessment of *proximal antecedent* variables related to physical IPV perpetration since they occur close in time to an IPV perpetration episode, are circumstantial, and typically change over time. Ecological momentary assessment would be particularly useful for evaluating Bell and Naugle’s (2008) discriminative stimuli, “in the moment” contextual variables that temporarily increase the

likelihood that IPV will occur. Future research may also aim to test variables within Bell and Naugle's framework that are most amenable to change as a way to improve IPV prevention and intervention efforts. For example, results from the current study suggest the importance of intervention programs focusing on the enhancement of emotion regulation skills as well as the improvement of relationship quality among couples. Results also highlight the importance of prevention efforts, especially those that focus on changing beliefs about IPV and de-normalizing violence as a reasonable approach to solving problems in relationships.

The current study highlights the importance of using a theoretically driven and comprehensive model when assessing variables that have historically demonstrated associations with IPV perpetration. While evaluating IPV in this manner is challenging, this approach directs researchers' focus on moving towards learning which variables are the most robust in predicting IPV perpetration and which prevention and intervention efforts to prioritize. The current study will ideally provide a foundation for future research to continue studying IPV in this manner.

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Table 1*Individual-Level Variables*

	Percent	Mean	SD
Sex			
Male	21.5%		
Female	78.5%		
Age		23.83	6.61
Ethnicity			
Hispanic, Latino, or Spanish Origin	10.8%		
Race			
White	43.7%		
Black or African American	38.4%		
Two or more races	11.5%		
Asian	5%		
American Indian and/or Alaska Native	0.9%		
Native Hawaiian and/or Other Pacific Islander	0.6%		
Cohabiting with partner	41.9%		
Length of relationship			
3 – 6 months	13.4%		
6 months – 1 year	14%		
1 – 2 years	23.4%		
2 – 5 years	28.3%		
More than 5 years	21%		

Table 2*Goodness-of-fit Statistics for All Measurement Models*

Model	χ^2	<i>df</i>	CFI	TLI	RMSEA	90% CI of RMSEA	SRMR
Substance Use: original CFA	13.56*	2	.95	.84	.13	[.07, .20]	.05
Substance Use: removed lowest loading	--	--	--	--	--	--	--
Emotion Tactics: original CFA	452.69*	35	.60	.48	.19	[.18, .21]	.13
Emotion Tactics: two-factor model	366.44*	34	.68	.57	.17	[.16, .19]	.12
Emotion Tactics: one-factor model	98.96*	9	.86	.76	.18	[.15, .21]	.07
Emotion Tactics: dropped lowest loading	17.53*	5	.98	.95	.09	[.05, .13]	.03
Maladaptive Beliefs: original CFA	--	--	--	--	--	--	--
Family Violence: original CFA	--	--	--	--	--	--	--
Combined Model	126.16*	71	.96	.95	.05	[.04, .06]	.05

Note. *df* = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; CI = confidence interval; SRMR = standardized root mean squared residual; * $p < .05$.

Table 3*Goodness-of-fit Statistics for All Structural Models*

Model	χ^2	<i>df</i>	CFI	TLI	RMSEA	90% CI of RMSEA	SRMR
Original SEM	515.49*	160	.83	.78	.08	[.08, .09]	.09
Dropped stress	352.57*	145	.89	.86	.07	[.06, .08]	.08
Dropped marijuana use	305.95*	131	.91	.88	.06	[.06, .07]	.08
Dropped anger mismanagement	263.70*	118	.92	.90	.06	[.05, .07]	.08
Final SEM: dropped alcohol use	186.15*	78	.93	.90	.06	[.05, .07]	.07

Note. *df* = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; CI = confidence interval; SRMR = standardized root mean squared residual; * = $p < .05$.

Table 4*Path Estimates for the Hypothesized Structural Model*

Path	<i>B</i>	β	<i>SE</i>	<i>p</i>
<u><i>a</i> paths</u>				
a1_1: FamViol→Stress	.26	.14	.235	.272
a1_2: FamViol→Alc	1.46*	.28	.577	.011
a1_3: FamViol→RSat	-.02	-.01	.113	.845
a1_4: FamViol→EmoReg	.24	.08	.378	.526
a1_5: FamViol→Marij	.06	.05	.092	.546
a1_6: FamViol→AngrMan	.07	.02	.209	.754
a2_1: Anxious→Stress	.17*	.42	.024	.000
a2_2: Anxious→Alc	.08	.07	.075	.280
a2_3: Anxious→RSat	-.04	-.09	.018	.055
a2_4: Anxious→EmoReg	.39*	.57	.046	.000
a2_5: Anxious→Marij	.01	.04	.017	.556
a2_6: Anxious→AngrMan	.05	.08	.037	.168
a3_1: Avoid→Stress	.02	.04	.024	.419
a3_2: Avoid→Alc	.07	.06	.085	.383
a3_3: Avoid→RSat	-.19*	-.44	.025	.000
a3_4: Avoid→EmoReg	.03	.04	.043	.473
a3_5: Avoid→Marij	.02	.07	.018	.262
a3_6: Avoid→AngrMan	.03	.05	.047	.496
a4_1: MalBlfs→Stress	.79	.05	2.297	.733
a4_2: MalBlfs→Alc	3.49	.08	5.020	.488
a4_3: MalBlfs→RSat	-.04	-.003	1.184	.972
a4_4: MalBlfs→EmoReg	.47	.02	3.705	.899
a4_5: MalBlfs→Marij	.61	.06	1.160	.601
a4_6: MalBlfs→AngrMan	5.99	.25	3.272	.067
<u><i>b</i> paths</u>				
b1: Stress→IPV	.09	.09	.295	.759
b2: Alc→IPV	.02	.05	.029	.502
b3: RSat→IPV	-.12	-.11	.063	.068
b4: EmoReg→IPV	.13	.21	.191	.513
b5: Marij→IPV	.09	.06	.082	.250
b6: AngrMan→IPV	.02	-.03	.042	.666
<u><i>c'</i> paths</u>				
c'1: FamViol→IPV	.46	.25	1.744	.791
c'2: Anxious→IPV	.04	.09	.109	.736
c'3: Avoid→IPV	.01	.01	.034	.881
c'4: MalBlfs→IPV	2.07	.13	14.559	.887
Indirect effects	<i>B</i>	β	<i>SE</i>	95% BCCI

Table 4 (continued).

	.02	.01	.950	[-1.540, 1.587]
a1_2b2: FamViol→Alc→IPV	.03	.02	.060	[-.070, .128]
a1_3b3: FamViol→RSat→IPV	.00	.00	.016	[-.024, .029]
a1_4b4: FamViol→EmoReg→IPV	.03	.02	.746	[-1.197, 1.257]
a1_5b5: FamViol→Marij→IPV	.01	.00	.017	[-.023, .033]
a1_6b6: FamViol→AngrMan→IPV	.00	.00	.023	[-.039, .036]
a2_1b1: Anxious→Stress→IPV	.02	.04	.055	[-.08, .11]
a2_2b2: Anxious→Alc→IPV	.00	.00	.003	[-.004, .007]
a2_3b3: Anxious→RSat→IPV	.00	.01	.003	[-.002, .010]
a2_4b4: Anxious→EmoReg→IPV	.05	.12	.073	[-.071, .168]
a2_5b5: Anxious→Marij→IPV	.00	.00	.429	[-.003, .004]
a2_6b6: Anxious→AngrMan→IPV	.00	.00	.003	[-.005, .003]
a3_1b1: Avoid→Stress→IPV	.00	.00	.008	[-.012, .015]
a3_2b2: Avoid→Alc→IPV	.00	.00	.004	[-.005, .008]
a3_3b3: Avoid→RSat→IPV	.02*	.05	.013	[.001, .043]
a3_4b4: Avoid→EmoReg→IPV	.00	.01	.011	[-.014, .022]
a3_5b5: Avoid→Marij→IPV	.00	.00	.003	[-.003, .007]
a3_6b6: Avoid→AngrMan→IPV	.00	.00	.002	[-.005, .003]
a4_1b1: MalBlfs→Stress→IPV	.07	.01	7.731	[-12.646, 12.788]
a4_2b2: MalBlfs→Alc→IPV	.07	.00	.496	[-.747, .884]
a4_3b3: MalBlfs→RSat→IPV	.01	.00	.161	[-.261, .270]
a4_4b4: MalBlfs→EmoReg→IPV	.06	.00	6.229	[-10.188, 10.305]
a4_5b5: MalBlfs→Marij→IPV	.06	.00	.318	[-.354, .240]
a4_6b6: MalBlfs→AngrMan→IPV	.11	.01	.350	[-.467, .684]

Note. FamViol = “family violence” latent variable; Anxious = anxious attachment; Avoid = avoidant attachment; MalBlfs = “maladaptive beliefs” latent variable; Stress = recent stressors; Alc = “alcohol use” latent variable; RSat = relationship satisfaction; EmoReg = “emotion dysregulation” latent variable; Marij = marijuana use; AngrMan = anger mismanagement; IPV = intimate partner violence. 95% BCCI = 95% bias-corrected bootstrap confidence intervals for unstandardized estimates. *SE* and *p*-values are from unstandardized results. **p* < .05.

Table 5*b Path Estimates After Each Structural Model Re-specification*

<i>b</i> paths	<i>B</i>	β	<i>SE</i>	<i>p</i>
<u>Dropped stress:</u>				
Alc→IPV	.02	.06	.028	.425
RSat→IPV	-.12*	-.12	.061	.043
EmoReg→IPV	.16*	.26	.044	.000
Marij→IPV	.10	.06	.080	.234
AngrMan→IPV	.00	.00	.038	.969
<u>Dropped marijuana use:</u>				
Alc→IPV	.03	.07	.026	.311
RSat→IPV	-.12	-.11	.061	.050
EmoReg→IPV	.17*	.27	.042	.000
AngrMan→IPV	.00	.00	.038	.965
<u>Dropped anger mismanagement:</u>				
Alc→IPV	.03	.07	.026	.315
RSat→IPV	-.12	-.11	.062	.060
EmoReg→IPV	.17*	.27	.042	.000
<u>Dropped alcohol use:</u>				
RSat→IPV	-.12*	-.11	.061	.044
EmoReg→IPV	.18*	.29	.041	.000

Note. Alc = “alcohol use” latent variable; RSat = relationship satisfaction; EmoReg = “emotion dysregulation” latent variable; Marij = marijuana use; AngrMan = anger mismanagement; IPV = intimate partner violence. *SE* and *p*-values are from unstandardized results. * $p < .05$.

Table 6*Correlations of Variables of Interest*

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. IPV	-																				
2. CPAVic	.27**	-																			
3. M2FPA	.39**	.34**	-																		
4. F2MPA	.31**	.36**	.79**	-																	
5. Avoid	.19**	.12*	.11	.03	-																
6. Anxious	.14*	.16**	.10	.10	.32**	-															
7. ViolBel	.33**	.06	.21**	.16**	.14**	.08	-														
8. BenevSx	.15**	.03	.02	.04	.12*	.07	.14*	-													
9. HostlSx	.24**	.06	.11*	.10	.21**	.12*	.18*	.49**	-												
10. RSat	-.14*	-.06	-.08	-.03	-.47**	-.24**	.21**	-.07	-.10	-											
11. NoAcpt	.19**	.11*	.13*	.13*	.20**	.48**	.02	.05	.00	-.07	-										
12. Goals	.19**	.03	.11	.13*	.06	.35**	.04	.06	.04	-.04	.55	-									
13. Impulse	.26**	.13*	.14*	.12*	.15**	.35**	.05	.09	.17	-.10	.45**	.42**	-								
14. Strateg	.11*	.05	.13*	.16**	.17**	.53**	.02	.03	.10	-.12*	.61**	.55*	.61**	-							
15. Clarity	.13*	.06	.12*	.11	.24**	.39**	.09	.04	.14*	-.06	.52**	.42**	.54**	.57**	-						
16. Stress	.23**	.22**	.23**	.18**	.19**	.46**	.06	.13*	.12*	-.21**	.53**	.50**	.46**	.54**	.46**	-					
17. Marij	.08	.02	.09	.08	.06	.06	.12*	-.03	-.07	.00	.10	.06	.19**	.18**	.10	.09	-				
18. Consume	.14	.03	.10	.08	.03	.10	.08	.03	.07	.00	.14*	.13*	.08	.01	.02	.12*	.23**	-			
19. Depend	.31**	.15**	.44**	.37**	.11*	.08	.16**	.08	.21**	-.12*	.14*	.13*	.22**	.23**	.16**	.16**	.05	.42**	-		
20. Prblms	.26**	.05	.25**	.18**	.10	.12*	.15**	.02	.11	-.12*	.17**	.13*	.24**	.19**	.14*	.26**	.10	.53**	.61**	-	
21. AngrMan	.33**	.22**	.13*	.09	.21**	.31**	.14*	.10	.11*	-.43**	.21**	.24**	.29**	.28**	.13*	.41**	.06	.05	.12	.18**	-

Note. IPV = physical assault perpetration; CPAVic = childhood physical abuse victimization; M2FPA = mother-to-father physical assault; F2MPA = father-to-mother physical assault; Avoid = avoidant attachment; Anxious = anxious attachment; ViolBel = violent beliefs; BenevSx = benevolent sexism; HostlSx = hostile sexism; RSat = relationship satisfaction; NoAcpt = nonacceptance of emotional responses; Goals = difficulty engaging in goal-directed behavior; Impulse = impulse control difficulties; Strateg = limited access to emotion regulation strategies; Clarity = lack of emotional clarity; Stress = current/recent stressors; Marij = marijuana use; Consume = alcohol consumption; Depend = alcohol dependence; Prblms = alcohol problems; AngrMan = anger mismanagement.

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

Table 7*Path Estimates for the Final Structural Model*

Path	<i>B</i>	β	<i>SE</i>	<i>p</i>
<i>a</i> paths				
a1_1: FamViol→RSat	-.02	-.01	.116	.878
a1_2: FamViol→EmoReg	.22	.08	.205	.288
a2_1: Anxious→RSat	-.04	-.09	.018	.056
a2_2: Anxious→EmoReg	.39*	.57	.046	.000
a3_1: Avoid→RSat	-.19*	-.44	.025	.000
a3_2: Avoid→EmoReg	.03	.04	.042	.430
a4_1: MalBlfs→RSat	-.02	-.003	.116	.878
a4_2: MalBlfs→EmoReg	.02	.02	2.263	.933
<i>b</i> paths				
b1: RSat→IPV	-.12*	-.11	.061	.044
b2: EmoReg→IPV	.18*	.21	.041	.000
<i>c'</i> paths				
c'1: FamViol→IPV	.50*	.25	.169	.003
c'2: Anxious→IPV	.04	.09	.027	.129
c'3: Avoid→IPV	.00	.01	.126	.900
c'4: MalBlfs→IPV	2.26*	.13	1.06	.034
Indirect effects	<i>B</i>	β	<i>SE</i>	BCCI
a1_1b1: FamViol→RSat→IPV	.00	.00	.016	[-.024, .028]
a1_2b2: FamViol→EmoReg→IPV	.04	.02	.039	[-.026, .103]
a2_1b1: Anxious→RSat→IPV	.00	.01	.004	[-.002, .010]
a2_2b2: Anxious→EmoReg→IPV	.07*	.12	.018	[.040, .099]
a3_1b1: Avoid→RSat→IPV	.02*	.05	.012	[.003, .043]
a3_2b2: Avoid→EmoReg→IPV	.01	.01	.008	[-.007, .019]
a4_1b1: MalBlfs→RSat→IPV	.03	.00	.152	[-.261, .284]
a4_2b2: MalBlfs→EmoReg→IPV	.00	.00	.428	[-.708, .701]

Note. FamViol = family violence; RSat = relationship satisfaction; EmoReg = emotion dysregulation; Anxious = anxious attachment; Avoid = avoidant attachment; MalBlfs = maladaptive beliefs; IPV = physical assault perpetration. *SE* and *p*-values are from unstandardized results. **p* < .05.

Figure 1

Conceptual Model of Physical IPV Perpetration

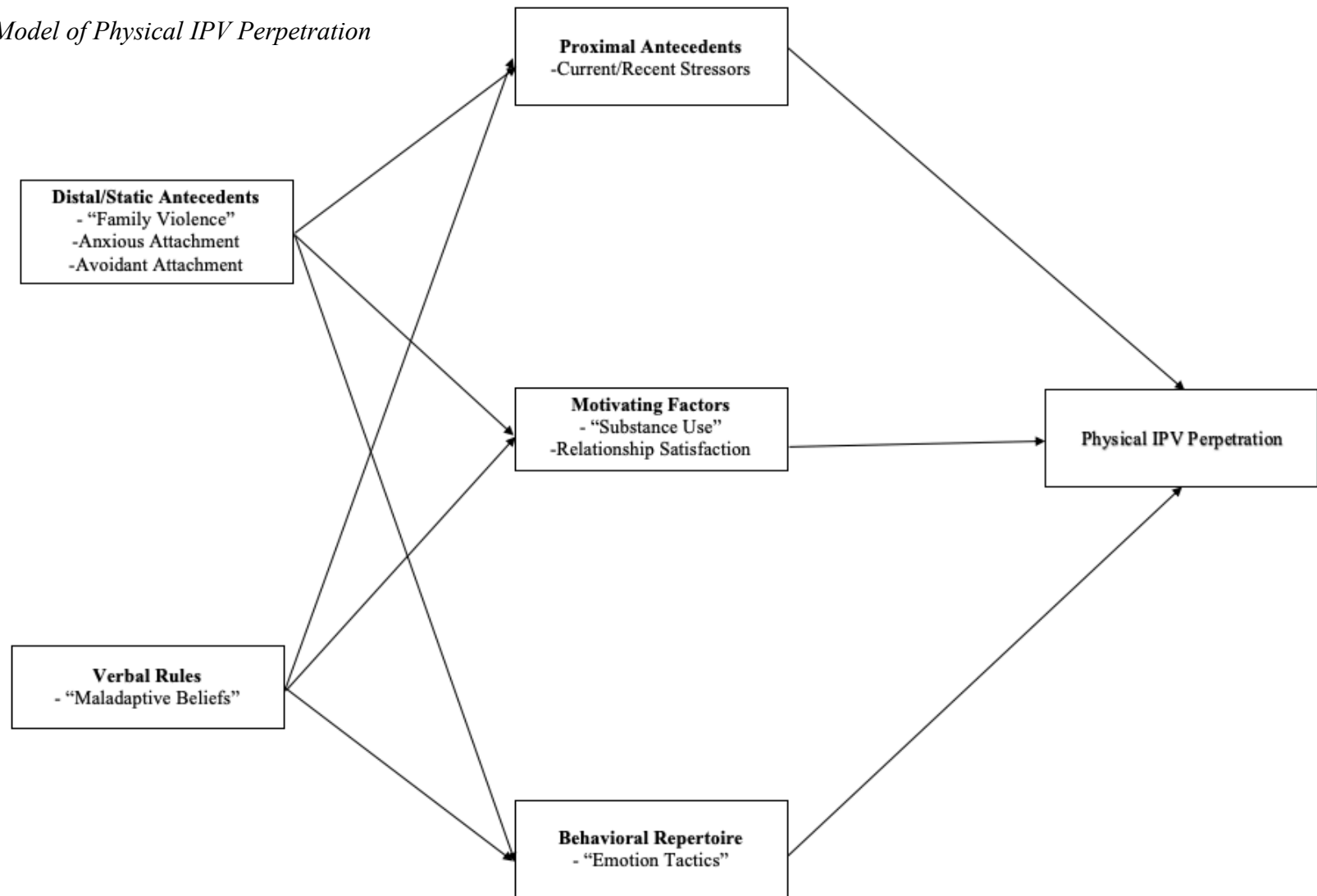


Figure 2

Statistical Model of Physical IPV Perpetration

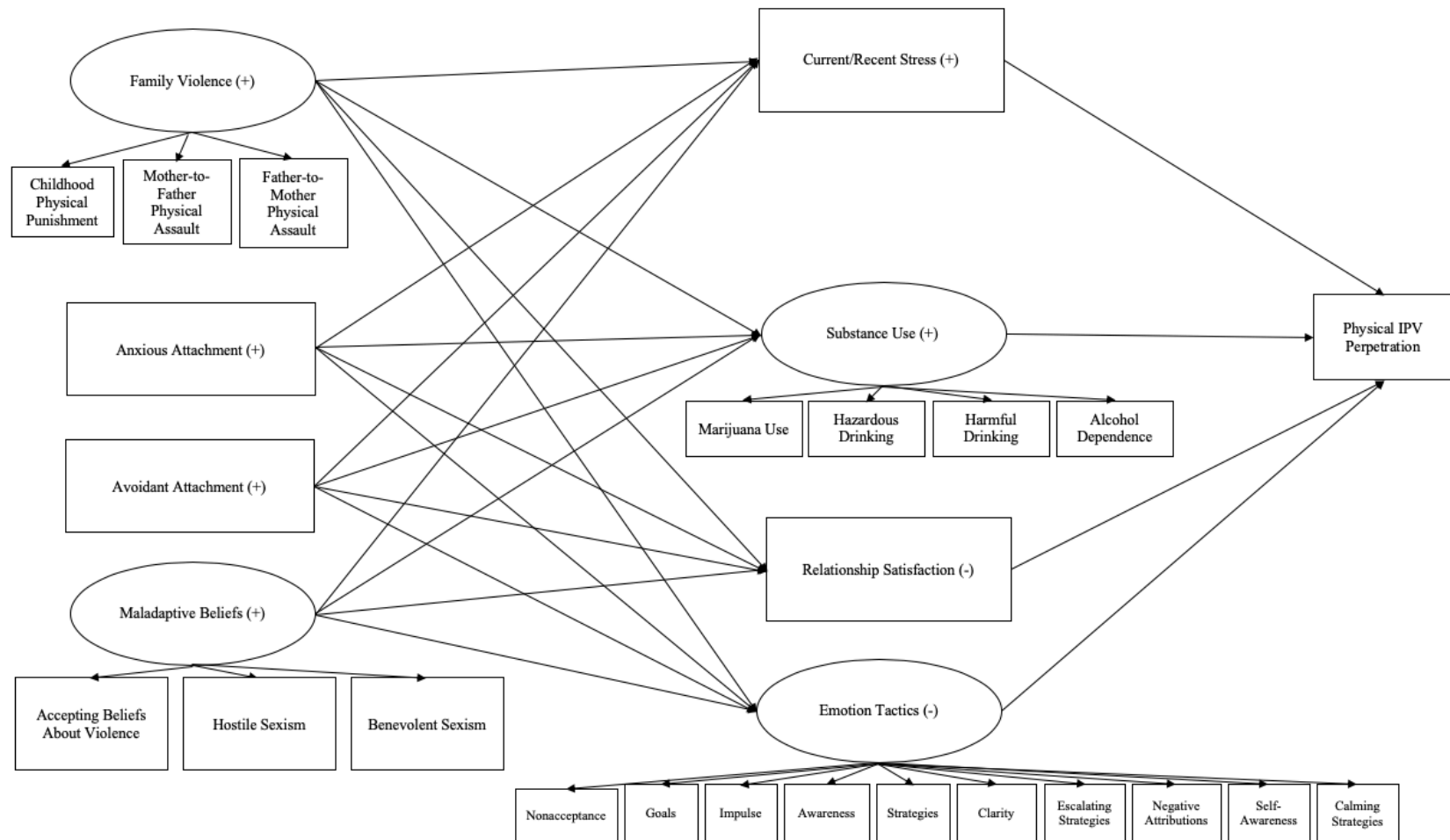
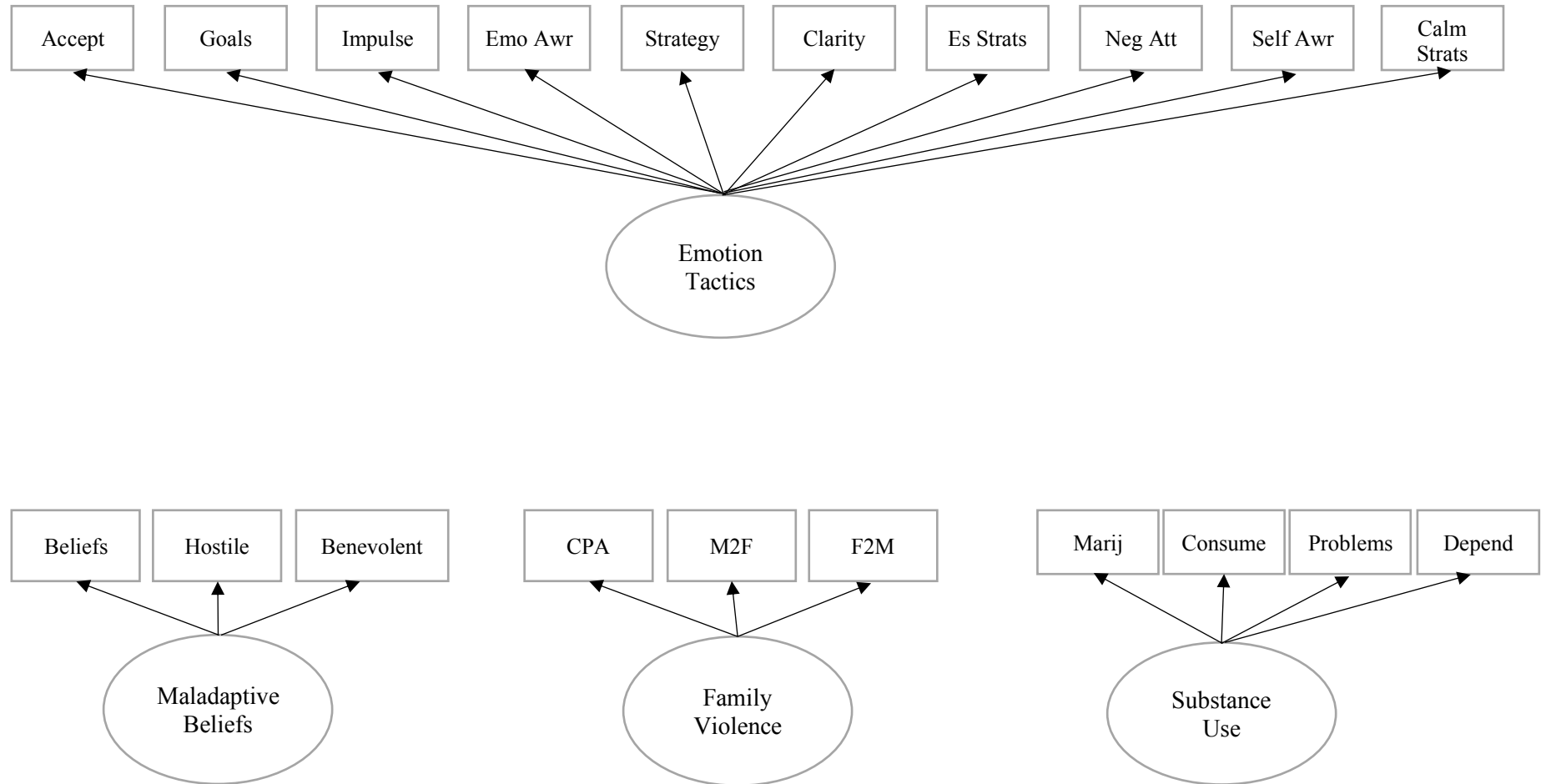


Figure 3

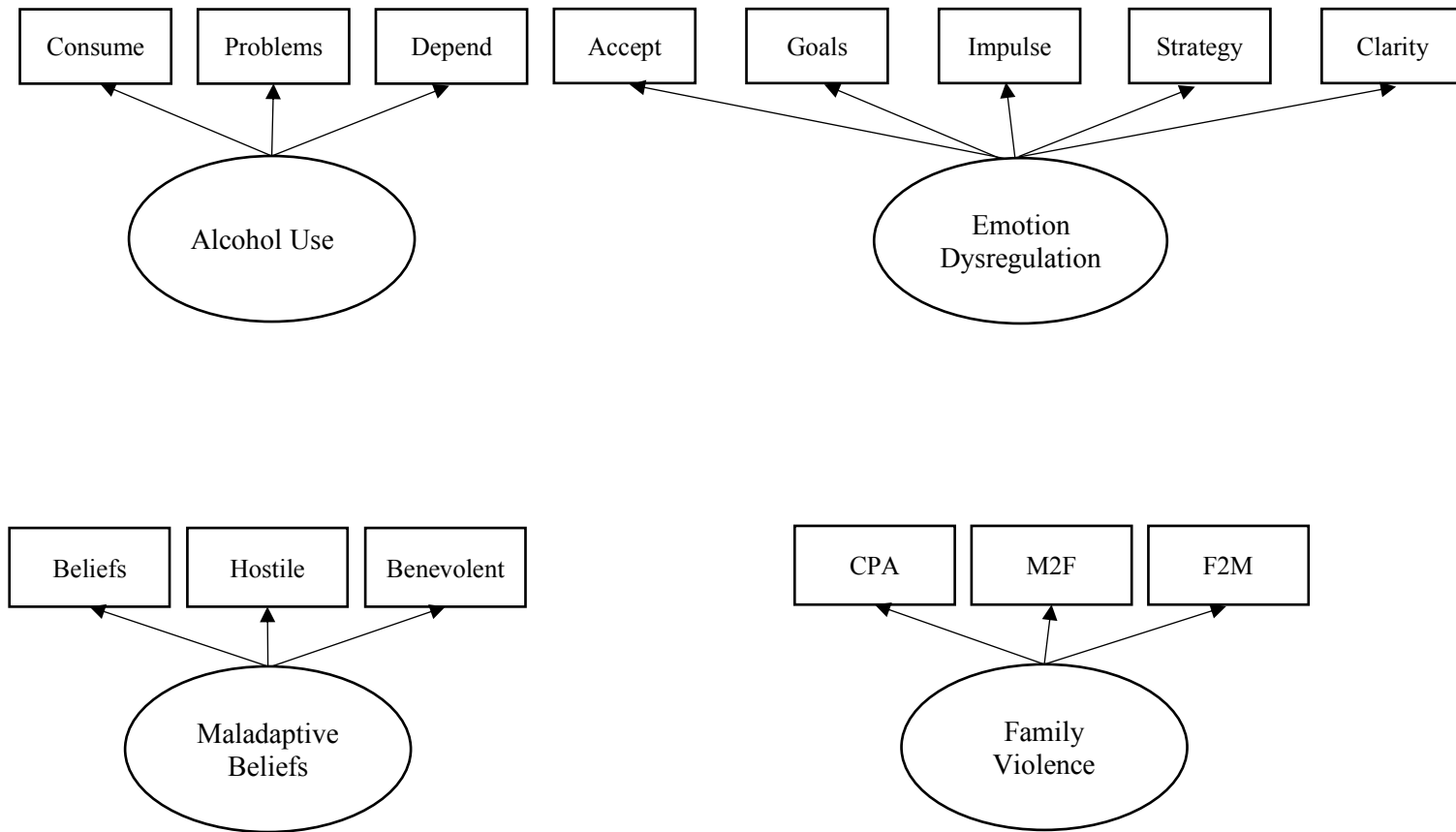
Proposed Measurement Model



Note. For “emotion tactics,” Accept = nonacceptance of emotional responses; Goals = difficulty engaging in goal-directed behavior; Impulse = impulse control difficulties; Emo Awr = lack of emotional awareness; Strategy = limited access to emotion regulation

Figure 3 (continued).

strategies; Clarity = lack of emotional clarity; Es Strats = escalating strategies; Neg Att = negative attributions; Self Awr = self-awareness; Calm Strats = calming strategies). For “maladaptive beliefs,” Beliefs = accepting beliefs about violence; Hostile = hostile sexism; Benevolent = benevolent sexism. For “family violence,” CPA = childhood physical abuse victimization; M2F = mother-to-father physical assault, F2M = father-to-mother physical assault. For “substance use,” Marij = marijuana use; Consume = alcohol consumption; Problems = alcohol problems, Depend = alcohol dependence.

Figure 4*Final Measurement Model*

Note. For “alcohol use,” Consume = alcohol consumption; Problems = alcohol problems; Depend = alcohol dependence. For “emotion dysregulation,” Accept = nonacceptance of emotional responses; Goals = difficulty engaging in goal-directed behavior; Impulse = impulse control difficulties; Strategy = limited access to emotion regulation strategies; Clarity = lack of emotional clarity. For “maladaptive beliefs,” Beliefs = accepting beliefs about violence; Hostile = hostile sexism; Benevolent = benevolent sexism. For “family violence,” CPA = childhood physical abuse victimization; M2F = mother-to-father physical assault; F2M = father-to-mother physical assault.

Figure 5

Hypothesized Structural Model

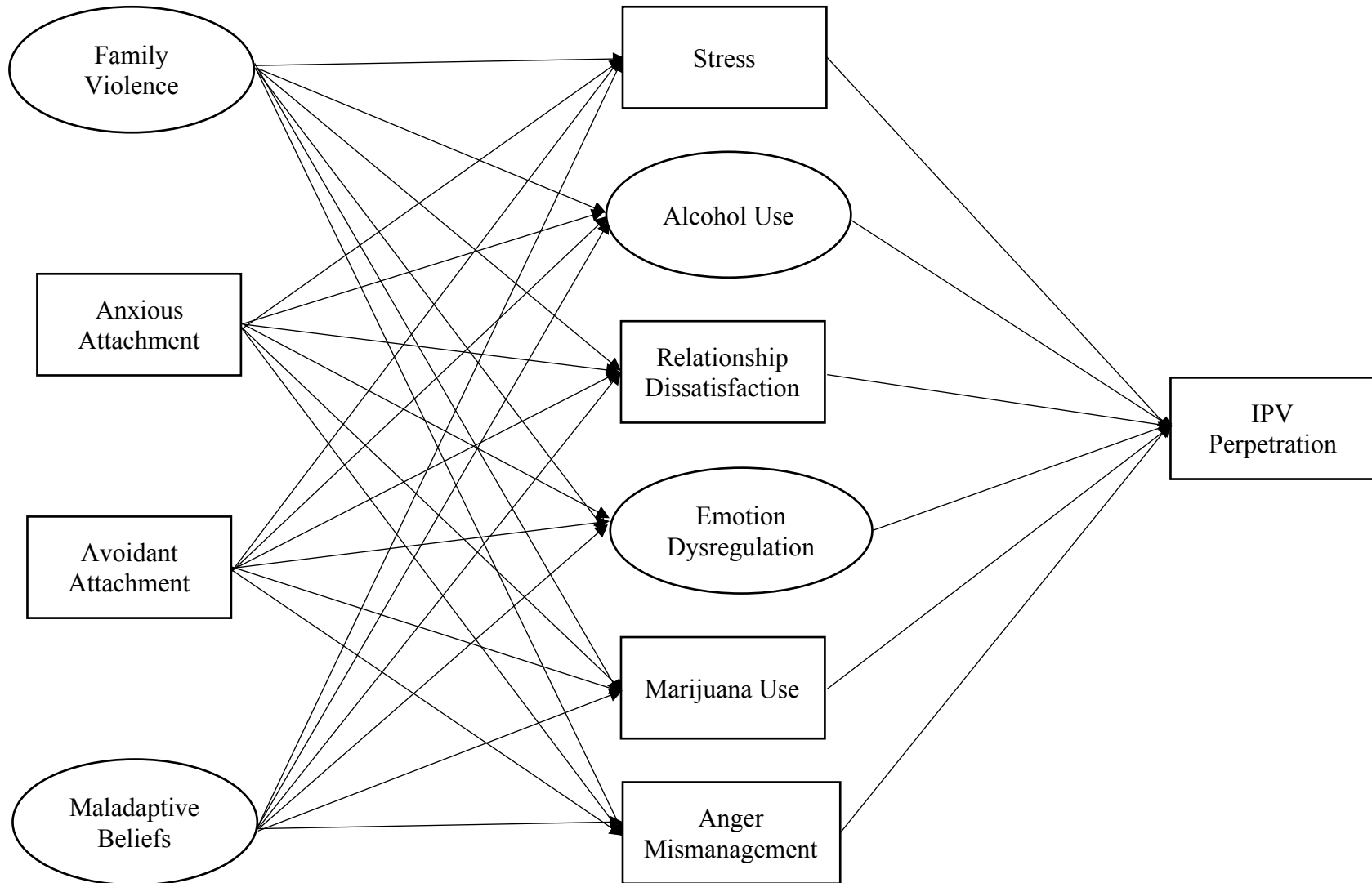
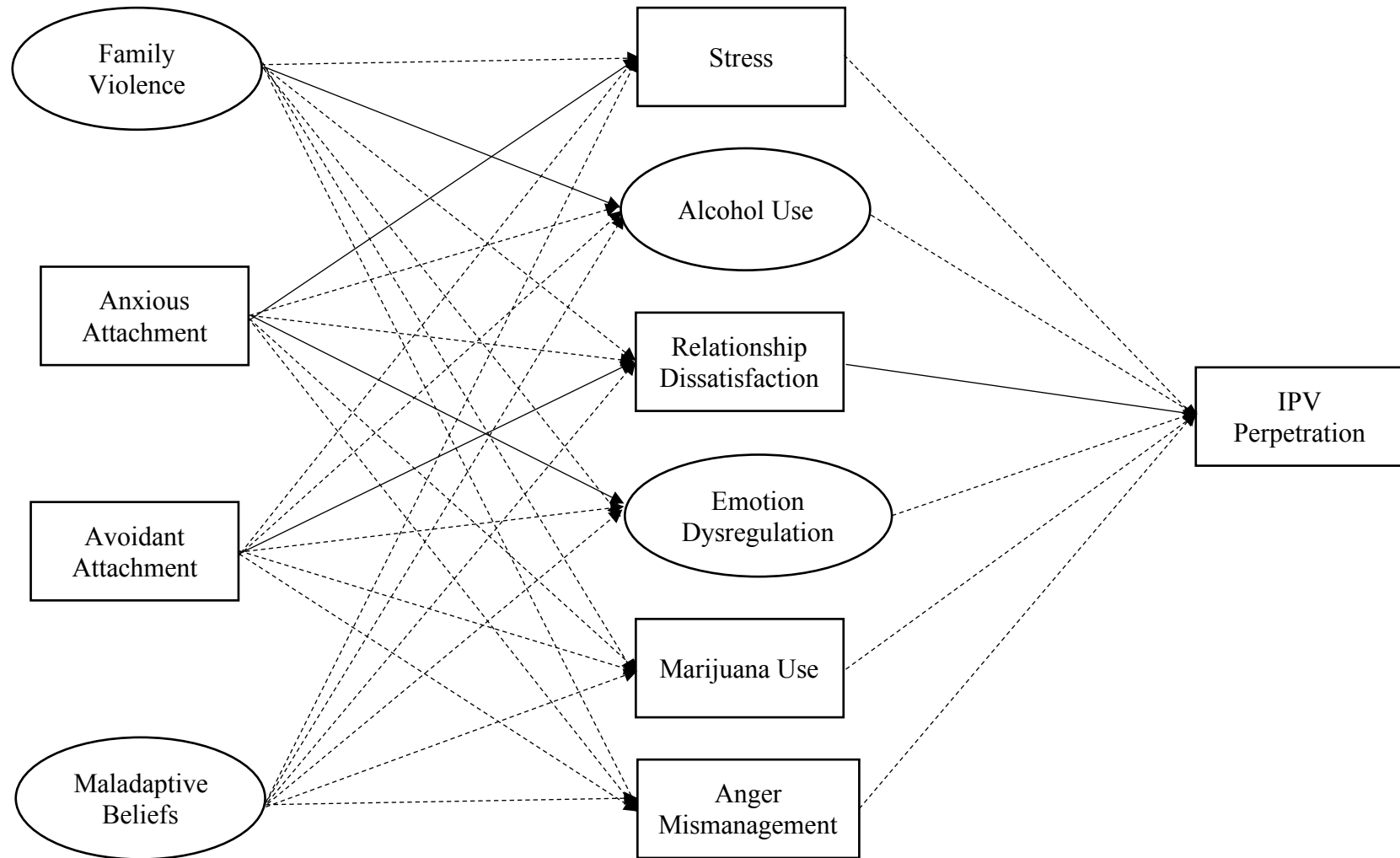


Figure 6

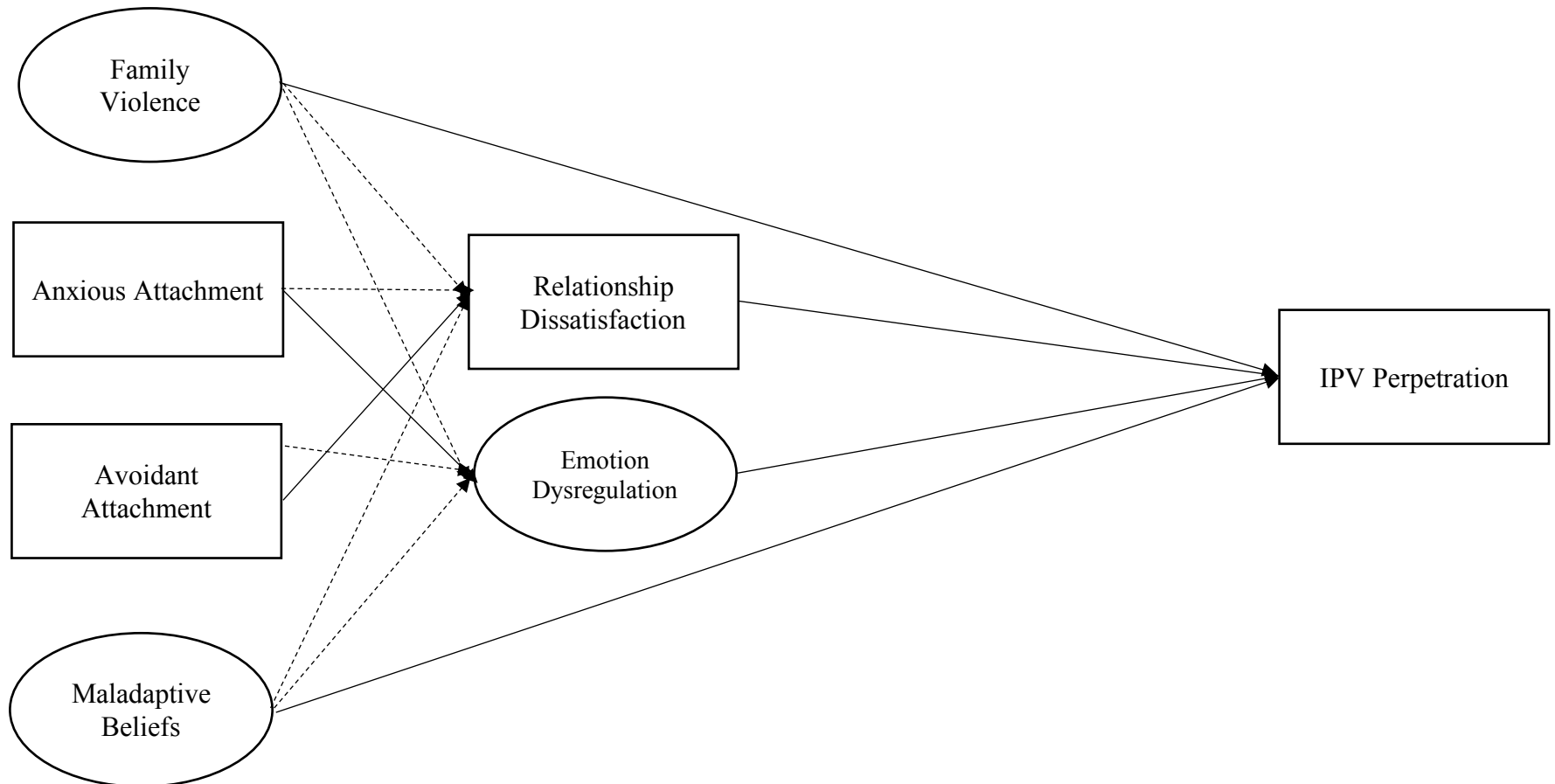
Results of Hypothesized Structural Model



Note. Standardized coefficients omitted from the figure for simplicity, but are presented in Table 4. Nonsignificant paths are represented with dashed lines.

Figure 7

Results of Final Structural Model



Note. Standardized coefficients (presented in Table 7) are omitted from the figure for simplicity. Nonsignificant paths are represented with dashed lines.

APPENDICES

APPENDIX A

SCREENING QUESTIONS

Your responses to the following screening questions will be used to determine if you are eligible to participate in this study. This screening is brief and voluntary. You will not be asked to provide any additional information until your eligibility is determined. You should be aware that although you may choose not to answer any question, such omission might impact your eligibility for the study.

1. Are you currently in a romantic relationship?

1 = yes

2 = no

2. How long have you and your current partner been together?

1 = 0-2 months

2 = 3-6 months

3 = 6 months-1 year

4 = 1-2 years

5 = 2-5 years

6 = More than 5 years

3. On average, how many times do you physically see your partner each week?

1 = I don't physically see my partner each week

2 = 1-2 days per week

3 = 3-6 days per week

4 = every day

4. The following are a list of common causes of conflict in a relationship. Please mark all that apply to your relationship right now.

1 = we are becoming emotionally distant

2 = there is spillover of non-relationship stress (such as school tension) into our relationship

3 = our relationship is becoming nonromantic and passionless; the fire is dying

4 = we are having problems in our sex life

5 = our relationship is not dealing well with important changes (such as the birth of a child, job loss, move, illness, or death of a loved one)

6 = our relationship is not handling well a major issue about children (this includes whether to have children)

7 = our relationship is not handling well a major issue or event concerning family

8 = one of us is flirtatious outside the relationship, or may have cheated, and/or there is jealousy.

- 9 = unpleasant fights have occurred between us
- 10 = we have differences in our basic goals and values or desired lifestyle
- 11 = very disturbing events (for example, violence, drugs, cheating) have occurred within our relationship
- 12 = we are not working well as a team
- 13 = we are having trouble sharing power and influence
- 14 = we are having trouble handling financial issues well
- 15 = we are not having much fun together these days
- 16 = we are not feeling close about spiritual issues these days
- 17 = we are having conflict(s) about being a part of and building community together
- 18 = the above types of conflict don't apply to our relationship

APPENDIX B

NOTIFICATION SHEET

Notification Sheet

Title of Research: Relationships

Investigators: Dr. Barbara Winstead and Phoebe Hitson

Description of Research: This research questionnaire asks you to read various questionnaires, indicate how you would respond, and provide information about yourself and your relationship with a romantic partner. Specifically, you will be asked about potential violence between you and your partner; potential violence you witnessed between your parents; potential violence you experienced as a child; how you experience relationships; and your beliefs, alcohol use, cannabis use, emotions, and stress.

Risks and Benefits: There are no direct benefits for participating in this research. There is the potential for psychological distress related to reflecting on experiences with your romantic partner and parents. There also exists the possibility that you may be subject to risks that have not yet been identified. The main benefit from this study is your contribution to research regarding intimate relationships and information about yourself that you may gain through your participation. You may also find the questionnaire interesting.

Costs and Payments: Your participation in this study is voluntary. It will take approximately 65 minutes to complete the study. If you decide to participate in this study, you will have the option to enter a raffle for a chance to win one of four \$50 Amazon gift cards.

Confidentiality: You will not put your name on any of the questionnaire materials; your responses will be anonymous. In order to enter a raffle for a chance to win one of four \$50 Amazon gift cards, you will be directed to a separate survey where, if you want to participate in the raffle, you will need to provide the researchers with your email address. Your e-mail address will not be associated in any way with your answers to the questionnaires. Also, participation in the raffle is completely voluntary - you do not have to provide your email address.

Withdrawal Privilege: You are free to refuse to participate in this study or to withdraw at any time.

Compensation for Illness and Injury: It is unlikely that any illness or injury will result from your participation in this research. If any injury should result, Old Dominion University does not provide insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in this research project, you may contact the researchers, Dr. Barbara Winstead at bwinstea@odu.edu or Phoebe Hitson at phits001@odu.edu or the Office of Research, (757) 683-4636.

Voluntary Consent: By participating in this study, you are saying that you have read this form and you are satisfied that you understand this form, the research project, and the risks and benefits. If you have any questions regarding this study, please contact the researchers.

This questionnaire contains items designed to measure your experiences, attitudes, and behaviors. Please read each item carefully and answer each item as honestly as possible. Some of the questions you will read concern family and relationship violence. Below are resources and support that you may find useful if you have concerns about yourself or your relationships.

Old Dominion University Office of Counseling Services
757-683-4401

Webb University Center
1526 W 49th St
Norfolk, VA 23529

National Domestic Violence Hotline
1-800-799-SAFE (7233)
<https://www.thehotline.org/>

Substance Abuse and Mental Health Services Administration
1-800-662-HELP (4357)
<https://www.samhsa.gov/find-help/national-helpline>

APPENDIX C

DEMOGRAPHIC QUESTIONS

1. Which sex were you assigned at birth?

1 = Male

2 = Female

3 = Prefer not to answer

2. How would you describe yourself?

1 = Woman

2 = Man

3 = Cisgender

4 = Trans woman

5 = Trans man

6 = Trans gender

7 = Nonbinary

8 = Gender queer

9 = Gender fluid

10 = Gender non-conforming

11 = Agender

12 = Other (please specify)

13 = Prefer not to answer

3. What is your age in years?

(numeric insert text)

4. Are you Hispanic, Latino, or Spanish origin?

1 = Yes

2 = No

5. What is your race?

1 = White

2 = Black or African America

3 = American Indian and/or Alaska Native

4 = Asian

5 = Native Hawaiian and/or Other Pacific Islander

6 = Two or more races

6. Which sexual identity BEST describes you?

1 = Heterosexual/straight

2 = Lesbian

3 = Gay

4 = Bisexual

5 = Queer

6 = Questioning

7 = Other

7. Do you live with your partner?

1 = yes

2 = no

8. Keeping your current relationship in mind, how many break ups have you experienced with your partner?

(numeric insert text)

9. How long have you and your current partner been together?

1 = 0-2 months

2 = 3-6 months

3 = 6 months-1 year

4 = 1-2 years

5 = 2-5 years

6 = More than 5 years

APPENDIX D

PHYSICAL ASSAULT PERPETRATION QUESTIONS

Construct: physical assault perpetration

Measure: Revised Conflict Tactics Scales (CTS-2; Straus et al., 1996), physical assault perpetration subscale

Directions: 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 indicate how many times you did each of these things in the past year. If you did not do one of these things in the past year, but it happened before that, select “7.”

Response Options:

- 1 = once in the past year
- 2 = twice in the past year
- 3 = 3-5 times in the past year
- 4 = 6-10 times in the past year
- 5 = 11-20 times in the past year
- 6 = more than 20 times in the past year
- 7 = not in the past year, but it did happen before
- 0 = this has never happened

Items:

1. Threw something at my partner that could hurt.
2. Twisted my partner's arm or hair.
3. Pushed or shoved my partner.
4. Grabbed my partner.
5. Slapped my partner.
6. Used a knife or gun on my partner.
7. Punched or hit my partner with something that could hurt.
8. Choked my partner.
9. Slammed my partner against a wall.
10. Beat up my partner.
11. Burned or scalded my partner on purpose.
12. Kicked my partner.

APPENDIX E

CHILDHOOD PHYSICAL ABUSE VICTIMIZATION QUESTIONS

Construct: childhood physical abuse victimization

Measure: Assessing Environments III (AE-III; Berger & Knutson, 1984), physical punishment subscale

Adapted directions for the current study from Gauthier et al. (1996): Please rate the following descriptions of parent-child interactions in reference to both your mother/stepmother and your father/stepfather.

Response Options:

- 0 = Never
- 1 = Rarely
- 2 = Sometimes
- 3 = Frequently

Items:

1. My mother/father used physical discipline with me.
2. I required medical attention for injuries caused by my mother/father.
3. My mother/father used to spank me.
4. My mother/father used to hit me with something other than her/his hands when I did something wrong.
5. When my mother/father was angry with me, s/he sometimes grabbed me by the throat and started to choke me.
6. I received injuries from the discipline used by my mother/father.
7. My mother/father used to punch me when s/he got angry with me.
8. My mother/father used to hit me with her/his hands (other than spanking).
9. When I did something wrong, my mother/father sometimes tied me up.
10. I was severely beaten by my mother/father.
11. When I was bad my mother/father used to lock me in a closet.

APPENDIX F

INTERPARENTAL VIOLENCE QUESTIONS

Constructs: mother-to-father physical assault and father-to-mother physical assault

Measure: Adult-Recall Version of the Revised Conflict Tactics Scales (CTS2-CA; Straus, 2000), mother-to-father physical assault subscale and father-to-mother physical assault subscale

Directions: No matter how well parents get along, there are times when they disagree, get annoyed with each other, 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. Parents also have many different ways of trying to settle their differences with each other. This is a list of things that might happen when your parents had differences or were angry with each other.

If your mother and father (or step mother or step father) were not living together in the year when you were about 13 years old and you were living with your mother, please answer about your mother and the man she was living with then. If you were living with your father or step father, but not your mother, please answer about your father and the woman he was living with then.

Please indicate how many times each of them did 'the things on this list in the year when you were about 13 years old. If a parent did not do one of these things in the year when you were about 13 years old but it happened some other year before or after that, select "7".

How often did this happen in the year when you were about 13 years old?

Response Options:

- 1 = once in the past year
- 2 = twice in the past year
- 3 = 3-5 times in the past year
- 4 = 6-10 times in the past year
- 5 = 11-20 times in the past year
- 6 = more than 20 times in the past year
- 7 = not in the past year, but it did happen before
- 0 = this has never happened

Mother-to-father physical assault items:

- 1. Mother threw something at father that could hurt.
- 2. Mother twisted father's arm or hair.
- 3. Mother pushed or shoved father.
- 4. Mother grabbed father.
- 5. Mother slapped father.

6. Mother used a knife or gun on father.
7. Mother punched or hit father with something that could hurt.
8. Mother choked father.
9. Mother slammed father against a wall.
10. Mother beat up father.
11. Mother burned or scalded father on purpose.
12. Mother kicked father.

Father-to-mother physical assault items:

1. Father threw something at mother that could hurt.
2. Father twisted mother's arm or hair.
3. Father pushed or shoved mother.
4. Father grabbed mother.
5. Father slapped mother.
6. Father used a knife or gun on mother.
7. Father punched or hit mother with something that could hurt.
8. Father choked mother.
9. Father slammed mother against a wall.
10. Father beat up mother.
11. Father burned or scalded mother on purpose.
12. Father kicked mother.

APPENDIX G

ATTACHMENT QUESTIONS

Constructs: anxious attachment, avoidant attachment

Measure: Experiences in Close Relationships Scale (ECR)-Short Form (Wei, Russell, Mallinckrodt, & Vogel, 2007).

Directions: The following statements concern how you feel in romantic relationships. Please respond to each statement by indicating how much you agree or disagree.

Response Options:

- 1 = strongly disagree
- 2 = disagree
- 3 = slightly disagree
- 4 = neutral
- 5 = slightly agree
- 6 = agree
- 7 = strongly agree

Items:

1. It helps to turn to my romantic partner in times of need.
2. I need a lot of reassurance that I am loved by my partner.
3. I want to get close to my partner, but I keep pulling back.
4. I find that my partner doesn't want to get as close as I would like.
5. I turn to my partner for many things, including comfort and reassurance.
6. My desire to be very close sometimes scares people away.
7. I try to avoid getting too close to my partner.
8. I do not often worry about being abandoned.
9. I usually discuss my problems and concerns with my partner.
10. I get frustrated if romantic partner is not available when I need them.
11. I am nervous when partner gets too close to me.
12. I worry that a romantic partner won't care about me as much as I care about them.

APPENDIX H

BELIEFS ABOUT VIOLENCE QUESTIONS

Construct: accepting beliefs about violence

Measure: The Intimate Partner Violence Attitude Scale (IPVAS; Smith, Thompson, Tomaka, & Buchanan, 2005), violence subscale

Developed directions for the current study: Please rate the following statements regarding couple interactions.

Response Options:

- 1 = strongly disagree
- 2 = disagree
- 3 = agree
- 4 = strongly agree

Items:

1. It would never be appropriate to hit or try to hit one's partner with an object.
2. I think it is wrong to ever damage anything that belongs to my partner.
3. Threatening a partner with a knife or gun is never appropriate.
4. It would not be appropriate to ever kick, bite, or hit a partner with one's fist.
5. Using a knife or gun on a partner is never appropriate.

Appendix I

SEXISM QUESTIONS

Constructs: benevolent sexism, hostile sexism

Measure: The Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996)

Directions: Below is a series of statements concerning men and women and their relationships in contemporary society. Please indicate the degree to which you agree or disagree with each statement.

Response Options:

- 0 = disagree strongly
- 1 = disagree somewhat
- 2 = disagree slightly
- 3 = agree slightly
- 4 = agree somewhat
- 5 = agree strongly

Items:

1. No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman.
2. Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality."
3. In a disaster, women ought not necessarily to be rescued before men.
4. Most women interpret innocent remarks or acts as being sexist.
5. Women are too easily offended.
6. People are often truly happy in life without being romantically involved with a member of the other sex.
7. Feminists are not seeking for women to have more power than men.
8. Many women have a quality of purity that few men possess.
9. Women should be cherished and protected by men.
10. Most women fail to appreciate fully all that men do for them.
11. Women seek to gain power by getting control over men.
12. Every man ought to have a woman whom he adores.
13. Men are complete without women.
14. Women exaggerate problems they have at work.
15. Once a woman gets a man to commit to her, she usually tries to put him on a tight leash.
16. When women lose to men in a fair competition, they typically complain about being discriminated against.
17. A good woman should be set on a pedestal by her man.

18. There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances.
19. Women, compared to men, tend to have a superior moral sensibility.
20. Men should be willing to sacrifice their own well-being in order to provide financially for the women in their lives.
21. Feminists are making entirely reasonable demands of men.
22. Women, as compared to men, tend to have a more refined sense of culture and good taste.

APPENDIX J

STRESS QUESTIONS

Construct: current/recent stressors

Measure: Inventory of College Students' Recent Life Experiences (ICSRLE; Kohn, Lafreniere, & Gurevich, 1990).

Directions: Following is a list of experiences which many students have some time or other. Please indicate for each experience how much it has been a part of your life over the past month. Select "1" if it was not at all part of your life over the past month; "2" for an experience which was only slightly part of your life over that time; "3" for an experience which was distinctly part of your life; and "4" for an experience which was very much part of your life over the past month.

Response Options:

- 1 = not at all part of my life
- 2 = only slightly part of my life
- 3 = distinctly part of my life
- 4 = very much part of my life

Items:

1. Conflicts with boyfriend's/girlfriend's/spouse's family
2. Being let down or disappointed by friends
3. Conflict with professor(s)
4. Social rejection
5. Too many things to do at once
6. Being taken for granted
7. Financial conflicts with family members
8. Having your trust betrayed by a friend
9. Separation from people you care about
10. Having your contributions overlooked
11. Struggling to meet your own academic standards
12. Being taken advantage of
13. Not enough leisure time
14. Struggling to meet the academic standards of others
15. A lot of responsibilities
16. Dissatisfaction with school
17. Decisions about intimate relationship(s)
18. Not enough time to meet your obligations
19. Dissatisfaction with your mathematical ability
20. Important decisions about your future career

21. Financial burdens
22. Dissatisfaction with your reading ability
23. Important decisions about your education
24. Loneliness
25. Lower grades than you hoped for
26. Conflict with teaching assistant(s)
27. Not enough time for sleep
28. Conflicts with your family
29. Heavy demands from extracurricular activities
30. Finding courses too demanding
31. Conflicts with friends
32. Hard effort to get ahead
33. Poor health of a friend
34. Disliking your studies
35. Getting “ripped off” or cheated in the purchase of services
36. Social conflicts over smoking
37. Difficulties with transportation
38. Disliking fellow student(s)
39. Conflicts with boyfriend/girlfriend/spouse
40. Dissatisfaction with your ability at written expression
41. Interruptions of your school work
42. Social isolation
43. Long waits to get service (e.g., at banks, stores, etc.)
44. Being ignored
45. Dissatisfaction with your physical appearance
46. Finding course(s) uninteresting
47. Gossip concerning someone you care about
48. Failing to get expected job
49. Dissatisfaction with your athletic skills

APPENDIX K**MARIJUANA USE QUESTIONS**

Construct: marijuana use

Measure: The Modified Alcohol and Other Drug Assistance Program for Students (White, Mun, & Morgan, 2008)

Directions: No additional instructions will be provided to participants; item will just be presented.

Response Options:

- 0 = never
- 1 = less than once a month
- 2 = about once a month
- 3 = two or three times a month
- 4 = once or twice a week
- 5 = three or four times a week
- 6 = every day or nearly every day

Item:

“How often have you used marijuana in the last three months?”

APPENDIX L

ALCOHOL USE QUESTIONS

Constructs: alcohol consumption, alcohol problems, alcohol dependence

Measure: The Alcohol Use Disorders Identification Test (AUDIT; Babor, Higgins-Biddle, Saunders, & Monteiro, 2001)

Directions: Now you will be asked some question about your use of alcoholic beverages (beer, wine, vodka, etc.) during this past year.

Response Options and Items:

1. How often do you have a drink containing alcohol?

0 = Never (Skip to Qs 9-10)

1 = Monthly or less

2 = 2 to 4 times a month

3 = 2 to 3 times a week

4 = 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

1 = 3 or 4

2 = 5 or 6

3 = 7, 8, or 9

4 = 10 or more

3. How often do you have six or more drinks on one occasion?

0 = Never

1 = Less than monthly

2 = Monthly

3 = Weekly

4 = Daily or almost daily

4. How often during the last year have you found that you were not able to stop drinking once you had started?

0 = Never

1 = Less than monthly

2 = Monthly

3 = Weekly

4 = Daily or almost daily

5. How often during the last year have you failed to do what was normally expected from you because of drinking?

- 0 = Never
- 1 = Less than monthly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily or almost daily

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

- 0 = Never
- 1 = Less than monthly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily or almost daily

7. How often during the last year have you had a feeling of guilt or remorse after drinking?

- 0 = Never
- 1 = Less than monthly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily or almost daily

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?

- 0 = Never
- 1 = Less than monthly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily or almost daily

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

- 0 = No
- 2 = Yes, but not in the last year
- 4 = Yes, during the last year

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

- 0 = No
- 2 = Yes, but not in the last year
- 4 = Yes, during the last year

APPENDIX M

RELATIONSHIP SATISFACTION QUESTIONS

Construct: relationship satisfaction

Measure: Relationship Assessment Scale (RAS; Hendrick, 1988)

Directions: Please select the choice which best answers that item for you.

Response Options and Items:

How well does your partner meet your needs?

1 = poorly

3 = average

5 = extremely well

In general, how satisfied are you with your relationship?

1 = unsatisfied

3 = average

5 = extremely satisfied

How good is your relationship compared to most?

1 = poor

3 = average

5 = excellent

How often do you wish you hadn't gotten in this relationship?

1 = very often

3 = average

5 = never

To what extent has your relationship met your original expectations:

1 = hardly at all

3 = average

5 = completely

How much do you love your partner?

1 = not much

3 = average

5 = very much

How many problems are there in your relationship?

1 = very many

3 = average

5 = very few

APPENDIX N

EMOTION REGULATION QUESTIONS

Construct: emotion regulation

Measure: Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004)

Directions: Please indicate how often the following items apply to you.

Response Options:

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

Items:

1. When I'm upset, I feel guilty for feeling that way.
2. When I'm upset, I feel ashamed with myself for feeling that way.
3. When I'm upset, I become embarrassed for feeling that way.
4. When I'm upset, I become angry with myself for feeling that way.
5. When I'm upset, I become irritated with myself for feeling that way.
6. When I'm upset, I feel like I am weak.
7. When I'm upset I have difficulty concentrating.
8. When I'm upset, I have difficulty focusing on other things.
9. When I'm upset, I have difficulty getting work done.
10. When I'm upset, I have difficulty thinking about anything else.
11. When I'm upset, I can still get things done.
12. When I'm upset, I lose control over my behaviors.
13. When I'm upset, I have difficulty controlling my behaviors.
14. When I'm upset, I become out of control.
15. When I'm upset, I feel out of control.
16. I experience my emotions as overwhelming and out of control.
17. When I'm upset, I feel like I can remain in control of my behaviors.
18. I am attentive to my feelings.
19. I pay attention to how I feel.
20. When I'm upset, I acknowledge my emotions.
21. When I'm upset, I believe that my feelings are valid and important.
22. I care about what I am feeling.
23. When I'm upset, I take time to figure out what I'm really feeling.
24. When I'm upset, I believe that I'll end up feeling very depressed.
25. When I'm upset, I believe that I will remain that way for a long time.

26. When I'm upset, I believe that wallowing in it is all I can do.
27. When I'm upset, it takes me a long time to feel better.
28. When I'm upset, I believe that there is nothing I can do to make myself feel better.
29. When I'm upset, I know that I can find a way to eventually feel better
30. When I'm upset, my emotions feel overwhelming.
31. When I'm upset, I start to feel very bad about myself.
32. I have difficulty making sense out of my feelings.
33. I have no idea how I am feeling.
34. I am confused about how I feel.
35. I know exactly how I am feeling.
36. I am clear about my feelings.

APPENDIX O

ANGER MANAGEMENT QUESTIONS

Construct: anger management

Measure: Anger Management Scale (AMS; Stith & Hamby, 2002)

Directions: The following statements are about you or the relationship between you and your partner. Please read each statement and decide how much agree with it.

Response Options:

- 1 = strongly disagree
- 2 = disagree
- 3 = agree
- 4 = strongly agree

Items:

1. When my partner picks a fight with me, I fight back.
2. When my partner won't give in, I get furious.
3. I often take what my partner says personally.
4. My partner believes I have a short fuse.
5. I can feel my blood rising when I start to get mad at my partner.
6. Taking a break from my partner is a good way for me to calm down.
7. When my partner is around, I feel like a bomb waiting to explode.
8. I prefer to get out of the way when my partner hassles me.
9. It is my partner's fault when I get mad.
10. When my partner is nice to me I wonder what my partner wants.
11. No matter how angry I am, I am responsible for my behavior toward my partner.
12. When my partner provokes me, I have a right to fight back.
13. I can feel in my body when I'm starting to get mad at my partner.
14. My partner does things just to annoy me.
15. There is nothing I can do to control my feelings when my partner hassles me.
16. My partner is rude to me unless I insist on respect.
17. My partner likes to make me mad.
18. When my partner annoys me, I blow up before I even know that I am getting angry.
19. I recognize when I am beginning to get angry at my partner.
20. I am able to remain calm and not get angry at my partner.
21. I can usually tell when I am about to lose my temper at my partner.
22. I take time out as a way to control my anger at my partner.
23. I take a deep breath and try to relax when I'm angry at my partner.
24. I can set up a time out period during an argument with my partner.
25. When I feel myself getting angry at my partner, I try to tell myself to calm down.

26. I often think of something pleasant to keep from thinking about my anger at my partner.
27. When I'm angry at my partner, I try to handle my feelings so no one gets hurt.
28. If I keep thinking about what made me mad, I get angrier.
29. When arguing with my partner, I often raise my voice.
30. I do something to take my mind off my partner when I'm angry.
31. When I'm mad at my partner, I say what I think without thinking of the consequences.
32. When my partner's voice is raised, I don't raise mine.
33. My partner thinks I am very patient.
34. I can calm myself down when I'm upset with my partner.
35. When I feel myself starting to get angry at my partner, I try to stick to talking about the problem.
36. I am even tempered with my partner.

APPENDIX P**ATTENTION CHECKS**

Attention Check Items:

1. Please choose “some of the time.”

1 = all of the time

2 = most of the time

3 = a good bit of the time

4 = some of the time

5 = a little bit of the time

6 = none of the time

2. Which of the following is the largest number?

1 = 159

2 = 892

3 = 231

4 = 745

3. Please choose “frequently.”

0 = never

1 = rarely

2 = occasionally

3 = frequently

4 = very frequently

4. In many parts of the Northern United States the coldest month of the year is:

1 = July

2 = October

3 = April

4 = January

5. Please choose “always.”

1 = never

2 = rarely

3 = sometimes

4 = always

Note: Items 1, 2, and 3 will be asked in the first half of the questionnaire; Items 4 and 5 will be asked early on in the second half of the questionnaire.

VITA

Phoebe Tabb Hitson

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Education

- | | |
|-------------|--|
| M.S. | Experimental Psychology (awarded August 2016)
Department of Psychology
Old Dominion University |
| B.S. | Psychology (awarded August 2013)
Department of Psychology
Old Dominion University |

Research Interests

- Intimate partner violence
- Unwanted pursuit and stalking

Selected Publications and Presentations

- Lewis, R. J., Winstead, B. A., Braitman, A. L., & **Hitson, P.** (2018). Discrepant drinking and partner violence perpetration over time in lesbians' relationships. *Violence Against Women*, 24, 1149-1165.
- Hitson, P. T.** & Winstead, B. A. (2019). *Unidirectional and bidirectional intimate partner violence in same-sex relationships*. Poster presentation presented at Association for Psychological Science, Washington, D.C.